N60138.AR.000227
FISC WILLIAMSBURG
5090.3a

FINAL BACKGROUND STUDY REPORT CHEATHAM ANNEX FISC WILLIAMSBURG VA

05/01/2011

CH2M HILL

Final

Background Study Report

Naval Weapons Station Yorktown, Yorktown, Virginia and Cheatham Annex, Williamsburg, Virginia

Prepared for

Department of the Navy

Naval Facilities Engineering Command
Mid-Atlantic Division

Contract No.
N62470-08-D-1000
CTO-0054

May 2011

Prepared by

CH2MHILL

Final

Background Study Report

Naval Weapons Station Yorktown, Yorktown, Virginia and Cheatham Annex, Williamsburg, Virginia

Contract Task Order 0054

May 2011

Prepared for

Department of the Navy
Naval Facilities Engineering Command
Mid-Atlantic

Under the

NAVFAC CLEAN 1000 Program
Contract N62470-08-D-1000

Prepared by

CH2MHILL

Virginia Beach, Virginia

Contents

Acronyms and Abbreviations ..... **v**

1 Introduction **1-1**
1.1 Objectives 1-1
1.2 Report Organization 1-2

2 Conceptual Model **2-1**
1.3 Regional Characteristics 2-1
1.4 Facility Characteristics 2-1
1.4.1 Description and History 2-1
1.4.2 Geology and Hydrogeology 2-2
1.4.3 Soil 2-5

3 Background Data Sets **3-1**
3.1 Soil 3-1
3.2 Groundwater 3-1
3.2.1 Sample Location Rationale 3-1
3.2.2 Field Investigation Activities 3-2
3.2.3 Data Management and Evaluation 3-4

4 Background Data Evaluation **4-1**
4.1 Analytical Results 4-1
4.1.1 Surface Soil 4-1
4.1.2 Subsurface Soil 4-1
4.1.3 Cornwallis Cave Aquifer Groundwater 4-2
4.1.4 Yorktown-Eastover Aquifer Groundwater 4-2
4.2 Background Data Evaluation 4-3
4.3 Statistical Evaluation 4-4
4.4 Use of Background Data 4-5
4.4.1 Site Screening or Site Investigation Process 4-5
4.4.2 Remedial Investigations 4-6

5 References **5-1**

Appendices

A Raw Analytical Data
B IDW Manifests
C Soil Boring and Monitoring Well Installation Logs
D Data Validation Report
E Technical Memorandum Calculation of UTL Background Values
F Groundwater Box Plots

Tables

3-1 Background Study Soil Sample Summary
3-2 Groundwater Sampling Summary
3-3 Groundwater Quality Data

4-1 CAX Surface Soil Detections
4-2 WPNSTA Yorktown Surface Soil Detections
4-3 CAX Subsurface Soil Detections
4-4 WPNSTA Yorktown Subsurface Soil Detections
4-5 Surface Soil Summary Statistics
4-6 Subsurface Soil Summary Statistics
4-7 Cornwallis Cave Aquifer Detections
4-8 Yorktown-Eastover Aquifer Detections
4-9 Cornwallis Cave Groundwater Summary Statistics
4-10 Yorktown Eastover Aquifer Groundwater Summary Statistics
4-11 Background UTL Values and Central Tendency Statistics

Figures

2-1 Activity Location Map
2-2 Site Map
2-3 Hydrogeologic Units in York County
2-4 Hydrogeologic Cross-Section A-A′
2-5 Hydrogeologic Cross-Section B-B′
2-6 Hydrogeologic Cross-Section Locations
2-7 General Soil Association Map

3-1 WPNSTA Yorktown Background Soil Sample Locations
3-2 CAX Background Soil Sample Locations
3-3 WPNSTA Yorktown and CAX Background Groundwater Sample Locations

Acronyms and Abbreviations

ANOVA	Analysis of Variance
bgs	below ground surface
BTAG	Biological Technical Assistance Group
CAX	Naval Weapons Station Yorktown Cheatham Annex
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-term Environmental Action—Navy
COC	constituent of concern
COPC	constituents of potential concern
DCA	dichloroethane
DCE	dichloroethene
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DO	dissolved oxygen
DPT	direct push technology
°F	degrees Fahrenheit
HQ	hazard quotient
ID	inner diameter
IDW	investigation-derived waste
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
MTBE	methyl-tert-butyl ether
NAVFAC	Naval Facilities Engineering Command
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyls
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
RI	Remedial Investigation
RSL	Risk-based Screening Level
SI	Site Investigation

SSP	Site Screening Process
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCE	trichloroethene
TCL	Target Compound List
TNT	trinitrotoluene
U.S.	United States
UCL	upper confidence limit
USCS	United Soil Classification System
UTL	upper tolerance limit
USEPA	United States Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compound
WPNSTA	Naval Weapons Station

SECTION 1

Introduction

This report presents the results of the Background Study at Naval Weapons Station (WPNSTA) Yorktown in Yorktown, Virginia and Cheatham Annex (CAX) in Williamsburg, Virginia. The report has been prepared under the Naval Facilities Engineering Command (NAVFAC), Mid-Atlantic, Comprehensive Long-term Environmental Action—Navy (CLEAN) Contract N62470-08-D-1000, Contract Task Order 0054. The technical approach for evaluating background conditions is based on *Guidance for Environmental Background Analysis, Volume I: Soil* (Navy, 2002) and *Guidance for Environmental Background Analysis, Volume III: Groundwater* (Navy, 2004).

Background concentrations for natural and anthropogenic constituents are used for comparison to site data to support the identification of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) release. The *Navy Interim Final Policy on the Use of Background Chemical Levels* (Navy, 2000) and the United States Environmental Protection Agency's (USEPA's) *Role of Background in the CERCLA Cleanup Program* guidance (USEPA, 2002) acknowledge risk management and remedial actions for CERCLA sites should account for the influence of natural and anthropogenic background conditions, and that cleanup goals for natural and anthropogenic constituents of concern (COCs) from an identified CERCLA release should not be set below corresponding background concentrations.

To establish site-specific background conditions, Baker Environmental, Inc. conducted a background investigation at WPNSTA Yorktown in 1995 (Baker, 1995) and for CAX in 2001 (Baker, 2003) that included the sampling and analysis of soil, groundwater, sediment (WPNSTA Yorktown only), and surface water (WPNSTA Yorktown only). Data collected were used to calculate 95 percent upper confidence limits (UCLs) of the mean for surface soil, subsurface soil, and groundwater.

1.1 Objectives

Although previous background investigations were conducted at WPNSTA Yorktown and CAX, the Department of the Navy (Navy), the United States Environmental Protection Agency (USEPA), and the Virginia Department of Environmental Quality (VDEQ) agreed that additional evaluation of background (natural and anthropogenic) conditions was warranted to more accurately identify site-related contamination and assess potential risks from exposure to site contaminants. This additional evaluation of background conditions was warranted based on the following:

- The 95 percent UCL of the mean provides a conservative estimate of the mean and is used in determining whether the mean of a population exceeds a constant threshold. As such, it provides a statistic about the center tendency of a given population and does not address individual concentrations or provide an estimate of the upper tail of the distribution.

- A UTL is a more appropriate background threshold value because it represents a UCL of an upper percentile, specifically for this evaluation, the 95 percent UCL of the 95th percentile. Individual values consistent with the site population will only rarely exceed the UTL.

- The greatest possible sample size, and therefore more comprehensive background data set, can be realized by combining existing background data from WPNSTA Yorktown and CAX facilities that share a common geographic boundary and the same physiographic, hydrogeologic, and soil association characteristics, which is further demonstrated by the fact that much of the background data collected as part of the CAX study are from samples collected on WPNSTA Yorktown.

- Insufficient background groundwater data existed for the Yorktown-Eastover aquifer relevant to future CERCLA groundwater investigations. More current background data from existing and new monitoring wells for this transient media were preferred.

This Background Study Report will present data and data evaluations intended to serve as an update to the existing background data sets for the two facilities. The objective of this background study is not to re-evaluate or re-visit past use of background data but to supplement existing data for the establishment of a more comprehensive and representative background data set for future application to CERCLA investigations/actions. The specific objectives of the Background Study Report are to:

- Present soil and groundwater background data which can be used in future population (background) to population (site) statistical analyses
- Establish the upper range of background concentrations of inorganics in surface and subsurface soil and groundwater through the calculation of UTLs
- Establish central tendency statistics
- Outline the use of updated background data during future CERCLA investigations

1.2 Report Organization

The Background Study Report is organized into the following:

- Section 1 – Introduction
- Section 2 – Conceptual Model
- Section 3 – Background Data Sets
- Section 4 – Background Data Evaluation
- Section 5 - References

Figures and tables referenced throughout the text are provided at the end of each section. Appendices are provided after Section 5.

SECTION 2

Conceptual Model

2.1 Regional Characteristics

WPNSTA Yorktown and CAX are located on the Virginia Peninsula adjacent to the York River (**Figure 2-1**) in the Tidewater area of Virginia. The Virginia Peninsula is bordered to the southwest by the James River, to the northeast by the York River, and to the southeast by the confluence of the James River and the Chesapeake Bay. The James and York Rivers are tidally influenced and fluctuate approximately 3 feet during tide cycles. In the region of WPNSTA Yorktown and CAX, the Virginia Peninsula is primarily wooded with a mix of hard woods and pine. Both facilities lie within the Atlantic Coastal Plain physiographic province, which is characterized by its rolling terrain and low elevations ranging from sea level to 50 feet above mean sea level (msl).

The climate in the Tidewater area is moderated by its proximity to the Atlantic Ocean and Chesapeake Bay. The average annual temperature is 60 degrees Fahrenheit (°F), with average temperatures ranging from 42°F in the winter to 77°F in the summer. On average, two hurricanes a year come close enough to affect Virginia, but fewer than one per year comes ashore. Northeasters are also a cause of wind-set tides; these storms occur from late fall to spring. Average annual precipitation is 45 inches, with approximately 56 percent of the rainfall occurring from April through September.

Precipitation is the main source of recharge to area aquifers. Between 50 and 70 percent of the precipitation is removed from the area via surface runoff and evapotranspiration. The remaining precipitation recharges the aquifers by percolating through the upper soils (Siudyla et al., 1981). Approximately 90 percent of recharged groundwater returns to surface water lakes, creeks, and streams as base-flow.

2.2 Facility Characteristics

2.2.1 Description and History

Naval Weapons Station Yorktown

WPNSTA Yorktown encompasses 10,624 acres between Interstate 64 and the York River in York and James City Counties on the Virginia Peninsula (**Figure 2-1**). Originally named the United States (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.

WPNSTA Yorktown is located within the York River Basin to the north and the James River Basin (**Figure 2-2**). The facility contains several tributaries of the York River: King Creek, Felgates Creek, and Indian Field Creek to the north and Ballard Creek to the east; one main tributary of the James River: Blows Mill Run; as well as several ponds: Lee Pond, Roosevelt Pond, and Ponds 10, 11, and 12. Wetlands have been identified along the York and James River tributaries as well as shoreline areas of the York River.

Cheatham Annex

CAX encompasses 2,300 acres east of Williamsburg, between Interstate 64 and the York River in York County on the Virginia Peninsula (**Figure 2-1**). CAX was commissioned in 1943 as a satellite unit of the Naval Supply Depot to provide bulk storage facilities and serve as an assembly and overseas shipping point throughout World War II. CAX is located on the site of the former DuPont Company Penniman facility and is currently used to supply Atlantic Fleet ships and provide recreational opportunities to military and civilian personnel. The former Penniman facility was used as a powder and shell loading plant during World War I and was closed in 1918. Between 1918 and CAX's commissioning in 1943, the property was used for farming or left idle. At inception, CAX occupied approximately 3,349 acres; however, several portions of the base have been declared surplus and transferred to other government jurisdictions, including the U.S. Department of the Interior, the Commonwealth of Virginia, and York County. CAX is divided into two separate parcels, with the larger parcel situated along the banks of the York River. Almost all of the activities at CAX (administration, training, maintenance, support, and housing) take place within this portion of the base. The smaller parcel is located south of the larger parcel and contains Jones Mill Pond. This smaller parcel mainly serves as a watershed protection area.

CAX is located within the York River Basin and contains several tributaries of the York River: Cub Creek and Queens Creek to the north and King Creek to the south (**Figure 2-2**). Additional surface water features within CAX include Cheatham Pond and Penniman Lake, created in 1943 by dams constructed on the tidally-influenced Queens and King Creeks; freshwater, non-tidal Jones Mill Pond, created by damming a potion of Cub Creek; and three small, man-made ponds: Youth Pond, Rodgers Pond, and Upstream Pond. Wetlands have been identified along the York River tributaries as well as shoreline areas of the York River.

2.2.2 Geology and Hydrogeology

WPNSTA Yorktown and CAX are located in the Atlantic coastal plain physiographic province, which is underlain by multiple layers of unconsolidated sediments of Quaternary, Tertiary, and Cretaceous ages (**Figure 2-3**). These sediments were deposited as the igneous, metamorphic and sedimentary rock formations of the Appalachian Mountains were eroded. The Appalachian Mountains were formed as a result of the deformation of marine sedimentary rocks and ocean floor during several plate collisions. The temperatures and

pressures that were generated by the colliding plates were such that the crustal rocks melted to form magma, which was subsequently cooled, forming the granitic backbone of the Appalachian Mountains. As the mountains grew, erosion wore them away. Sediment was transported from the mountains by rivers and streams to the coast, building up successive layers that fanned out onto the continental shelf. Successive sea level rises and falls deposited fluvial estuarine and marine sediment, further building the coastal plain. Widely fluctuating sea levels split the coastal plain into river terraces of different elevations bounded by scarp features resulting from shoreline erosion. The coastal plain in the region surrounding WPNSTA Yorktown and CAX is comprised of four terraces: Lackey Plain, Croaker Flat, Huntington Flat, and Grafton Plain (from highest to lowest); and three scarps: Kingsmill, Lee Hall, and Camp Peary. The WPNSTA Yorktown and CAX areas lay within the Lackey Plain and Croaker Flat terraces separated by the Camp Peary scarp (**Figure 2-2**) (Brockman et al., 1997).

Sediments deposited on the Atlantic coastal plain make-up numerous geologic formations; however, this study will focus on the nine geologic formations dating from the early Miocene to late Pleistocene age that make up the shallow aquifer system underlying WPNSTA Yorktown and CAX. These formations consist of the Calvert, St. Marys, Eastover, Yorktown, Sedley, Bacons Castle, Windsor, Chuckatuck, and Shirley (Brockman et al., 1997). Geologic formations beneath the topographically lower Croaker Flat were eroded during former low sea level stands while geologic formations beneath the topographically higher Lackey Plain were not eroded. As a result, part or all of some geologic formations are truncated by the Camp Peary Scarp and missing beneath the Croaker Flat, and the geologic formations of Pliocene and Pleistocene age beneath the Lackey Plain are different than those beneath the Croaker Flat. The Rushmere Member of the Yorktown Formation and underlying geologic formations exist beneath both terraces, but those overlying the Rushmere Member differ. On Croaker Flat, the Bacons Castle and Sedley Formations and the Moore House Member of the Yorktown Formation are missing.

Figure 2-3 illustrates how the geologic formations of the Lackey Plain and Croaker Flat are classified into hydrogeologic units based on aquifer and confining unit characteristics. The shallow aquifer system underlying WPNSTA Yorktown and CAX is comprised of all or some of the following units:

- Columbia aquifer
- Cornwallis Cave confining unit
- Cornwallis Cave aquifer
- Yorktown confining unit
- Yorktown-Eastover aquifer
- Eastover-Calvert confining unit

The complete shallow aquifer system is present underlying Lackey Plain; however, seaward of the Camp Peary Scarp, underlying Croaker Flat, some to all of the Columbia aquifer, the Cornwallis Cave confining unit, the Cornwallis Cave aquifer, and the Yorktown confining unit are missing. **Figures 2-4 and 2-5** illustrate cross sections of the shallow aquifer system underlying WPNSTA Yorktown and CAX. Cross-section locations are depicted on **Figure 2-6**. The deep Atlantic coastal plain aquifers are separated from the shallow aquifer system by the Eastover-Calvert confining unit.

The Columbia aquifer consists of very fine to very coarse-grained sands, silty/clayey sand, and sandy clay of the Bacons Castle, Windsor, Chuckatuck, and Shirley formations. These formations represent a coarsening-upward sequence deposited during a sea level regression. While the formations range in thickness between 0 and 80 feet, the aquifer is thin, discontinuous and saturated in isolated areas underlying the facilities. Where present, the Columbia aquifer ranges in thickness from 5 to 20 feet. Perched aquifers can temporarily form in the sediments above the underlying Yorktown or Cornwallis Cave confining units. Groundwater within the Columbia aquifer is locally influenced by nearby surface water bodies.

The Cornwallis Cave confining unit consists of silts and clays of the upper Sedley and lower Bacons Castle formations deposited in fluvial-estuarine and marine environments. The confining unit impedes the vertical flow of groundwater between the Columbia and Cornwallis Cave aquifers, but is only present south and west of the Camp Peary scarp. The unit is absent from Croaker Flat and beneath many of the stream valleys as a result of erosion. Where present underlying the facilities, the unit is typically 8 ft thick and attains a maximum thickness of 22 feet.

The Cornwallis Cave aquifer consists of shell hash, clayey or sandy shell hash, very fine to medium-grained sands, and shelly clay of the lower Sedley and upper Yorktown formations. These formations represent a fining upward sequence deposited during a rise in sea level. As with the Cornwallis Cave confining unit, the aquifer is only present south and west of the Camp Peary scarp. The aquifer sediment thickness ranges from 60 ft in the western portion of the facilities and thins to less than 5 ft in the northeastern portion of the facilities. The aquifer is generally confined in areas of higher elevation, but is unconfined where the overlying confining unit is absent at the stream valleys. Groundwater flow in the Cornwallis Cave aquifer is separated by an east-west trending potentiometric high that divides the groundwater flow north toward the York River and south toward the James River. Groundwater within the Cornwallis Cave aquifer is locally influenced by nearby surface water bodies.

The Yorktown confining unit is composed of clays and silts of the upper parts of the Yorktown formation under Lackey Plain and parts of the Pleistocene Windsor and Chuckatuck formations underlying Croaker Flat. The confining unit extends across both facilities, except in low-lying areas where erosion during sea level regression removed all to most of the unit. The confining unit ranges from 0 to 36 feet thick and generally impedes the vertical flow of groundwater between the Cornwallis Cave (where present) and Yorktown-Eastover aquifers.

The Yorktown-Eastover aquifer consists of the predominantly sandy deposits of the lower part of the Yorktown formation and the upper Eastover formation. The base of the aquifer generally consists of very fine to fine-grained sand with a shelly fine to coarse-grained sand and silty sand throughout the remainder. The aquifer extends across both facilities and ranges from 60 to 100 feet thick. Groundwater flow in the Yorktown-Eastover aquifer is separated by an east-west trending potentiometric high that divides the groundwater flow north toward the York River and south toward the James River.

2.2.3 Soil

Soils in eastern Virginia are classified as Ultisols formed in humid areas from significant weathering and leaching processes. These processes result in clay-enriched subsoil dominated by minerals such as quartz, kaolinite, and iron oxides. Typically, Ultisols are red to yellow in color and are generally acidic. Five soil associations were identified at WPNSTA Yorktown (VPISU, 1982) and four soil associations were identified at CAX (VPISU, 1985). Soil associations are shown on **Figure 2-7** and described in the sections below.

Naval Weapons Station Yorktown

Soil associations identified at WPNSTA Yorktown are as follows:

1. **Bohicket, Johnston, and Axis Association.** This association consists of sediments deposited in the low-lying areas on marshes and floodplains by fluvial processes, and consists of silty, clayey, and sandy loam underlain by sandy clay, silty clay loam, and stratified sand and silt. This sediment is poorly-drained with slow to moderate permeability. The sediment along the tidal areas of the creeks and river is nearly horizontal, saturated, and flooded by the daily tidal events. In addition, the sediment in the upper tributaries is frequently flooded by runoff. The sediment is associated with the channels of the King, Felgates, and Indian Field, and Ballard Creeks as well as some areas of the York River.

2. **Dogue, Pamunkey, and Uchee Association.** The soil of this association was deposited on stream terraces and consists of moderate to well-drained loam and sandy loam soil underlain by clayey and sandy loam. This soil is primarily located along King, Felgates, Indian Field, and Ballard Creeks as well as the York River in gently sloping or level, non-flooded ridges.

3. **Emporia, Kempsville, and Craven-Uchee Complex Association.** This soil association consists of deep Coastal Plain sediments. The soil consists of moderate to well-drained sandy loam surface soil underlain by clay and sandy clay loam. The permeability of this association ranges from moderate to moderately low. These soils are found upland from the surface water bodies in ridges with steep side slopes.

4. **Slagle, Emporia, and Emporia Complex Association.** This soil association consists of deep Coastal Plain sediments. The soil consists of moderate to well-drained sandy loam surface soil underlain by loam, clay loam, and sandy clay loam. The permeability of this association ranges from moderately low to low. These soils are found upland from the surface water bodies in ridges with steep side slopes.

5. **Slagle, Bethera, and Craven-Uchee Association.** This soil association consists of deep Coastal Plain sediments. The soil consists of moderately well-drained surface soil of silty and sandy loam underlain by poorly-drained clay, clayey loam, silty loam, and sandy clay loam. The permeability of this association ranges from moderately low to low. These soils are found upland from the surface water bodies in broad ridges and depressions.

Cheatham Annex

Soil associations identified at CAX are as follows:

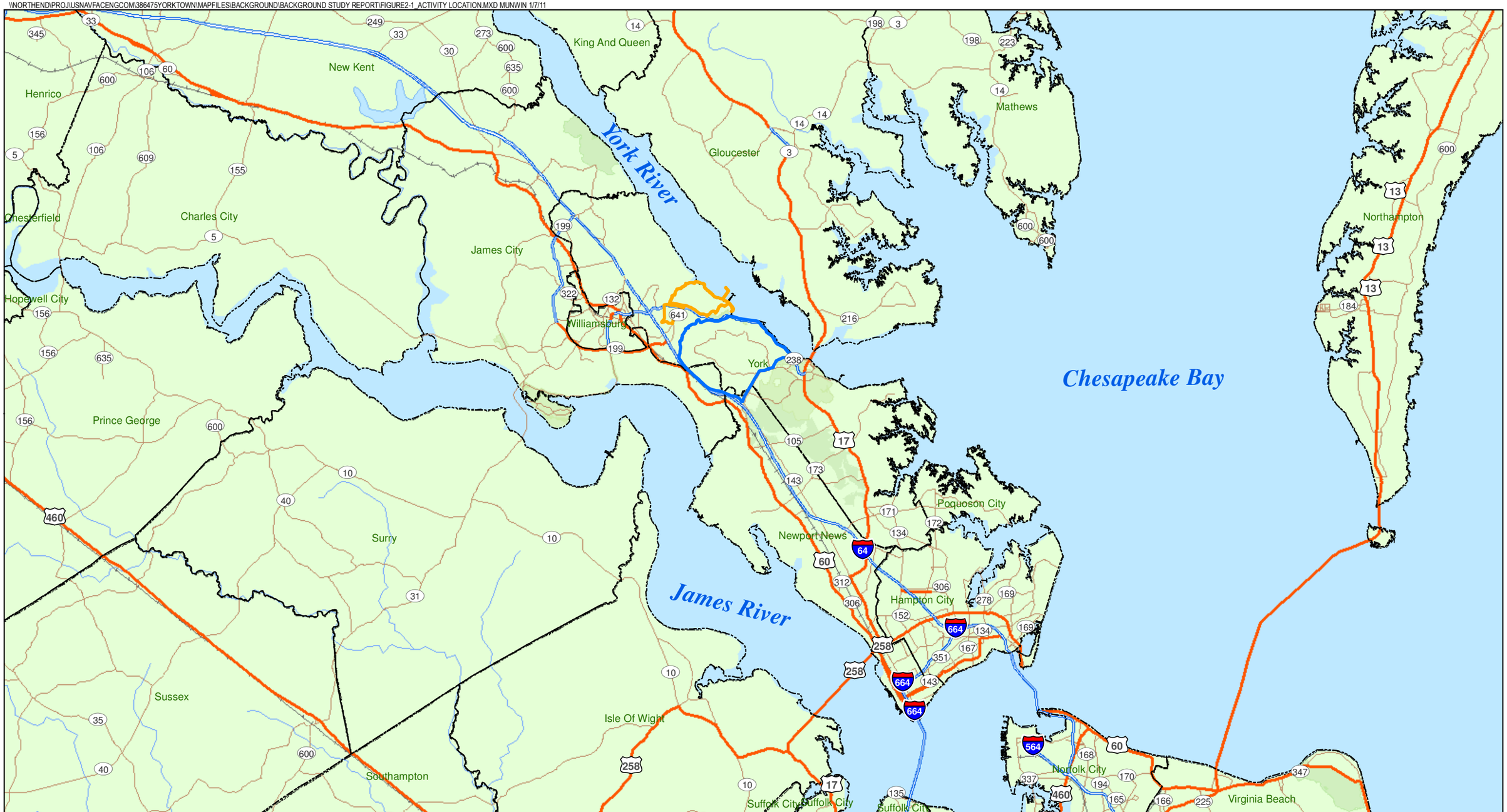
1. **Bohicket, Johnston, and Axis Association.** This association consists of sediments deposited in the low-lying areas on marshes and floodplains by fluvial processes, and consists of silty, clayey, and sandy loam underlain by sandy clay, silty clay loam, and stratified sand and silt. This sediment is poorly drained with low to moderate permeability. The sediment along the tidal areas of the creeks and river is nearly horizontal, saturated, and flooded by the daily tidal events. In addition, the sediment in the upper tributaries is frequently flooded by runoff. The sediment is associated with the channels of the King, Queens, and Cub Creeks, as well as some areas of the York River.

2. **Dogue, Pamunkey, and Uchee Association.** The soil of this association was deposited on stream terraces, and consists of moderate to well-drained loam and sandy loam soil underlain by clayey and sandy loam. This soil is primarily located along King, Queens, and Cub Creeks, as well as the York River in gently sloping or level, non-flooded ridges.

3. **Emporia, Slagle, and Craven-Uchee Complex Association.** This soil association consists of moderate to well-drained loamy and clayey Coastal Plain sediments. These soils formed on the Coastal Plain uplands and are found on medium to narrow ridges with gentle to very steep side slopes. Emporia and Slage soils are located on medium-width ridges. Craven and Uchee soils are located on the narrow ridge points and sloping area between the ridges.

4. **Kempsville, Emporia, Emporia Complex, and Craven-Uchee Complex Association.** This soil association consists of well to moderately well-drained soils underlain by loamy and clayey subsoils. These soils formed on the Coastal Plain uplands and are found on medium to narrow ridges with gentle to very steep side slopes. Kempsville and Emporia soils are located on medium-width ridges. Emporia Complex soils are located on the steep to very steep side slopes. Craven and Uchee soils are located on the narrow ridge points as well as the sloping area between the ridges.

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\BACKGROUND STUDY REPORT\FIGURE2-1_ACTIVITY LOCATION.MXD MUNWIN 1/7/11



Legend

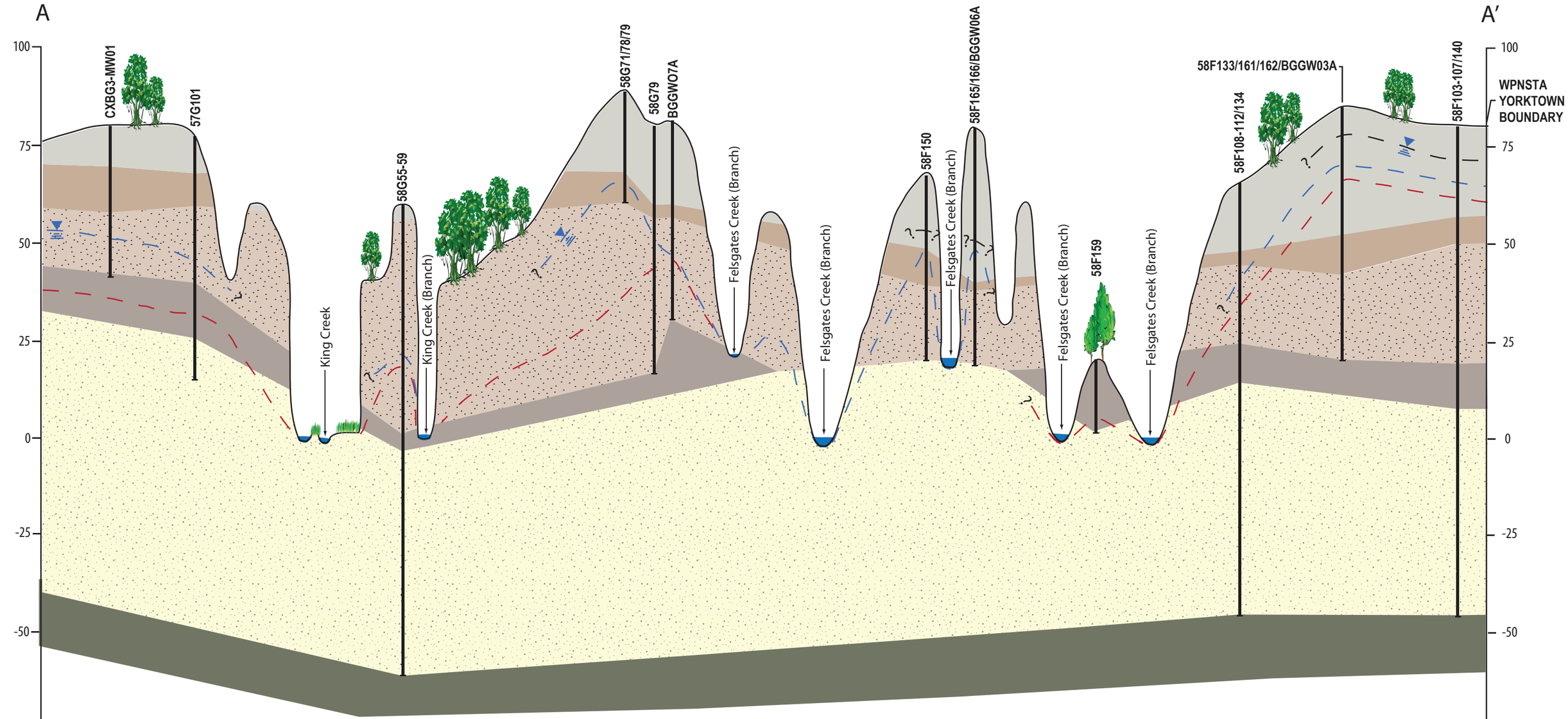
- WPNSTA Yorktown Boundary
- CAX Boundary

N W E S

0 5 10 Miles

Figure 2-1
Activity Location Map
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL



Columbia Aquifer
Cornwallis Cave Confining Unit
Cornwallis Cave Aquifer
Yorktown Confining Unit
Yorktown-Eastover Aquifer
Eastover-Calvert Confining Unit

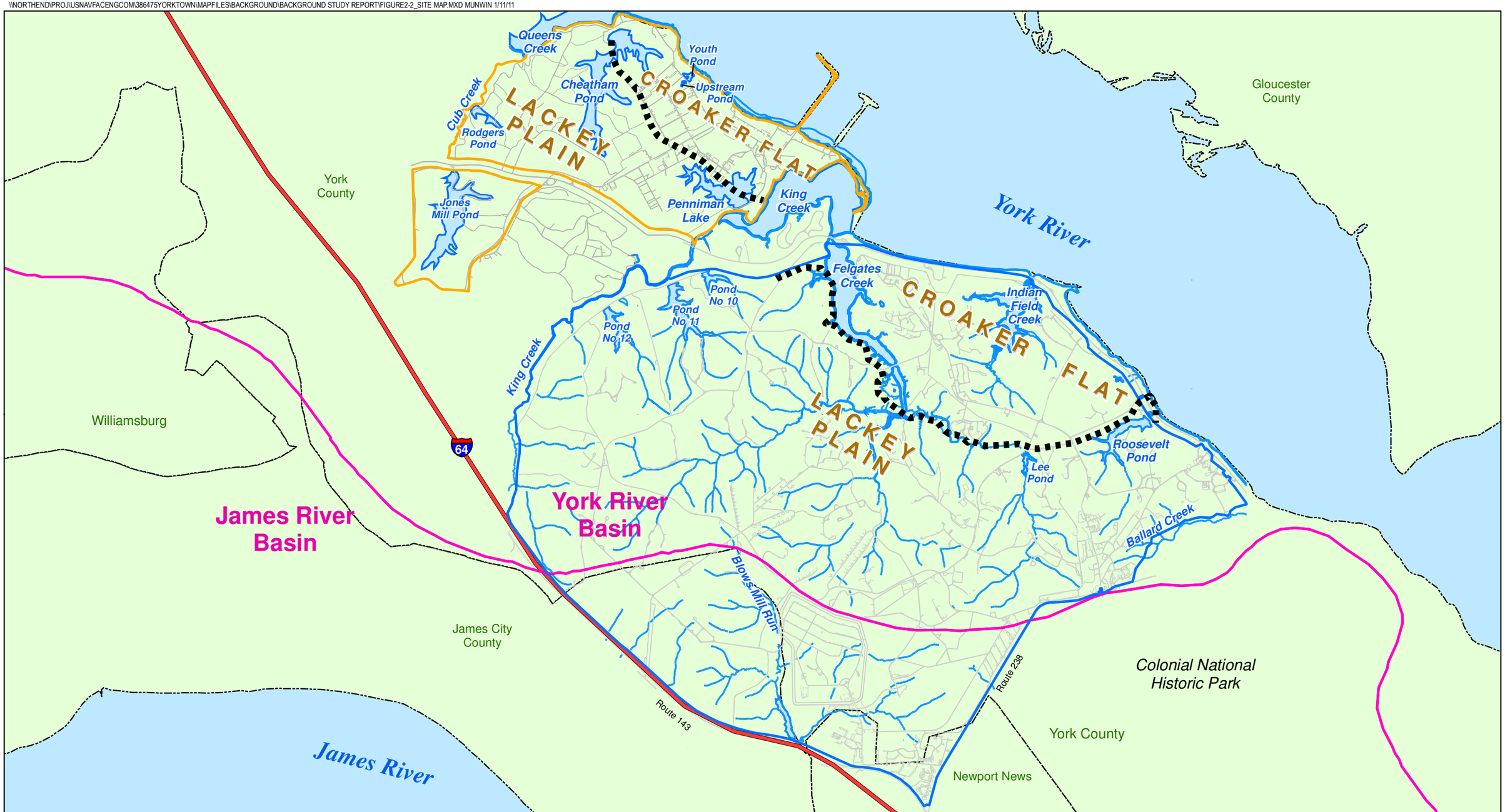
Water Table
Columbia Aquifer (Water Table Where Present)
Cornwallis Cave Aquifer Potentiometric Surface
Yorktown-Eastover Aquifer Potentiometric Surface

SCALE
1" = 500'
VERTICAL EXAGERATION
X200

FIGURE 2-4
Hydrogeologic Cross-Section A-A'
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL®

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\BACKGROUND STUDY REPORT\FIGURE2-2_SITE MAP.MXD MUNWIN 1/11/11



Legend

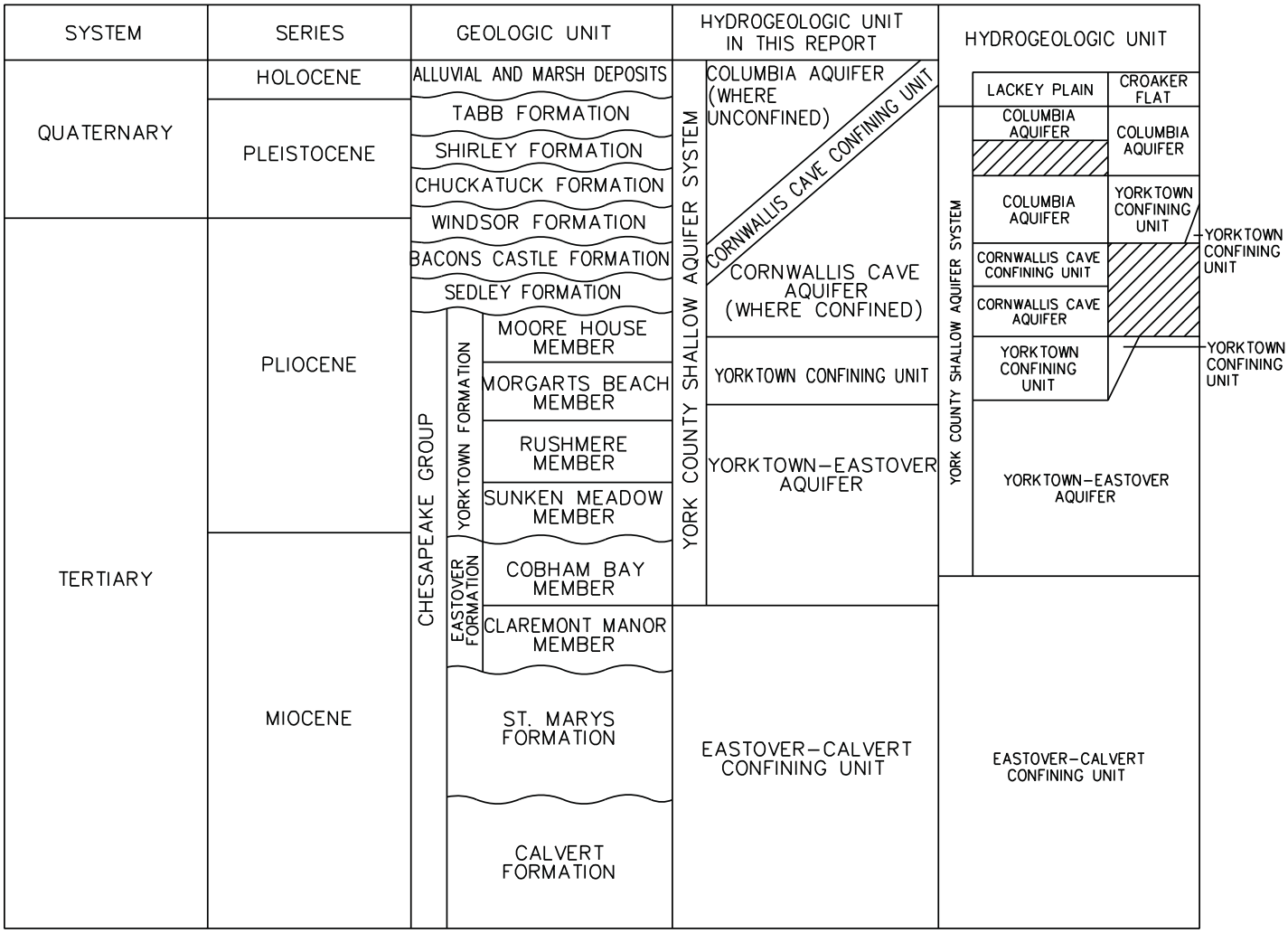
- WPNSTA Yorktown Boundary
- CAX Boundary
- Camp Peary Scarp
- Watershed Boundary
- Interstate 64
- Roads
- Shoreline and Water Bodies
- City / County Boundaries

N W E S

0 4,000 8,000 Feet

Figure 2-2
Site Map
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL



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

Figure 2-3
Hydrogeologic Units in York County
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL

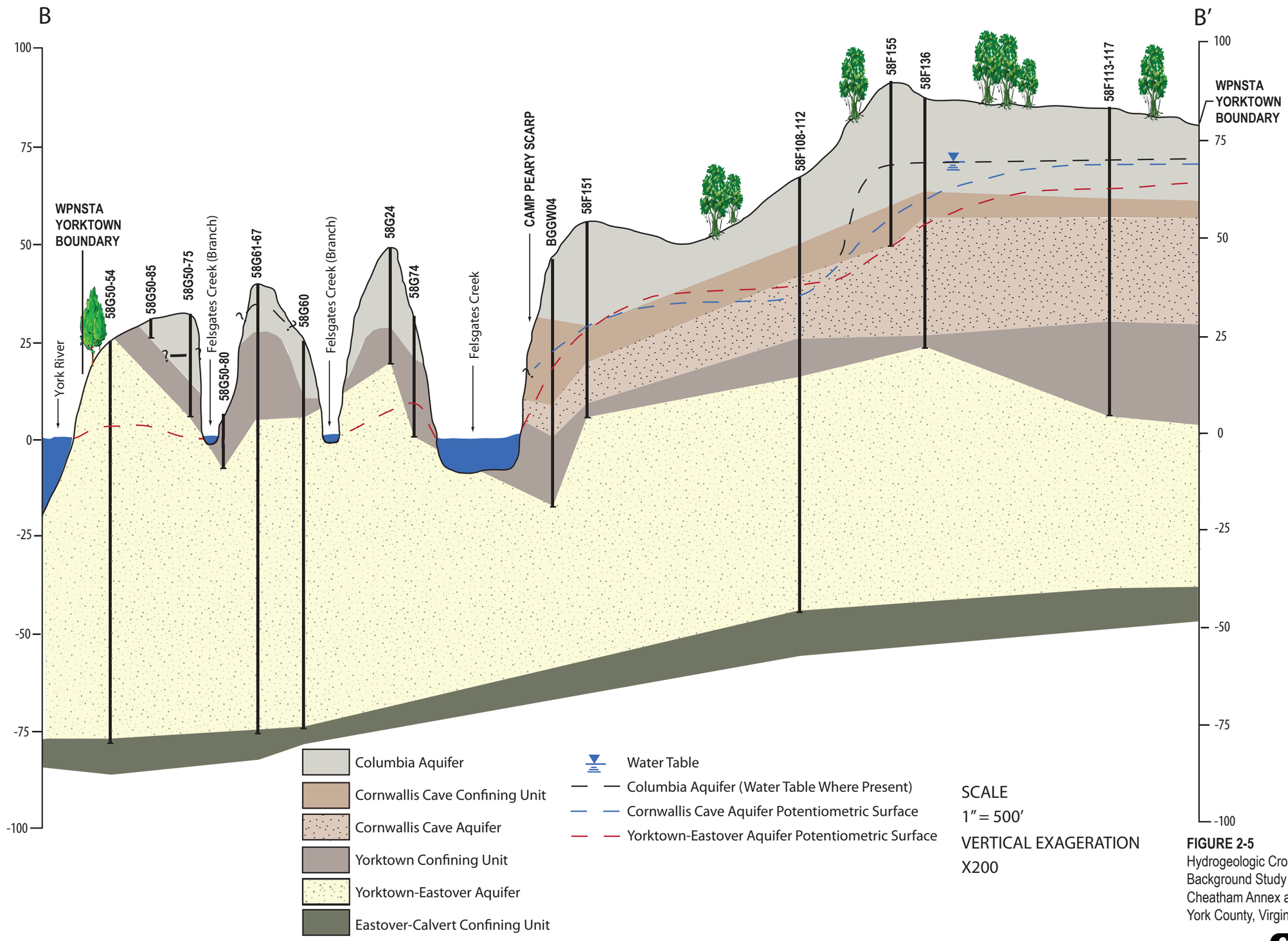
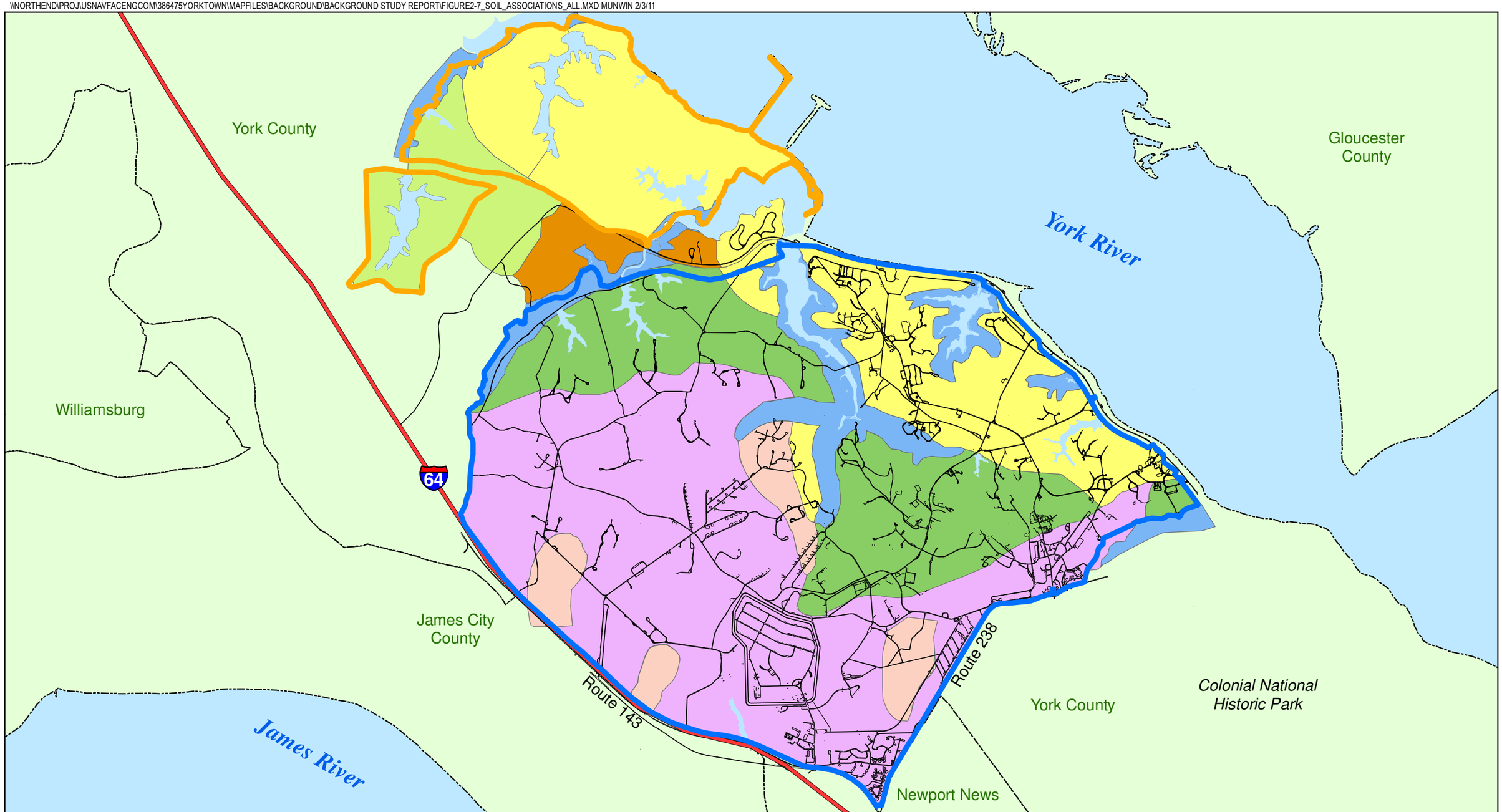


FIGURE 2-5
Hydrogeologic Cross-Section B-B'
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL®

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\BACKGROUND STUDY REPORT\FIGURE2-7_SOIL_ASSOCIATIONS_ALL.MXD MUNWIN 2/3/11



Legend

WPNSTA Yorktown Soil Associations
- Bohicket, Johnson, and Axis (1)
- Dogue, Pamunkey, and Uchee (2)
- Emporia, Kempsville, and Craven-Uchee Complex (3)
- Slagle, Emporia, and Emporia Complex (4)
- Slage, Berthera, and Craven-Uchee (5)

CAX Soil Associations
- Bohicket, Johnson, and Axis (1)
- Dogue, Pamunkey, and Uchee (2)
- Slagle, Emporia, and Craven-Uchee Complex (3)
- Emporia, Emporia Complex, Kempsville, and Craven-Uchee Complex (4)
- WPNSTA Yorktown Boundary
- CAX Boundary

N W E S

0 4,000 8,000 Feet

Figure 2-7
General Soil Association Map
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\BACKGROUND STUDY REPORT\FIGURE2-6_HYDROGEOLOGIC_XSECTS.MXD MUNWIN 2/4/11

Legend

- Cheatham Annex Boundary
- NWS Yorktown Boundary
- Cross-Section Points
  - A
  - B
- Cross-Section Locations
- Elevation Contours (25ft interval)
  - 0
  - 25
  - 50
  - 75
  - 100
- Camp Peary Scarp
- River Basin Boundary

N
W E
S

0 2,000 4,000 Feet

Figure 2-6
Hydrogeologic Cross-Section Locations
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL

SECTION 3

Background Data Sets

Because WPNSTA Yorktown and CAX share a common geographic boundary and the same physiographic, hydrogeologic, and soil association characteristics, it was determined that a more comprehensive background data set can be realized by combining background soil and groundwater data from both facilities. Increasing the sample size strengthens the statistical estimate representative of a background concentration (NAVFAC, 1998) and allows for a more comprehensive screening for outliers. The data sets used as part of this background study are described in the sections below and raw analytical data are provided in **Appendix A**.

3.1 Soil

Existing background data from WPNSTA Yorktown (Baker, 1995) and CAX (Baker, 2003) were combined to establish the background data set for use on calculating background UTLs. A summary of existing surface and subsurface soil background data collected as part of previous investigations is provided in **Table 3-1** and sample locations are depicted on **Figures 3-1 and 3-2**. As part of the 1995 WPNSTA Yorktown background investigation, 52 surface and 15 subsurface soil samples were collected. Surface soil samples were collected from 0 to 6 inches below ground surface (bgs) and subsurface soil samples were collected at varying depths between 1 and 33 feet bgs. As part of the 2001 CAX background investigation, 40 surface and 40 subsurface soil samples were collected. Surface soil samples were collected from 0 to 6 inches bgs and subsurface soil samples were collected from 6 to 24 inches bgs.

With the exception of those samples collected adjacent to railroad tracks at WPNSTA Yorktown, all previously collected surface soil data from CAX and WPNSTA Yorktown were included in the combined data set for use in calculating UTLs. All CAX subsurface soil data were included in the data set; however, to be consistent with the CAX subsurface soil sample depth, only those WPNSTA Yorktown subsurface soil samples collected from 1 to 3 feet bgs were retained. Sufficient data below the 3-foot depth interval are not available to allow for statistical comparison; however, these data are provided in **Appendix A** and will be referenced for use in population to population comparisons against soils collected from similar depth intervals as part of future site investigations.

3.2 Groundwater

3.2.1 Sample Location Rationale

Because of the transient nature of groundwater and insufficient existing background data available for the Yorktown-Eastover aquifer, an updated groundwater data set was collected as part of the background study. Background groundwater samples were collected from wells constructed in areas with similar geologic conditions to those sites evaluated as part of

CERCLA investigations, but not impacted by potential point or non-point sources of contamination (i.e., CERCLA sites, areas potentially impacted by underground storage tanks, waste water discharge outfalls, or other industrial activities). Because the Columbia aquifer underlying the facilities is limited and discontinuous, and there are few CERCLA sites potentially affecting the aquifer, the background groundwater investigation focused on the Cornwallis Cave and Yorktown-Eastover aquifers. Background/upgradient groundwater quality for CERCLA sites overlying the Columbia aquifer will be evaluated on a site-specific basis (CH2M HILL, 2009).

Fifteen sample locations were proposed within the Cornwallis Cave aquifer and 13 sample locations within the Yorktown-Eastover aquifer (CH2M HILL, 2009). With the exception of three new monitoring well locations, groundwater samples were collected from existing background and USGS (Brockman et al, 1997) study wells. Although initially proposed for use in the work plan (CH2M HILL, 2009), USGS Cornwallis Cave aquifer well YBKG-GW15-3 could not be located in the field and was replaced with existing Cornwallis Cave aquifer background well YBKG-GW08A, located approximately 1 mile south. Two new background wells were installed in the Yorktown-Eastover aquifer (YBKG-GW09A and YBKG-GW10A), and one new well in the Cornwallis Cave aquifer (YBKG-GW10), to ensure adequate sample size for statistical analyses. Additionally, the new wells provide groundwater quality data on Croaker Flat, to supplement the existing wells installed on the Lackey Plain. The location of CERCLA sites and the existing and new background monitoring wells are shown on **Figure 3-3**.

3.2.2 Field Investigation Activities

Background study field investigation activities consisted of well installation and development, and groundwater sampling. Monitoring well locations are depicted on **Figure 3-3** and a sampling summary is provided on **Table 3-2**. Prior to initiating intrusive activities, all well installation locations were cleared for utilities by a third-party subcontractor and Miss Utility of Virginia. All samples were collected in laboratory supplied bottleware and submitted to a pre-approved, subcontracted laboratory. Appropriate quality assurance (QA)/quality control (QC) sampling was conducted according to CLEAN and CH2M HILL protocols, including trip blanks, field blanks, equipment blanks, duplicates, and matrix spike (MS)/matrix spike duplicates (MSDs).

Investigation-derived waste (IDW) generated during the background study included drill cuttings from soil borings and monitoring well installation, well development and purge water, and solutions used to decontaminate the drill rig and non-disposable sampling equipment. Aqueous IDW was containerized in a 6,500-gallon Baker tank and solid IDW was containerized in approved 55-gallon drums. All IDW, with the exception of aqueous IDW generated during development and sampling of YBKL-GW02, was stored within secondary containment at the approved IDW staging location (Wright Circle) and properly labeled. IDW associated with YBKL-GW02 was stored at the sample location. Based on disposal characterization analytical results, non-hazardous wastes were identified and disposed of offsite at an approved disposal facility (**Appendix B**).

Monitoring Well Installation

Two monitoring wells were installed within the Yorktown-Eastover Aquifer and one monitoring well was installed within the Cornwallis Cave Aquifer. Monitoring wells were

installed using 6-inch and/or 8-inch mud rotary tooling. Two-foot split spoon samplers or 4-foot acetate sleeves were used to collect soil cores from each boring for lithologic characterization according to the Unified Soil Classification System (USCS). Boring logs are provided in **Appendix C**.

For monitoring wells located within the Yorktown-Eastover Aquifer, a 9-inch diameter boring was advanced to 2 feet below the top of the Yorktown Confining Unit and a 6-inch inner diameter (ID) steel surface casing was installed. The surface casing was grouted in place and allowed to cure for at least 24 hours. Once the grout had cured, a 6-inch diameter boring was advanced from the bottom of the surface casing to the total well depth. For the monitoring well installed within the Cornwallis Cave Aquifer, a 6-inch diameter boring was advanced from the ground surface to the total well depth. Each monitoring well was constructed with 2–inch ID Schedule 40 polyvinyl chloride (PVC) screen and riser. The well screen consisted of 0.010-inch slot size and was 10 feet in length. Yorktown-Eastover Aquifer monitoring wells were screened from the top of the aquifer. The Cornwallis Cave Aquifer monitoring well was screened from the top of the water table. Annular space surrounding the well screens was filled with #1 filter sand from the bottom of the boring to a depth of 2 feet above the top of the screen. A 3- to 4-foot bentonite layer was placed above the top of the sand pack. After the bentonite was hydrated, Portland Type I/II grout was placed in the remaining annular space. The groundwater monitoring wells were completed with stick-up steel casings. A watertight cap was placed on the PVC riser and the wells were marked. Well construction diagrams are provided in **Appendix C**.

Monitoring Well Development

All new and existing monitoring wells were developed to remove particles from the well screen and gravel pack that may have accumulated during the period of inactivity or during well installation to ensure that the samples collected are representative of the aquifer chemical characteristics. Wells were developed using a Hurricane pump, and conductivity, pH, turbidity, and flow rate were monitored during development.

Groundwater Sampling

Following the completion of well development, groundwater samples were collected from the newly-installed monitoring wells, 11 existing Yorktown-Eastover Aquifer monitoring wells, and 14 existing Cornwallis Cave aquifer monitoring wells. Prior to sample collection, depth to groundwater and total well depth were measured and recorded at each well. Each groundwater sample was analyzed for Target Analyte List (TAL) inorganics (total and dissolved), Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), TCL pesticides, and explosives.

All samples were collected using low-flow techniques, in accordance with *Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures* (USEPA, 1996) and all applicable SOPs. Two of the existing background monitoring wells, YBKL-GW01 and YBKL-GW02, were sampled with a peristaltic pump; all other samples were collected using a submersible Monsoon pump due to the peristaltic pump's inability to draw water from deeper well depths. Tubing and pump intakes were placed at the middle of the well screen. During purging, water quality parameters (pH, conductivity, turbidity, temperature, salinity, dissolved oxygen [DO], and oxidation-reduction potential [ORP]) were measured at all

wells, except YBKL-GW01, using a Horiba U-22 water quality meter and flow through cell to ensure aquifer stability prior to sample collection and recorded in the field logbook (**Table 3-3**). Groundwater was considered stable when a minimum of one well volume was purged and water quality parameters, recorded approximately 5 minutes apart, were stabilized to within 10 percent of one another, with the exception of turbidity, which was reduced to the maximum extent practical. Monitoring well YBKL-GW01 continuously went dry during purging and parameters were unable to be recorded; sampling was conducted following the removal of three well volumes. Because the mobility of inorganics in groundwater is highly dependent on the geochemistry of the aquifer, DO data was collected prior to sampling using Chemets colorimetric DO test kits to accurately determine the oxidative state of the groundwater at each well location.

3.2.3 Data Management and Evaluation

Data management and tracking, from the time of field collection to receipt of validated electronic analytical results, is of primary importance and reflects the overall quality of analytical results. Field samples and their corresponding analytical tests were recorded on executed chain-of-custody forms, which were submitted with the samples to the offsite laboratory. Chain-of-custody entries were checked against the site-specific project instructions and work plans to verify that all designated field samples were collected and submitted for the appropriate analysis. Upon receipt of the samples by the laboratories, a comparison to the field information was conducted to verify that each sample was analyzed for the correct parameters and appropriate QA/QC samples were collected.

Data Qualifiers

Groundwater data collected as part of this investigation were submitted to a Navy-approved third-party data validator. Procedures used for validation were *Region III Modifications to the National Functional Guidelines for Organic Data Review, Multi-media, Multi-concentration* (USEPA, 1994) and *Region III Modifications to Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis* (USEPA, 1993). The data validation report is included in **Appendix D**.

The data validation qualifiers, or flags, used for the background data were the following:

- Data qualified with a “B” flag by the data validator indicates 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 ten times the concentration of the constituent for an associated QA/QC result. If the sample concentration is less than 10 times the associated blank concentration, the conclusion is that the parameter was not detected. Further discussion of potential sources of blank contamination is discussed below.
- Data qualified with a “J” flag indicates the analyte is present but the value is estimated.
- Data qualified with a “K” flag indicates the analyte is present but the reported value may be biased high and the actual value is expected to be lower.
- Data qualified with an “L” flag indicates the analyte is present but the reported value may be biased low and the actual value is expected to be higher.

- Data qualified with an “R” flag indicates an unreliable result. The analyte may or may not have been present and the result was rejected.
- Data qualified with a “U” flag indicates the analyte was not detected above the reported laboratory detection limit.
- Data qualified with a “UJ” flag indicates the analyte was not detected and the quantitation limit may be inaccurate or imprecise.
- Data qualified with a “UL” flag indicates the analyte was not detected and the quantitation limit is probably higher.

Laboratory and Sample Blank Contamination

In some instances, constituents detected in samples may have been introduced during field sampling, transportation to the analytical laboratory, or during laboratory procedures. A variety of blank samples were analyzed and used in the QA/QC process to determine which of the constituents may or may not be attributed to the field sample.

Typically, a field blank is collected to account for ambient conditions during sample collection. An equipment/rinsate blank is collected to determine if the equipment used to collect the samples (e.g., direct push technology [DPT] screens, tubing, sample containers) was adequately clean. In addition, the laboratory analyzes a method blank in each batch of 20 samples to verify instrument cleanliness and function. Common phthalate compounds can be introduced during the analytical process and are often considered laboratory contaminants.

When blank samples are found to contain common laboratory contaminants, each of the aqueous field samples associated with that blank that contain up to 10 times the concentrations in the blanks are qualified during data validation with a “B” for that compound. A “B” qualifier means that the compound may not be attributed to the site at that sample location. When a sampling or laboratory blank contains constituents other than the common laboratory contaminants, each of the aqueous field samples associated with that blank that contain up to 5 times the concentrations is qualified during data validation with a “B” for that compound.

Table 3-1
Background Study Soil Sample Summary
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	Sample Date	Sample Depth (feet bgs)	TCL VOCs	TCL SVOCs	TAL Total Inorganics	Pesticides	PCBs	TOC	Explosives	Wet Chemistry[1]
WPNSTA Yorktown										
Surface Soil										
BGS01	7/8/1994	0.0 - 0.5			X					
BGS02	7/8/1994				X					
BGS03	7/8/1994				X					
BGS04	7/8/1994				X					
BGS05	7/8/1994				X					
BGS06	7/8/1994				X					
BGS07	7/8/1994				X					
BGS08	7/8/1994				X					
BGS09	7/8/1994				X					
BGS10	7/19/1994				X					
BGS11	7/19/1994				X					
BGS12	7/20/1994				X					
BGS13	7/20/1994				X					
BGS14	7/19/1994				X					
BGS15	7/20/1994				X					
BGS16	7/19/1994				X					
BGS17	7/20/1994				X					
BGS18*	7/20/1994				X					
BGS19	7/20/1994				X					
BGS20*	7/21/1994				X					
BGS21	7/21/1994				X					
BGS22	7/21/1994				X					
BGS23	7/21/1994				X					
BGS24*	7/21/1994				X					
BGS25	7/21/1994				X					
BGS26	7/21/1994				X					
BGS27	7/21/1994				X					
BGS28	7/21/1994				X					
BGS29	7/21/1994				X					
BGS30	7/21/1994				X					
BGS31	7/21/1994				X					
BGS33	7/22/1994				X					
BGS34*	7/23/1994				X					
BGS35	7/23/1994				X					
BGS36	7/22/1994				X					
BGS37	7/23/1994				X					
BGS38	7/23/1994				X					
BGS39*	7/23/1994				X					
BGS40	7/23/1994				X					
BGS41RR	7/9/1994		X	X	X	X	X		X	
BGS42RR	7/9/1994		X	X	X	X	X		X	
BGS43RR	7/9/1994		X	X	X	X	X		X	
BGS44RR*	7/9/1994		X	X	X	X	X		X	
BGS45RR	7/9/1994		X	X	X	X	X		X	
BGS46RR	7/9/1994		X	X	X	X	X		X	
BGS47RR	7/9/1994		X	X	X	X	X		X	
BGS48RR	7/9/1994		X	X	X	X	X		X	
BGS49RR	7/9/1994		X	X	X	X	X		X	
BGS50RR	7/9/1994		X	X	X	X	X		X	
BGS51RR	7/9/1994		X	X	X	X	X		X	
BGS52RR	7/9/1994		X	X	X	X	X		X	

Table 3-1
Background Study Soil Sample Summary
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	Sample Date	Sample Depth (feet bgs)	TCL VOCs	TCL SVOCs	TAL Total Inorganics	Pesticides	PCBs	TOC	Explosives	Wet Chemistry[1]
WPNSTA Yorktown										
Subsurface Soil										
BGSB04-01*	8/8/1994	1 - 3			X					
BGSB04-07	8/8/1994	13 - 15			X					
BGSB04-09	8/8/1994	17 - 19			X					
BGSB05-01	7/19/1994	1 - 3			X					
BGSB05-02	7/19/1994	3 - 5			X					
BGSB05-10	7/19/1994	19 - 21			X					
BGSB06-05*	7/26/1994	9 - 11			X					
BGSB06-11	7/26/1994	21 - 23			X					
BGSB07-04	8/9/1994	7 - 9			X					
BGSB07-11	8/9/1994	21 - 23			X					
BGSB07-16	8/9/1994	31 - 33			X					
BGSB08-07	8/4/1994	13 - 15			X					
BGGW08A-01*	8/4/1994	1 - 3			X					
CAX										
Surface Soil										
BG1-SS01-00	8/6/2001	0.0 - 0.5		X	X	X	X			
BG1-SS02-00	7/25/2001			X	X	X	X			
BG1-SS03-00	7/25/2001			X	X	X	X			
BG1-SS04-00	8/6/2001			X	X	X	X			
BG1-SS05-00*	8/6/2001			X	X	X	X			
BG1-SS06-00	8/6/2001			X	X	X	X			
BG1-SS07-00	7/25/2001			X	X	X	X			
BG1-SS08-00	7/25/2001			X	X	X	X			
BG1-SS09-00	7/25/2001			X	X	X	X			
BG1-SS10-00	7/25/2001			X	X	X	X			
BG2-SS01-00*	7/27/2001			X	X	X	X			
BG2-SS02-00	7/24/2001			X	X	X	X			
BG2-SS03-00	7/25/2001			X	X	X	X			
BG2-SS04-00	7/26/2001			X	X	X	X			
BG2-SS05-00	7/26/2001			X	X	X	X			
BG2-SS06-00	7/27/2001			X	X	X	X			
BG2-SS07-00	7/24/2001			X	X	X	X			
BG2-SS08-00	7/24/2001			X	X	X	X			
BG2-SS09-00	7/24/2001			X	X	X	X			
BG2-SS10-00	7/25/2001			X	X	X	X			
BG3-SS01-00*	7/23/2001			X	X	X	X			
BG3-SS02-00	7/24/2001			X	X	X	X			
BG3-SS03-00	7/24/2001			X	X	X	X			
BG3-SS04-00	7/23/2001			X	X	X	X			
BG3-SS05-00	7/24/2001			X	X	X	X			
BG3-SS06-00	7/24/2001			X	X	X	X			
BG3-SS07-00	7/24/2001			X	X	X	X			
BG3-SS08-00	7/24/2001			X	X	X	X			
BG3-SS09-00	7/23/2001			X	X	X	X			
BG3-SS10-00	7/23/2001			X	X	X	X			
BG4-SS01-00*	7/26/2001			X	X	X	X			
BG4-SS02-00	7/27/2001			X	X	X	X			
BG4-SS03-00	7/26/2001			X	X	X	X			
BG4-SS04-00	7/26/2001			X	X	X	X			
BG4-SS05-00	7/26/2001			X	X	X	X			
BG4-SS06-00	7/26/2001			X	X	X	X			
BG4-SS07-00	7/27/2001			X	X	X	X			
BG4-SS08-00	7/27/2001			X	X	X	X			
BG4-SS09-00	7/27/2001			X	X	X	X			
BG4-SS10-00	7/26/2001			X	X	X	X			

Table 3-1
Background Study Soil Sample Summary
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	Sample Date	Sample Depth (feet bgs)	TCL VOCs	TCL SVOCs	TAL Total Inorganics	Pesticides	PCBs	TOC	Explosives	Wet Chemistry[1]
CAX										
Subsurface Soil										
BG1-SB01-01	8/6/2001	0.5 - 2.0	X	X	X	X	X	X		
BG1-SB02-01	7/23/2001		X	X	X	X	X	X		
BG1-SB03-01	7/23/2001		X	X	X	X	X	X		
BG1-SB04-01	8/6/2001		X	X	X	X	X	X		
BG1-SB05-01*	8/6/2001		X	X	X	X	X	X		
BG1-SB06-01	8/6/2001		X	X	X	X	X	X		
BG1-SB07-01	7/23/2001		X	X	X	X	X	X		
BG1-SB08-01	7/23/2001		X	X	X	X	X	X		
BG1-SB09-01	7/23/2001		X	X	X	X	X	X		
BG1-SB10-01	7/23/2001		X	X	X	X	X	X		
BG2-SB01-01*	7/27/2001		X	X	X	X	X	X		
BG2-SB02-01	7/23/2001		X	X	X	X	X	X		
BG2-SB03-01	7/23/2001		X	X	X	X	X	X		
BG2-SB04-01	7/26/2001		X	X	X	X	X	X		
BG2-SB05-01	7/26/2001		X	X	X	X	X	X		
BG2-SB06-01	7/27/2001		X	X	X	X	X	X		
BG2-SB07-01	7/23/2001		X	X	X	X	X	X		
BG2-SB08-01	7/24/2001		X	X	X	X	X	X		
BG2-SB09-01	7/24/2001		X	X	X	X	X	X		
BG2-SB10-01	7/25/2001		X	X	X	X	X	X		
BG3-SB01-01*	7/23/2001		X	X	X	X	X	X		
BG3-SB02-01	7/23/2001		X	X	X	X	X	X		
BG3-SB03-01	7/23/2001		X	X	X	X	X	X		
BG3-SB04-01	7/23/2001		X	X	X	X	X	X		
BG3-SB05-01	7/23/2001		X	X	X	X	X	X		
BG3-SB06-01	7/23/2001		X	X	X	X	X	X		
BG3-SB07-01	7/23/2001		X	X	X	X	X	X		
BG3-SB08-01	7/23/2001		X	X	X	X	X	X		
BG3-SB09-01	7/23/2001		X	X	X	X	X	X		
BG3-SB10-01	7/23/2001		X	X	X	X	X	X		
BG4-SB01-01*	7/26/2001		X	X	X	X	X	X		
BG4-SB02-01	7/27/2001		X	X	X	X	X	X		
BG4-SB03-01	7/26/2001		X	X	X	X	X	X		
BG4-SB04-01	7/26/2001		X	X	X	X	X	X		
BG4-SB05-01	7/26/2001		X	X	X	X	X	X		
BG4-SB06-01	7/26/2001		X	X	X	X	X	X		
BG4-SB07-01	7/27/2001		X	X	X	X	X	X		
BG4-SB08-01	7/27/2001		X	X	X	X	X	X		
BG4-SB09-01	7/27/2001		X	X	X	X	X	X		
BG4-SB10-01	7/26/2001		X	X	X	X	X	X		

[1] Wet Chemistry = nitrate, nitrite, total dissolved solids, and total suspended solids.
* Duplicate sample collected at this location.
Red font indicates samples not included in evaluation of data for establishment of background UTLs.
bgs - below ground surface
PCB - polychlorinated biphenyl
SVOC - semi-volatile organic compound
TAL - target analyte list
TCL - target compound list
TOC - total organic carbon
VOC - volatile organic compound

Table 3-2
Groundwater Sampling Summary
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Monitoring Well Station ID	Monitoring Well Alias	Installation Date	Sample ID	Sample Date	Depth to Groundwater (ft btoc)	Total Well Depth (ft bgs)	Screen Interval (ft bgs)	TCL VOCs	TCL SVOCs	TAL Total Inorganics	TAL Dissolved Inorganics	Pesticides	TOC	Explosives
Cornwallis Cave Aquifer														
YBKL-GW01	CXBG1-MW01	8/12/2001	YBKL-GW01-CC-0809	8/19/2009	2.8	10	5 - 10	X	X	X	X	X	X	X
YBKL-GW02	CXBG3-MW01	8/8/2001	YBKL-GW02-CC-0809	8/20/2009	33.5	38	23 - 38	X	X	X	X	X	X	X
YBKG-GW01	BGGW01	8/31/1994	YBKG-GW01-CC-0809	8/14/2009	45.44	53	37.9 - 51.9	X	X	X	X	X	X	X
YBKG-GW03A	BGGW03A	7/23/1994	YBKG-GW03A-CC-0809	8/17/2009	24.97	69	57 - 67	X	X	X	X	X	X	X
YBKG-GW05A	BGGW05A	7/22/1994	YBKG-GW05A-CC-0809	8/18/2009	26.15	41.3	31.5 - 40.5	X	X	X	X	X	X	X
YBKG-GW06A	BGGW06A	8/1/1994	YBKG-GW06A-CC-0809	8/14/2009	35.22	66	50 - 65	X	X	X	X	X	X	X
YBKG-GW07A	BGGW07A	8/20/1994	YBKG-GW07A-CC-0809	8/13/2009	36.6	68.15	58.4 - 67.4	X	X	X	X	X	X	X
YBKG-GW07	BGGW07	8/10/1994	YBKG-GW07-CC-0809	8/13/2009	36.24	43.5	32.9 - 41.9	X	X	X	X	X	X	X
YBKG-GW08A	BGGW08A	8/6/1994	YBKG-GW08A-CC-0809	8/17/2009	19.89	51	35 - 50	X	X	X	X	X	X	X
YBKG-GW10	BGGW10	8/12/2009	YBKG-GW10-CC-0809	8/19/2009	40.02	54	43.5 - 53.5	X	X	X	X	X	X	X
YBKG-GW11-3	58F105 (E3)	1995	YBKG-GW11-3-CC-0809	8/3/2009	20.78	67.5**	62.5 - 67.5	X	X	X	X	X	X	X
YBKG-GW12-3	58F110 (G3)	1995	YBKG-GW12-3-CC-0809	8/11/2009	34.3	46.89**	41.89 - 46.89	X	X	X	X	X	X	X
YBKG-GW13-3	58F115 (H3)	1995	YBKG-GW13-3-CC-0809	8/10/2009	19.8	61**	56 - 61	X	X	X	X	X	X	X
YBKG-GW14-3	58F120 (I3)	1995	YBKG-GW14-3-CC-0809	8/13/2009	17.02	93**	88 - 93	X	X	X	X	X	X	X
YBKG-GW15-3	58G57 (N3)	1995	YBKG-GW15-4-CC-0809	8/12/2009	45.3	62**	57 - 62	X	X	X	X	X	X	X
Yorktown Eastover Aquifer														
YBKG-GW01A	BGGW01A	6/05/1992	YBKG-GW01A-YE-0809	8/14/2009	66.75	82.5	72.5 - 82.5	X	X	X	X	X	X	X
YBKG-GW09A	BGGW09A	8/19/2009	YBKG-GW09A-YE-0809	8/22/2009	23.29	76.45	65.95 - 75.95	X	X	X	X	X	X	X
YBKG-GW10A	BGGW10A	8/18/2009	YBKG-GW10A-YE-0809	8/24/2009	44.21	119.5	109 - 119	X	X	X	X	X	X	X
YBKG-GW11-1	58F103 (E1)	1995	YBKG-GW11-1-YE-0809	8/10/2009	23.94	136**	126 - 136	X	X	X	X	X	X	X
YBKG-GW11-2	58F104 (E2)	1995	YBKG-GW11-2-YE-0809	8/10/2009	23.27	100**	90 - 100	X	X	X	X	X	X	X
YBKG-GW12-1	58F108 (G1)	1995	YBKG-GW12-1-YE-0809	8/11/2009	31.46	121**	110 - 121	X	X	X	X	X	X	X
YBKG-GW12-2	58F109 (G2)	1995	YBKG-GW12-2-YE-0809	8/11/2009	31.32	77.14**	72.14 - 77.14	X	X	X	X	X	X	X
YBKG-GW13-1	58F113 (H1)	1995	YBKG-GW13-1-YE-0809	8/8/2009	24.45	134**	124 - 134	X	X	X	X	X	X	X
YBKG-GW13-2	58F114 (H2)	1995	YBKG-GW13-2-YE-0809	8/8/2009	22.05	101**	91 - 101	X	X	X	X	X	X	X
YBKG-GW14-1	58F118 (I1)	1995	YBKG-GW14-1-YE-0809	8/12/2009	27.92	161**	151 - 161	X	X	X	X	X	X	X
YBKG-GW14-2	58F119 (I2)	1995	YBKG-GW14-2-YE-0809	8/13/2009	28.23	122**	112 - 122	X	X	X	X	X	X	X
YBKG-GW15-1	58G55 (N1)	1995	YBKG-GW15-1-YE-0809	8/12/2009	47.1	128**	118 - 128	X	X	X	X	X	X	X
YBKG-GW15-2	58G56 (N2)	1995	YBKG-GW15-2-YE-0809	8/12/2009	46.54	88**	78 - 88	X	X	X	X	X	X	X

* Duplicate sample collected at this location.
** Depth to bottom measured during sampling. Where reported, screened interval generated from depth to bottom measurement based upon well construction summary provided in USGS report (Brockman et al, 1997)
bgs - below ground surface
btoc - below top of casing
NA - not available
PCB - polychlorinated biphenyl
SVOC - semi-volatile organic compound
TAL - target analyte list
TCL - target compound list
TOC - total organic carbon
VOC - volatile organic compound

Table 3-3
Groundwater Quality Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

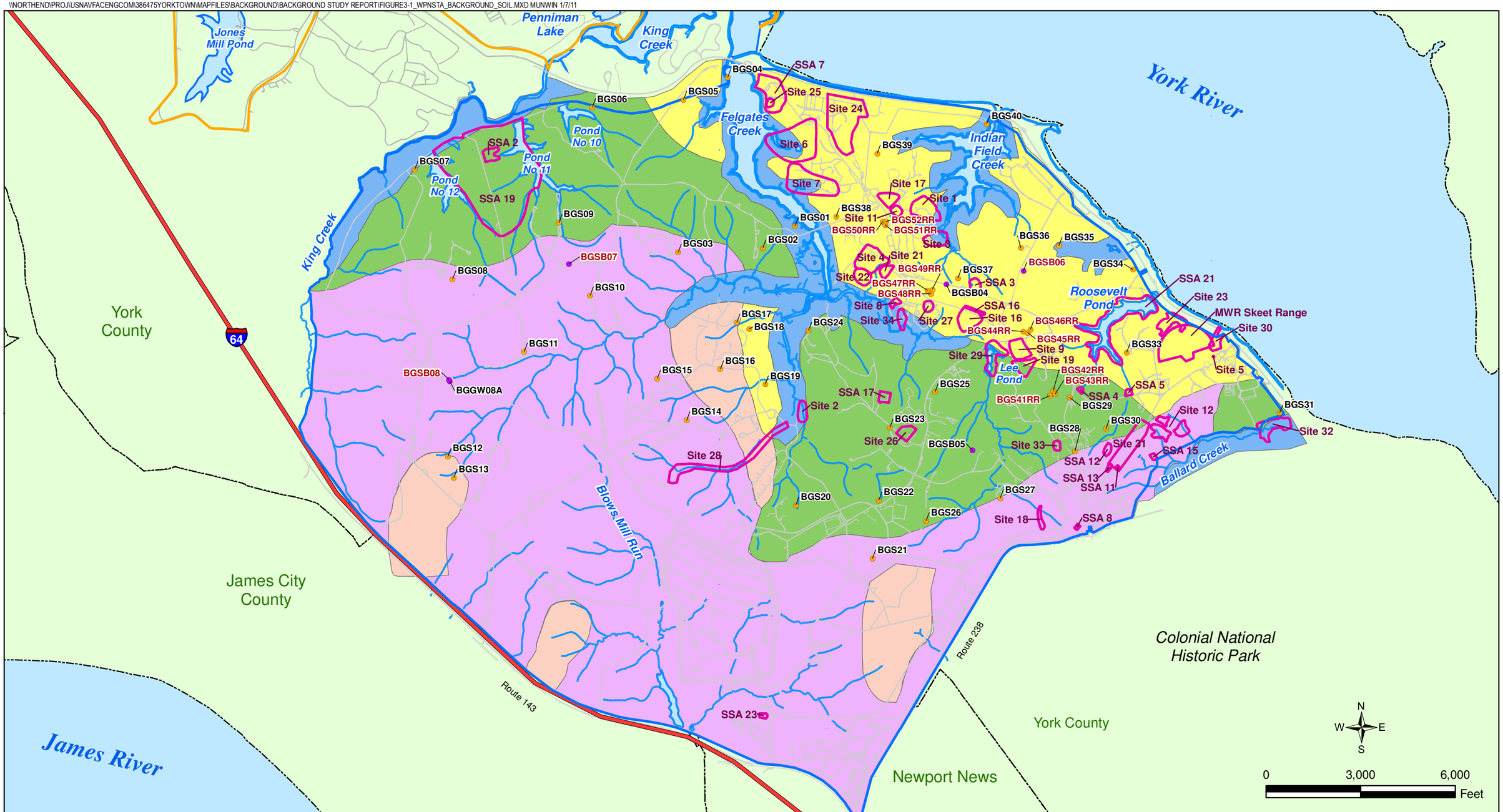
Station ID	YBKG-GW01A-YE-0809	YBKG-GW01-CC-0809	YBKG-GW03A-CC-0809	YBKG-GW05A-CC-0809	YBKG-GW06A-CC-0809	YBKG-GW07A-CC-0809	YBKG-GW07-CC-0809	YBKG-GW08A-CC-0809	YBKG-GW12-3-CC-0809	YBKG-GW13-1-YE-0809
Sample Date	8/14/2009	8/14/2009	8/17/2009	8/18/2009	8/14/2009	8/13/2009	8/13/2009	8/17/2009	8/11/2009	8/8/2009
Dissolved Oxygen (mg/L)	1	2.5	1	4	4	2.5	10.93	1	4	2.5
Depth to Water (ft btoc)	78.1	46.8	26.9	29.4	58	48.91	36.5	24.5	--	39.63
Oxidation Reduction Potential (mV)	-34	173	-153	220	214	-97	262	-96	266	-15
Flow Rate (gallons/minute)	--	0.12	--	--	--	--	--	--	--	0.12
Gallons Purged	6.5	7	6	15	11	4	--	7	--	20
pH	10.76	7.85	7.03	7.37	7.66	7.97	2.06	7.16	7.25	8.03
Salinity (%)	0.04	0.02	0	0	0	0.03	0	0	0	0.11
Specific Conductance (ms/cm)	0.89	0.418	0.455	0.652	0.46	0.67	0.723	0.426	0.715	2.26
Temperature (C)	23.8	21.5	17.08	16.51	16.95	20	17.8	18.6	20.73	20.2
Turbidity (NTU)	34.1	164	0	28.5	>999	67.1	818	927	23.4	15.7

Station ID	YBKG-GW10-CC-0809	YBKG-GW11-1-YE-0809	YBKG-GW11-2-YE-0809	YBKG-GW11-3-CC-0809	YBKG-GW12-1-YE-0809	YBKG-GW12-2-YE-0809	YBKG-GW12-3-CC-0809	YBKG-GW13-1-YE-0809	YBKG-GW13-2-YE-0809	YBKG-GW13-3-CC-0809
Sample Date	8/19/2009	8/10/2009	8/10/2009	8/3/2009	8/11/2009	8/11/2009	8/11/2009	8/8/2009	8/8/2009	8/10/2009
Dissolved Oxygen (mg/L)	5.72	3	3	3	2	1	4	2.5	1.25	1
Depth to Water (ft btoc)	43	23.92	23.5	21.7	--	31.45	--	39.63	31.39	19.9
Oxidation Reduction Potential (mV)	-71	170	160	-103	223	21	266	-15	-75	-133
Flow Rate (gallons/minute)	--	0.13	--	0.11	--	--	--	0.12	0.16	--
Gallons Purged	15	10	9	31	9	17	--	20	15.5	10
pH	7.14	7.04	7.33	7.82	7.52	7.55	7.25	8.03	7.26	7.08
Salinity (%)	0	0	0	0	0	0	0	0.11	0	0
Specific Conductance (ms/cm)	0.626	0.711	0.575	0.544	0.687	0.487	0.715	2.26	0.496	0.589
Temperature (C)	18.91	16.83	16.44	16.67	23.1	19.53	20.73	20.2	17.45	20.65
Turbidity (NTU)	0	30.9	107	5	232	0	23.4	15.7	22.2	156

Station ID	YBKG-GW14-1-YE-0809	YBKG-GW14-2-YE-0809	YBKG-GW14-3-CC-0809	YBKG-GW15-1-YE-0809	YBKG-GW15-2-YE-0809	YBKG-GW15-3-CC-0809	YBKL-GW02-CC-0809
Sample Date	8/12/2009	8/13/2009	8/13/2009	8/12/2009	8/12/2009	8/12/2009	8/20/2009
Dissolved Oxygen (mg/L)	1	1	1	2	1	3	1.5
Depth to Water (ft btoc)	--	40	17	--	45.6	46.5	6.79
Oxidation Reduction Potential (mV)	88	-39	-91	2.1	-24	-15	209
Flow Rate (gallons/minute)	--	--	--	--	--	--	--
Gallons Purged	12	15	--	10	10	--	4.5
pH	7.29	7.67	8.07	7.48	7.62	7.11	6.52
Salinity (%)	0	0.08	0	0	0.06	0	0.1
Specific Conductance (ms/cm)	0.525	1.85	0.51	0.831	0.909	0.633	1.15
Temperature (C)	17.11	20	18.37	16.86	20.4	17.49	18.03
Turbidity (NTU)	64.3	45.2	49.9	66.4	7.7	22.9	80.3

-- data not available
C - degree Celcius
ft btoc - feet below top of casing
mg/L - miligram per liter
ms/cm - milisemen per centimeter
mV - miliVolt
NTU - nephelometric turbidity units
% - percent

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\BACKGROUND STUDY REPORT\FIGURE3-1_WPNSTA_BACKGROUND_SOIL.MXD MUNWIN 1/7/11



Legend

- Background Surface Soil Sample Location
- Background Subsurface Soil Sample Location
- WPNSTA Yorktown Boundary
- CAX Boundary
- Interstate 64
- Roads
- Shoreline and Water Bodies
- City / County Boundaries
- CERCLA Site Boundaries

WPNSTA Yorktown Soil Associations

- Bohicket, Johnson, and Axis (1)
- Dogue, Pamunkey, and Uchee (2)
- Emporia, Kempsville, and Craven-Uchee Complex (3)
- Slagle, Emporia, and Emporia Complex (4)
- Slage, Berthera, and Craven-Uchee (5)

Note:
Red sample IDs indicate samples not included in background data set for establishment of UTLs.

Figure 3-1
WPNSTA Yorktown Background Soil Sample Locations
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\BACKGROUND STUDY REPORT\FIGURE3-2_CAX_BACKGROUND_soil.MXD MUNWIN 1/7/11

Legend

- Background Surface/Subsurface Soil Sample Location
- WPNSTA Yorktown Boundary
- CAX Boundary
- Interstate 64
- Roads
- Shoreline and Water Bodies
- City / County Boundaries
- CERCLA Site Boundaries

CAX Soil Associations

- Bohicket, Johnson, and Axis (1)
- Dogue, Pamunkey, and Uchee (2)
- Slagle, Emporia, and Craven-Uchee Complex (3)
- Emporia, Emporia Complex, Kempsville, and Craven-Uchee Complex (4)

N W E S

0 2,000 4,000 Feet

Figure 3-2
CAX Background Soil Sample Locations
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\BACKGROUND STUDY REPORT\FIGURE3-3_WPNSTA_BACKGROUND_gw.MXD MUNWIN 1/7/11

Legend

- Background Cornwallis Cave Aquifer Groundwater Sample Location
- Background Yorktown-Eastover Aquifer Groundwater Sample Location
- WPNSTA Yorktown Boundary
- CAX Boundary
- Interstate 64
- Roads
- Shoreline and Water Bodies
- City / County Boundaries
- CERCLA Site Boundaries

Note:
Yellow highlight indicates newly installed monitoring wells.

N W E S

0 4,000 8,000 Feet

Figure 3-3
WPNSTA Yorktown and CAX Background Groundwater Sample Locations
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

CH2MHILL

SECTION 4

Background Data Evaluation

4.1 Analytical Results

Information regarding the various constituents detected in soil and groundwater is provided below. **Tables 4-1 through 4-4** summarize the detected concentrations in surface and subsurface soil samples collected as part of the previous CAX and WPNSTA Yorktown background investigations and **Tables 4-5 and 4-6** present summary statistics for detected constituents in surface and subsurface soil, respectively. **Tables 4-7 and 4-8** summarize the detected concentrations in groundwater collected as part of the 2009 background investigation and **Tables 4-9 and 4-10** present summary statistics for detected constituents in Cornwallis Cave and Yorktown-Eastover aquifer groundwater, respectively. Validated raw analytical data are provided in **Appendix A**.

4.1.1 Surface Soil

Surface soil samples were collected from the various soil associations and analyzed for inorganics at CAX and WPNSTA Yorktown and SVOCs, pesticides, and PCBs at CAX only. PCBs were not detected in surface soil. Seventeen pesticides were detected in one or more surface soil samples. Of the pesticides detected, alpha-chlordane was detected most frequently in 15 of 40 samples at concentrations ranging from 0.65J micrograms per kilogram (µg/kg) (BG3-SS06-00) to 4.7J µg/kg (BG1-SS03-00). Thirteen SVOCs, including two phthalates and 11 polycyclic aromatic hydrocarbons (PAHs), were detected in one or more surface soil samples; however, with the exception of sample location BG1-SS03-00 where 10 of the 13 SVOCs were detected, SVOCs were generally not detected in surface soil. Of the SVOCs detected, bis(2-ethylhexyl)phthalate was detected most frequently in 21 of 40 samples, at concentrations ranging from 38J µg/kg (BG1-SS08-00) to 5,000 µg/kg (BG2-SS10-00).

Twenty-two inorganics were detected in one or more surface soil samples. Cyanide and thallium were not detected. Antimony, cadmium, and silver were detected in only three of 79 samples and mercury was detected in only seven of 79 samples collected. Six inorganics (aluminum, iron, lead, manganese, vanadium, and zinc) were detected in all 79 samples collected. The remaining inorganics were detected in 27 to 78 of 79 samples collected. With the exception of isolated elevated detections of arsenic (63.9 milligrams per kilogram [mg/kg]), calcium (33,500 mg/kg), and lead (136 mg/kg), concentrations of detected inorganics were generally similar across each of the soil associations.

4.1.2 Subsurface Soil

Subsurface soil samples were collected from the various soil associations and analyzed for inorganics at CAX and WPNSTA Yorktown and VOCs, SVOCs, pesticides, and polychlorinated biphenyls (PCBs) at CAX only. PCBs were not detected in subsurface soil. Two pesticides, 4'4- dichlorodiphenyldichloroethane (DDD) and 4'4-

dichlorodiphenyldichloroethylene (DDE), and three SVOCs, benzaldehyde, phenol, and bis(2-ethylhexyl)phthalate, were detected in one or more subsurface soil samples. Similar to surface soil, bis(2-ethylhexyl)phthalate was the most-frequently detected SVOC (16 of 40 samples) at concentrations ranging from 41J µg/kg (BG3-SS08-00) to 670 µg/kg (BG2-SS01-00). Eight VOCs were detected in subsurface soil. Of the VOCs, acetone was detected most frequently in five of 40 samples at concentrations ranging from 4J µg/kg (BG2-SB06-01) to 42 µg/kg (BG1-SB03-01).

Twenty of 24 inorganics/cyanide were detected in one or more subsurface soil samples collected. Antimony, cadmium, silver, and thallium were not detected. Cyanide was detected in one of 43 samples; beryllium and mercury were detected in two of 43 samples; and selenium and was detected in six of 43 samples collected. Eight inorganics (aluminum, barium, calcium, iron, lead, magnesium, manganese, and vanadium) were detected in all of the 43 samples collected. The remaining inorganics were detected in 10 to 42 of 43 samples collected. With the exception of isolated elevated detections of arsenic (18.6 mg/kg) and calcium (162,000 mg/kg), concentrations of detected constituents were generally similar across each of the soil associations.

4.1.3 Cornwallis Cave Aquifer Groundwater

Groundwater samples were collected from 15 monitoring wells installed within the Cornwallis Cave aquifer and analyzed for VOCs, SVOCs, pesticides, PCBs, explosives, and total and dissolved inorganics. Five VOCs (1,1-dichloroethane [DCA], carbon disulfide, chloromethane, cis-1,2-dichlorothene [DCE], and methyl-tert-butyl ether [MTBE]) were detected in one or more groundwater samples. With the exception of carbon disulfide, all VOCs were detected in only one sample. Carbon disulfide was detected in three of 15 samples at concentrations ranging from 0.23J micrograms per liter (µg/L) (YBKG-GW08A-CC) to 0.67J µg/L (YBKG-GW15-3-CC). Two SVOCs, bis(2-ethylhexyl)phthalate and nitrobenzene, and two pesticides, alpha-chlordane and heptachlor, were detected. Each SVOC was detected in two of 15 monitoring wells samples at concentrations ranging from 1.1J µg/L (YBKG-GW07A-CC) to 1.2J µg/L (YBKG-GW01-CC) for bis(2-ethylhexyl)-phthalate and 2.4J µg/L (YBKG-GW13-3-CC) to 9.2J µg/L (YBKG-GW11-3-CC) for nitrobenzene. Each pesticide was detected in one monitoring well at concentrations below 1 µg/L. No PCBs were detected in Cornwallis Cave aquifer groundwater.

Nineteen of 24 total and 16 dissolved inorganics were detected in one or more samples collected from the Cornwallis Cave aquifer. Total and dissolved cyanide, mercury, selenium, silver, and thallium and dissolved beryllium, copper, and zinc were not detected. Total and dissolved arsenic, barium, calcium, magnesium, potassium, and sodium and total iron were detected in all 15 samples collected. Total antimony, beryllium, cobalt, copper, lead, nickel, and zinc were detected in less than half of the samples collected. The remaining inorganics were detected in nine to 12 of the 15 samples. Detected concentrations of total and dissolved inorganics were generally similar in groundwater collected across both facilities.

4.1.4 Yorktown-Eastover Aquifer Groundwater

Groundwater samples were collected from 13 monitoring wells installed within the Yorktown-Eastover aquifer and analyzed for VOCs, SVOCs, pesticides, PCBs, explosives,

and total and dissolved inorganics. Four VOCs (carbon disulfide, chloroform, toluene, and trichloroethene [TCE]) were detected in one or more groundwater samples. Of the VOCs detected, carbon disulfide and chloroform were detected most frequently in 3 of 13 samples. Concentrations of carbon disulfide ranged from 0.23J µg/L (YBKG-GW15-1-YE) to 0.46J µg/L (YBKG-GW01A-YE) and concentrations of chloroform ranged from 0.23J µg/L (YBKG-GW09A-YE) to 3.8 µg/L (YBKG-GW01A-YE). Two SVOCs, caprolactam and phenol, were detected in one monitoring well (YBKG-GW10A-YE). No pesticides, PCBs, or explosives were detected in Yorktown-Eastover aquifer groundwater.

Nineteen of 24 total and 16 of 24 dissolved inorganics/cyanide were detected in one or more samples collected from the Yorktown-Eastover aquifer. Total and dissolved antimony, silver, and thallium; total cyanide and selenium; and dissolved beryllium, cobalt, nickel, and zinc were not detected. Total and dissolved arsenic, barium, calcium, potassium, and sodium and total iron and magnesium were detected in all 13 samples collected. Total aluminum and chromium and dissolved iron, magnesium, and manganese were detected in over half of the samples collected. The remaining inorganics were detected in less than half of the samples collected. With the exception of elevated detected concentrations of total inorganics at sample location YBKG-GW01A, concentrations of total and dissolved inorganics were generally similar in groundwater collected across the facilities.

4.2 Background Data Evaluation

Detections in site media can be representative of naturally occurring constituents (inorganics that represent underlying geochemical conditions that have not been influenced by human activity) or anthropogenic compounds (natural and man-made substances present in the environment as a result of human activities, but not related to site activities).

VOCs are not considered natural or anthropogenic compounds. Although VOCs were detected in groundwater during the Background Study, the frequency of detection and concentrations were generally low. Of the VOCs detected, carbon disulfide and chloroform were detected most frequently. Chloroform is a common laboratory contaminant and is very unlikely to be reflective of potential site impacts in these areas. Carbon disulfide is generated naturally by microbes under reducing conditions in the vicinity of wetlands.

SVOCs were detected in all site media, most frequently in surface soil. The most common type of SVOC detected was PAHs. PAHs in site media can be reflective of byproducts of combustion. Forest fires are natural sources of PAHs; however, there are significant anthropogenic sources, such as the burning of fossil fuels (i.e., automobile, power plant, and industrial emissions). Of the SVOCs detected in site media, the most-frequently detected was bis(2-ethylhexyl)phthalate, a common laboratory contaminant.

Pesticides were detected in all site media except Yorktown-Eastover aquifer groundwater, most frequently in surface soil. Although pesticides are not naturally occurring in the environment, they were historically used for widespread application as pest control agents on military installations, and are considered to be anthropogenic compounds not generally associated with a CERCLA-related release. PCBs were not detected in site media.

The most commonly detected inorganic constituents in soil were aluminum, barium, calcium, iron, lead, magnesium, manganese, vanadium, and zinc. The most commonly-

detected inorganic constituents in groundwater were arsenic, barium, calcium, iron, magnesium, potassium, and sodium. Calcium, magnesium, potassium, and sodium are naturally-occurring, essential human nutrients, and are not typically components of CERCLA-related releases. Barium is a naturally occurring component of minerals found in igneous rocks and sandstone which enter the environment through the weathering of rocks and minerals. Silica dioxide (quartz) and aluminum oxide generally dominate the chemical composition of granite, the predominant rock of the Appalachian Mountains. In addition, iron and manganese oxides are also common. As the granite rocks have been eroded and sediment has been transported downstream, these minerals were deposited to form the thick sequence of soils and sediments comprising the Coastal Plain of eastern Virginia. Lead and vanadium are naturally occurring elements distributed in the earth's crust. Although lead is naturally occurring, detected concentrations in soil may also be related to anthropogenic causes such as historic lead paint use and auto emissions from the combustion of leaded gasoline. Arsenic in groundwater may result from the release of naturally-occurring arsenic in soils to groundwater as a result of various geochemical processes. When reducing conditions are present in the aquifer, the solubility of ferric iron oxyhydroxide minerals in soil is enhanced. As the ferric minerals in soil dissolve, arsenic is released to the groundwater and ferric iron is converted to ferrous iron.

4.3 Statistical Evaluation

The statistical evaluation was conducted to establish background UTLs for soil and groundwater, and is provided in **Appendix E** and summarized below.

As discussed in Section 3, existing soil background data from WPNSTA Yorktown (Baker, 1995) and CAX (Baker, 2003) was combined to establish the background data set for use in calculating background UTLs for surface and subsurface soil (**Table 3-1**). Of the background soil samples collected, 75 surface soil and 43 subsurface soil samples were retained for use in calculating background UTLs. Although Analysis of Variance (ANOVA) and box and whisker plots indicated that significant differences existed among the various soil associations, the Navy, USEPA, and VDEQ agreed to combine all soil associations when calculating surface and subsurface soil background UTLs. Fifteen groundwater samples were collected from the Cornwallis Cave aquifer and 13 groundwater samples were collected from the Yorktown-Eastover aquifer as part of this background study (**Table 3-2**). Because the two aquifers are connected in some areas as a result of missing or eroded portions of the separating Yorktown Confining unit, the aquifer data sets were combined for calculation of common UTL values, with the exception of the essential human nutrients (calcium, magnesium, potassium, and sodium) and iron, for which results were shown to be significantly different between the aquifers (**Appendix F**). Although soil and groundwater samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and/or inorganics, since a high degree of variability may exist with the number of organic constituent detections, the Navy, USEPA, and VDEQ agreed to not calculate background UTL values for organics.

The size of the sample set used for each inorganic constituent detected in soil or groundwater is the same. Twenty-three of the 24 inorganics/cyanide analyzed in surface and subsurface soil were detected. Twenty of the 24 total inorganics/cyanide and 19 of the 24 dissolved inorganics/cyanide analyzed in groundwater were detected. Some results, due

to their elevated nature, may seem inappropriate for a background data set since they may appear to represent a concentration from another parent population. Although samples are believed to be collected from appropriate background locations, as a conservative step in the calculation of background statistics, an evaluation of mathematical outliers was conducted on those constituents with a 10 percent or greater detection rate. Soil and groundwater outliers were evaluated with Dixon's or Rosner's outlier tests. Numerous detections of different inorganic analytes were determined to be sufficiently elevated relative to the other concentrations of the same analytes and consequently removed from the background data set used for calculated background UTLs.

Background threshold values for soil and groundwater were calculated as 95 percent/ 95 percent background UTLs; that is, upper bounds (with 95 percent confidence) of the background 95th percentiles. The background UTLs were calculated following the algorithms and recommendations from ProUCL (USEPA, 2009). Prior to calculating the background UTL values, the distribution (normal, lognormal, or gamma) of the data was determined. When appropriate, the normal UTL was calculated; however, for data sets that did not appear normally distributed, nonparametric UTLs were calculated. When fewer than four detections were available for an analyte, no UTL value was calculated. A summary of surface soil, subsurface soil, and Cornwallis Cave/Yorktown-Eastover aquifer central tendency statistics and background UTLs is provided in **Table 4-11**.

4.4 Use of Background Data

The statistical analysis of background data will be used to better identify and assess site-related contamination and for use in the risk management process. Within the CERCLA process, sites are initially addressed in the Site Screening Process (SSP) or Site Investigation (SI) step to determine if a site release has occurred and to qualitatively evaluate site risks. Where a site release is indicated or known to have occurred and the risk present at the site warrants further investigation, sites are addressed in the Remedial Investigation (RI) process and risks are quantitatively evaluated. The approach for using background data focuses on application within these CERCLA processes and is discussed below.

4.4.1 Site Screening or Site Investigation Process

Evaluation of site data in the SSP/SI consists of determining if a site release has occurred and assessing if site media pose a potential human health or environmental risk through a qualitative risk screening process.

Comparison to Background

For site data collected as part of an SSP/SI, background data can be used to determine if a site release has occurred. First, site results will be compared to background UTLs to determine whether they appear to be part of a similar parent population as the background data. If no detected site concentrations exceed the UTL (or any exceedances seem minor based on the constituent and magnitude of the exceedance), then it can be concluded that a site release has not occurred and no further action is warranted. If UTL exceedances are noted, the central tendency comparison will be used to determine with statistical confidence whether the typical (mean or median) site concentration exceeds the typical background concentration. This comparison uses the pooled site and background concentrations rather

than focusing primarily on the most-elevated concentrations, as in the case of the individual comparison. Additionally, population to population comparisons, including those background concentrations identified as outliers, will be conducted. When the central tendency and/or population to population evaluations do not indicate an exceedance of background concentrations, then it can be concluded that a site release has not occurred and no further action is warranted. For those cases where exceedances of background conditions are noted, consideration is then given to the location of the exceeding concentration(s). These specific locations are identified in order to assess whether exceedance locations cluster in an area or are interspersed throughout the portion of the site being evaluated. Spatial interpretation of background UTL exceedances requires judgmental decisions, but is an indication of whether elevated levels suggest a random process as opposed to a specific release. Professional judgment will incorporate site history and operations, current site conditions, and conceptual site models for exposure pathways and receptors. The magnitude of the exceedances and the nature of the constituent will both play into this professional decision.

Qualitative Risk Screening

To assess if constituents exceeding background pose a potential risk, a qualitative risk screening can be conducted. Qualitative risk screening evaluation through comparison of site data to risk screening criteria (Federal and State) will identify constituents of potential concern (COPCs). Additionally, the UCL of the mean of the site data can also be compared to a risk-based value to assess potential site risks.

For human health, this qualitative risk evaluation will include a comparison using the most current USEPA Regional Screening Levels (RSLs) to detected site concentrations. The non-carcinogenic RSLs are based on hazard quotients (HQs) of 1, which does not account for exposure of multiple constituents on a common target organ. Therefore, RSLs based on non-carcinogenic effects are adjusted to account for a HQ of 0.1 by dividing the reported RSLs by ten. Soil data will be qualitatively screened using the residential RSL (at a HQ of 0.1) and groundwater data will be qualitatively screened using the maximum contaminant level (MCL) and the tap water RSL (at a HQ of 0.1).

Ecological evaluation as part of an SSP/SI begins with a site conceptual model to assess potential receptors and pathways for contaminant migration for site media. If the site conceptual model suggests the potential for ecological risk, available site data are qualitatively compared to Biological Technical Assistance Group (BTAG) screening values. Based on this qualitative review, the Navy in partnership with the USEPA and VDEQ will use professional judgment for risk management in an SSP/SI.

Following comparison of site data to background and risk screening of constituents exceeding background, risk management decisions can then be made by the Navy in partnership with the USEPA and VDEQ, which includes assessing site conditions for determination of no further action, limited “hot spot” remedial measures, or whether a remedial investigation is warranted for the site.

4.4.2 Remedial Investigations

Within the CERCLA RI Process, use of background data for comparison to site data will be addressed in the uncertainty section of the respective human health and ecological risk

assessments. Until further Navy guidance is released regarding the use of background data in RI quantitative risk assessments, these data will only be used at the end of the quantitative risk assessment as part of the uncertainty section of the risk assessments.

For data collected as part of an RI, a quantitative risk assessment is conducted in accordance with Navy and USEPA guidance. For parameters that are identified risk drivers, background data are used for risk management at the conclusion of the quantitative risk assessment process. In this approach, parameters that may not be related to a site release are carried through the risk assessment process. Once site risks have been quantified, uncertainties in the risk assessment process are addressed. The comparison of background concentrations to site-specific data within environmental media is one of several factors that can contribute to the uncertainty of the risk assessment.

As discussed in the previous section, the background data will be evaluated with two potential comparisons in mind. These include individual comparison of site data to UTL values, a central tendency evaluation, and population to population comparisons. As a first step, site concentrations will be compared to corresponding background UTL values. If no detected site concentrations exceed the UTL (or any exceedances seem minor based on the constituent and magnitude of the exceedance), then it can be concluded that a site release has not occurred and no further action is warranted. If UTL exceedances are noted, the central tendency comparison will be used to determine with statistical confidence whether the typical (mean or median) site concentration exceeds the typical background concentration. This comparison uses the pooled site and background concentrations rather than focusing primarily on the most-elevated concentrations, as in the case of the individual comparison. Additionally, population to population comparisons, including those background concentrations identified as outliers, will be conducted. When the central tendency and/or population to population evaluations do not indicate an exceedance of background concentrations, then it can be concluded that a site release has not occurred and no further action is warranted.

Table 4-1
CAX Surface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	CAX Soil Association 1										CAX Soil Association 2									
Sample ID	BG1-SS01-00	BG1-SS02-00	BG1-SS03-00	BG1-SS04-00	BG1-SS05-00*	BG1-SS06-00	BG1-SS07-00	BG1-SS08-00	BG1-SS09-00	BG1-SS10-00	BG2-SS01-00*	BG2-SS02-00	BG2-SS03-00	BG2-SS04-00	BG2-SS05-00	BG2-SS06-00	BG2-SS07-00	BG2-SS08-00	BG2-SS09-00	BG2-SS10-00
Sample Date	08-06-2001	07-25-2001	07-25-2001	08-06-2001	08-06-2001	08-06-2001	07-25-2001	07-25-2001	07-25-2001	07-25-2001	07-27-2001	07-24-2001	07-25-2001	07-26-2001	07-26-2001	07-27-2001	07-24-2001	07-24-2001	07-24-2001	07-25-2001
Sample Depth (inches bgs)	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6
Chemical Name																				
Semivolatile Organic Compounds (ug/kg)																				
Acetophenone	410 U	350 U	1600 U	570 U	610 U	95 J	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	41 J	360 U	360 U	350 U	1100 U
Benzaldehyde	410 U	350 U	1600 U	100 J	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Benzo(a)anthracene	410 U	350 U	220 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Benzo(a)pyrene	410 U	350 U	340 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Benzo(b)fluoranthene	410 U	350 U	650 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Benzo(g,h,i)perylene	410 U	350 U	350 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Benzo(k)fluoranthene	410 U	350 U	260 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Chrysene	410 U	350 U	480 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Di-n-octylphthalate	410 U	350 U	1600 U	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	66 J	360 U	360 U	350 U	1100 U
Fluoranthene	410 U	350 U	270 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Indeno(1,2,3-cd)pyrene	410 U	350 U	340 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
Pyrene	410 U	350 U	330 J	570 U	610 U	920 U	340 U	350 U	1300 U	450 U	380 U	350 U	350 U	360 U	380 U	400 U	360 U	360 U	350 U	1100 U
bis(2-Ethylhexyl)phthalate	410 U	59 J	280 J	68 B	610 U	120 B	120 J	38 J	380 J	66 J	140 B	240 J	46 J	250 B	2000	2100	140 J	670 B	200 B	5000
Pesticides (ug/kg)																				
4,4'-DDD	4.1 U	3.5 U	11 J	5.3 J	6.1 U	12	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
4,4'-DDE	4.1 U	3.5 U	23	5.7 U	6.1 U	4.9 J	3.4 U	3.5 U	4.6 J	4.5 U	3.8 U	1.1 J	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
4,4'-DDT	4.1 U	3.5 U	10 J	5.7 U	6.1 U	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
Dieldrin	3.7 J	3.5 U	16 U	5.7 U	6.1 U	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
Endosulfan I	2.1 U	1.8 U	8.1 U	1.1 J	2.1 J	2.1 J	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.8 U	1.8 U	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan II	4.1 U	3.5 U	16 U	5.7 U	2.1 J	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
Endosulfan sulfate	4.1 U	3.5 U	16 U	2.1 J	2.9 J	3.7 J	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
Endrin	3.5 J	3.5 U	16 U	5.7 U	6.1 U	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
Endrin aldehyde	4.1 U	3.5 U	16 U	1.8 J	12	8.9 J	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
Endrin ketone	4.1 U	3.5 U	16 U	5.7 U	4.5 J	3.4 J	3.4 U	3.5 U	13 U	4.5 U	3.8 U	3.5 U	3.6 U	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U
Heptachlor epoxide	2.1 U	1.8 U	8.1 U	2.9 U	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.8 U	1.8 U	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U
alpha-BHC	1.6 J	1.8 U	8.1 U	1.1 J	.72 J	1.2 J	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.8 U	1.8 U	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U
alpha-Chlordane	2.1 U	1.8 U	4.7 J	1.1 B	3.4 B	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.1 J	1.8 U	1.8 U	2 U	2.1 U	1.1 J	.83 B	.59 B	2.5
beta-BHC	14 J	1.8 U	8.1 U	2.9 U	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.8 U	1.8 U	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U
delta-BHC	2.1 U	1.8 U	8.1 U	5 P	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.8 U	1.8 U	1.8 U	2 U	2.1 U	0.65 J	1.8 U	1.8 U	1.8 U
gamma-BHC (Lindane)	3.3	1.8 U	8.1 U	1.4 J	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.8 U	1.8 U	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U
gamma-Chlordane	2.1 U	1.8 U	7.0 J	2.9 U	.92 J	1.9 J	1.8 U	1.8 U	6.5 U	2.3 U	2 U	1.8 U	1.8 U	1.8 U	2 U	2.1 U	0.55 J	1.9 U	1.8 U	1.8 U
PCBs (ug/kg)																				
No Detections																				
Inorganics (mg/kg)																				
Aluminum	3700	265	16500	5640	3120	3570	235	476	12400	2320	2330	2930	3640	2370	2830	4420	3820	4570	2660	4290
Antimony	.42 UL	.36 UL	1.4 UL	.58 UL	1 L	.93 UL	0.33 UL	.36 UL	1.2 UL	.54 UL	.41 B	.35 UL	.37 UL	.35 U	.37 U	.4 U	.36 UL	.36 U	.36 U	.37 U
Arsenic	2.6 B	.25 U	9.9	4.7	3.1 B	8.3	0.23 U	.25 U	6 J	4.2	.56 B	.63 J	.8 J	.61 B	1.2 B	4.1	1.5 J	1.6 J	.66 B	1.2 B
Barium	21 J	.75 J	31.6 J	9.1 J	13.4 J	25.8 J	5.1 J	2.2 J	21.5 J	7.1 J	28.3 J	24.6 J	28.5 J	12.2 J	25 J	27.4 J	26.9 J	29.4 J	22.3 J	32.7 B
Beryllium	.38 J	.085 U	1.1 J	.39 J	.41 J	.34 J	0.082 B	.11 B	.72 J	.22 B	.42 B	.38 B	.4 B	.13 B	.31 B	.42 B	.42 B	.52 B	.37 B	.36 B
Calcium	867 J	1380	2300 J	2950	4220	33500	149 J	1640	2280 J	470 J	830 J	598 J	321 J	112 J	1210	3320	373 J	345 J	536 J	319 B
Chromium	8	1.8 J	43.2	13.5	9.4	9.9	7.7	3.7	26.8	8.9	2.9	5.5	3.6	2.9	4.5	12.4	6.1	5.5	3.4	3.8
Cobalt	1.6 J	.15 U	3.8 J	1.4 J	1.6 J	2.2 J	0.13 U	.2 J	2.4 J	.35 J	1.3 J	1.2 J	2.3 J	1 J	5.3 J	1.8 J	3.1 J	2.7 J	1.8 B	2.3 B
Copper	1.7 J	.41 J	22.1	4 J	2.7 J	8.8 J	0.43 J	1.5 J	9.8 J	4.2 J	1.6 B	1.4 J	1.5 J	.83 B	2 B	4 J	1.5 J	.99 B	1.2 B	1.5 B
Iron	12300	1520	18300	13500	8680	17400	1470	3220	16500	6410	2660	5320	3540	2650	4420	12600	6740	5480	3420	3770
Lead	6.2 J	1.1	136	12.2 J	8.9 J	15.6 J	14.4	3.2	34.7	7.5	9.1	8.2	10.1	8.1	6.4	11.0	8.9	6.8	6.6	9.8
Magnesium	396 J	160 J	6770	2050	1200 J	1160 J	92.1 B	195 J	5290	1130 J	248 J	463 J	262 J	157 J	412 J	1020 J	510 J	401 J	271 BE	292 BE
Manganese	26 J	6.9	108	47.6 J	46.3 J	90.3 J	10.3	15.8	62.7	15.5	257	81.4	134	68	197	100	169	112	62.7	101
Mercury	.052 J	.04 U	.24 J	.14 J	.11 J	.15 J	0.046 U	.05 U	.16 U	.06 U	.041 U	.048 U	.042 U	.052 U	.053 U	.058 U	.054 U	.048 U	.05 U	.05 U
Nickel	2.4 J	.37 J	14.2 J	4.1 J	3.5 J	5.6 J	0.40 J	1.1 J	8.7 J	2.1 J	2 B	2.4 J	2.9 J	1.4 J	3.9 J	3.8 J	3.4 J	2.9 J	2 J	2.8 J
Potassium	359 J	170 B	4560	1420 J	1020 J	911 J	97.6 B	220 B	3510	754 J	167 B	360 J	188 B	93.5 B	245 J	1210 L	356 J	231 B	200 B	161 B
Selenium	.7 UL	.59 UL	2.2 UL	1.5 J	1.2 J	2.7 J	0.54 UL	.59 UL	1.9 UL	.89 UL	.66 UL	.69 J	.61 UL	.58 UL	.61 UL	.65 UL	.59 UL	.59 UL	.59 UL	.6 UL
Silver	.12 U	.11 U	.4 U	.17 U	.18 U	.27 U	0.096 U	.11 U	.34 U	.16 U	.16 J	.1 U	.11 U	.1 U	.11 U	.12 U	.10 U	.10 U	.1 U	.11 U
Sodium	437 B	568 B	21300	2610	1960	2970	187 B	408 B	20500	4140	356 B	154 B	171 B	305 B	264 B	321 B	194 B	293 B	308 B	250 B
Vanadium	13.5	2.4 J	50.3	20.5	11.7 J	19.5 J	4.3 J	3.2 J	41.2	21.2	5.7 J	8 J	7.8 J	6 J	7.5 J	15.2	11.6	9.4 J	6.1 J	7.6 J
Zinc	7.9 L	4.2 J	113	18.1	13.3 L	30.0	16.1	41.2	47.8	12.2	14.5 J	12.2	9.9	4.9 J	10.8 J	17.9 J	11.3	8.2 J	5.4 J	8.5 J

Notes:

Shading indicates detections

* Duplicate sample collected. Highest detected value reported.

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

R - Unreliable Result

U - The material was analyzed for, but not detected

UL - Analyte not detected, quantitation limit is probably higher

mg/kg - Milograms per kilogram

µg/kg - Micrograms per kilogram

Table 4-1
CAX Surface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	CAX Soil Association 3										CAX Soil Association 4									
Sample ID	BG3-SS01-00*	BG3-SS02-00	BG3-SS03-00	BG3-SS04-00	BG3-SS05-00	BG3-SS06-00	BG3-SS07-00	BG3-SS08-00	BG3-SS09-00	BG3-SS10-00	BG4-SS01-00*	BG4-SS02-00	BG4-SS03-00	BG4-SS04-00	BG4-SS05-00	BG4-SS06-00	BG4-SS07-00	BG4-SS08-00	BG4-SS09-00	BG4-SS10-00
Sample Date	07-23-2001	07-24-2001	07-24-2001	07-23-2001	07-24-2001	07-24-2001	07-24-2001	07-24-2001	07-23-2001	07-23-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Sample Depth (inches bgs)	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6
Chemical Name																				
Semivolatile Organic Compounds (ug/kg)																				
Acetophenone	370 U	390 U	370 U	370 U	410 U	360 U	370 U	110 J	370 U	360 U	400 U	360 U	360 U	350 U	61 L	350 U	360 U	360 U	380 U	390 U
Benzaldehyde	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(a)anthracene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(a)pyrene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(b)fluoranthene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(g,h,i)perylene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(k)fluoranthene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Chrysene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Di-n-octylphthalate	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Fluoranthene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Indeno(1,2,3-cd)pyrene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Pyrene	370 U	390 U	370 U	370 U	410 U	360 U	370 U	360 U	370 U	360 U	400 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
bis(2-Ethylhexyl)phthalate	190 J	600	450	290 J	340 J	140 J	370 U	130 J	370 U	360 U	200 J	240 B	230 B	54 B	340 B	200 B	750 B	2300	71 B	95 B
Pesticides (ug/kg)																				
4,4'-DDD	3.6 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U	3.6 U	3.7 U	3.6 U	1.3 J	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
4,4'-DDE	1.3 J	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U	3.6 U	3.7 U	3.6 U	2.5 J	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
4,4'-DDT	3.6 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U	3.6 U	3.7 U	3.6 U	4 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Dieldrin	3.3 J	4.4 J	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U	3.6 U	3.7 U	3.6 U	4 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	2.6 J	2.4 J
Endosulfan I	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
Endosulfan II	3.6 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U	3.6 U	3.7 U	3.6 U	4 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Endosulfan sulfate	3.6 U	3.9 U	3.7 U	2.3 J	2.4 J	3.6 U	3.7 U	3.6 U	3.7 U	3.6 U	4 U	3.6 U	3.6 U	3.5 U	3.4 U	1.6 J	3.6 U	3.6 U	3.8 U	3.9 U
Endrin	3.6 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U	3.6 U	3.7 U	3.6 U	4 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Endrin aldehyde	3.6 U	3.9 U	3.7 U	3.7 U	2.7 J	3.6 U	3.7 U	1.2 J	3.7 U	3.6 U	4 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Endrin ketone	1.8 J	3.9 U	3.7 U	3.7 U	2.1 J	3.6 U	3.7 U	1.2 J	3.7 U	3.6 U	4 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Heptachlor epoxide	1.9 U	2 U	1.9 U	1.9 U	1.8 J	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
alpha-BHC	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
alpha-Chlordane	1 J	2 U	0.94 J	0.89 J	1.4 J	0.65 J	1.9 U	1.7 J	0.83 J	1.8 U	1.7 J	1.8 U	1.3 B	1.5 J	1.8 U	2.2	.65 B	.84 B	1.9 U	2.3 J
beta-BHC	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U	.94 J	1.9 U	1.8 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
delta-BHC	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
gamma-BHC (Lindane)	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
gamma-Chlordane	1.9 U	2 U	1.9 U	1.9 U	0.65 J	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	65 J	2 U
PCBs (ug/kg)																				
No Detections																				
Inorganics (mg/kg)																				
Aluminum	5160	4460	3850	3110	5230	3880	3220	4040	4110	6160	5130	2560	3330	2410	1760	3930	2150	3090	3300	5100
Antimony	0.38 UL	0.40 UL	0.36 UL	0.37 UL	0.38 UL	0.35 UL	0.37 UL	.36 UL	.36 UL	.36 UL	.60 B	.35 U	.37 U	.35 U	.34 U	.35 U	.36 U	.36 U	.37 U	.38 U
Arsenic	0.75 J	0.50 J	0.094 J	1.7 J	0.82 J	1.3 J	0.90 J	1.2 J	1.1 J	.72 J	12.6	.70 B	.83 B	.61 B	.47 B	.66 B	.26 U	1.5 J	1.4 B	5.2
Barium	18.2 J	22.7 J	46.4	16.3 J	6.0 J	34.9 J	38.3 J	21.7 J	33.1 J	30.6 J	19.6 J	20 J	18.6 J	16.1 B	9.6 J	19.7 B	18.8 J	13.4 J	36.6 J	41.5 J
Beryllium	0.21 B	0.24 B	0.34 B	0.28 B	0.088 U	0.53 B	0.31 B	.32 B	.63 B	.36 B	.74 B	.21 B	.089 B	.083 U	.079 U	.082 U	.086 U	.084 U	.32 B	.79 J
Calcium	49.5 J	47.4 J	406 J	365 J	316 J	367 J	925 J	157 J	208 J	76.8 J	2860	244 J	175 J	84.4 J	95.7 J	251 J	308 J	258 B	762 J	619 J
Chromium	6.4	2.7	4.9	6.2	9.0	2.7	3.1	3.6	3.5	3.6	17.3	2.8 B	3.1	2.4	2.2	3.8	2.3	5.5	4	12.4
Cobalt	0.43 B	0.56 J	4.3 J	2.4 J	0.15 U	3.2 J	1.8 J	1.2 J	5.3 J	.94 B	3.2 J	.1 J	1.2 B	1.0 J	.84 J	.96 J	.68 J	1.2 J	3.4 J	6.7 J
Copper	1.6 J	1.2 J	1.7 J	1.6 J	1.2 J	1.6 J	1.3 J	1 J	1.4 J	.9 J	2.7 B	1.4 B	2 B	2.9 B	2.5 B	3 B	2.6 B	3.5 B	4.0 J	2.2 J
Iron	6850	2420	3480	4970	8240	2150	2910	3340	3660	3560	20700	2510	2810	2490	1950	3540	1720	5800	3770	10400
Lead	12.0	10.9	7.8	7.2	7	10.0	7.1	12.2	6.7	9.8	14.6	6.2	16	5.8	6.1	9.1	8.1	7.2	11.2	11.5
Magnesium	143 J	166 J	218 J	237 J	154 J	164 J	197 B	184 J	212 J	228 J	782 J	169 J	179 J	164 J	112 J	194 J	132 J	241 J	245 J	329 J
Manganese	48.1	44.3	138	30.4	19.2	234	111	94.8	278	129	85.7	150	43.7	60.4	81.9	61	60.2	40.1	304	435
Mercury	0.048 U	0.049 U	0.051 U	0.053 U	0.051 U	0.097 J	.041 U	.052 U	.048 U	.05 U	.059 UL	.046 U	.045 U	.037 U	.047 U	.046 U	.051 J	.042 U	.042 U	.051 U
Nickel	1.4 B	1.7 J	3.1 J	2.8 J	1.0 B	3.3 J	2 J	1.9 J	4.4 J	3.1 J	5.9 J	1.4 B	1.7 J	1.4 B	1.1 J	1.4 J	1 B	1.8 B	2.2 B	4.1 J
Potassium	156 B	86.8 B	160 B	207 B	307 J	118 B	114 B	137 B	136 B	133 B	841 J	143 B	105 B	97.1 B	87 B	112 B	92.6 B	207 B	159 B	274 B
Selenium	0.65 J	0.65 UL	0.59 UL	0.60 UL	0.62 UL	0.57 UL	.62 UL	.6 UL	.6 UL	.59 UL	1.4 L	.58 UL	.61 UL	.58 UL	.55 UL	.57 UL	.6 UL	.59 U	.62 UL	1.2 K
Silver	0.11 U	0.12 U	0.10 U	0.11 U	0.11 U	0.10 U	.11 U	.11 U	.11 U	.1 U	.12 U	.1 U	.11 U	.1 U	.1 U	.1 U	.11 U	.11 U	.11 U	.11 U
Sodium	172 B	142 B	152 B	172 B	197 B	134 B	150 B	163 B	114 B	143 B	374 B	239 B	294 B	255 B	240 B	242 B	309 B	265 B	246 B	73.6 U
Vanadium	15.5	6.1 J	6.5 J	10.9	22.1	5.0 J	5.4 J	7.3 J	6 J	7.3 J	26.1	5.1 J	7.1 J	4.7 J	4 J	8.1 J	4.6 J	11.1	7.7 J	14
Zinc	5.6	6.4	10.9	7.4	3.6 J	8.8	7.6	7.5	12.2	5.9	26.7	5.9 J	4.7 J	8.7 J	6.4 J	6.5 J	6.7 J	7 J	14.6 J	22.5 J

Notes:

Shading indicates detections

* Duplicate sample collected. Highest detected value

B - Analyte not detected above the level reported in

J - Analyte present, value may or may not be accura

K - Analyte present, value may be biased high, actua

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

R - Unreliable Result

U - The material was analyzed for, but not detected

UL - Analyte not detected, quantitation limit is probal

mg/kg - Milograms per kilogram

µg/kg - Micrograms per kilogram

Table 4-2
WPNSTA Yorktown Surface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	WPNSTA Soil Association 1					WPNSTA Soil Association 2								
Sample ID	BGS01	BGS04	BGS31	BGS35	BGS40	BGS05	BGS18*	BGS19	BGS33	BGS34*	BGS36	BGS37	BGS38	BGS39 *
Sample Date	07/08/94	07/08/94	07/21/94	07/23/94	07/23/94	07/08/94	07/20/94	07/20/94	07/22/94	07/23/94	07/22/94	07/23/94	07/23/94	07/23/94
Sample Depth (inches bgs)	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6
Inorganics (mg/kg)														
Aluminum	1960	8550	4500	12000	3640	4530	5780	5760	8440	8330	2850	6250	6880	4660
Antimony	8.4 UL	8.9 UL	8.7 UL	11 L	8.1 UL	8.7 UL	9.3 UL	9 UL	8.3 R	8.7 UL	8.1 R	8.4 UL	8.6 UL	8 UL
Arsenic	1.9 J	3.4	1.1 J	2.1 K	1.2 K	3.6	2.5 L	4.2	1.4 J	4.1	0.68 J	1.6 K	1.7 K	0.81 J
Barium	12.7 J	62	23.7 J	47.9 J	18.5 J	24.8 J	35.1 J	17.4 J	30.2 J	30 J	11.8 J	34 J	76.3	18.4 J
Beryllium	0.2 U	0.52 J	0.30 J	0.55 J	0.22 U	0.28 J	0.59 J	0.42 J	0.37 J	0.49 J	0.22 U	0.56 J	0.93 J	0.3 J
Cadmium	1.1 U	1.2 U	1.2 U	1.2 UL	1.1 UL	1.2 U	1.3 U	1.2 U	1.1 U	1.2 UL	1.3 K	1.1 UL	1.2 UL	1.1 UL
Calcium	268 J	7820	1120 J	800 J	467 J	1420	727 J	908 J	596 J	1740	135 J	432 J	1430	233 J
Chromium	4.3	13.6	4.7	10.9	5.2	9.4	8.7	13.4	8.8	18.3	2.6	7.9	7	5.4
Cobalt	0.9 U	4.2 J	1.8 J	3.6 J	1 J	1.2 J	6.7 J	4.9 J	2.5 J	3.4 J	1.1 J	2.3 J	4 J	2.7 J
Copper	1.1 U	24.4	1.2 J	3.7 J	1.7 J	2 J	2 J	2.3 J	2.4 J	4.2 J	1.1 U	3.3 J	5 J	1.6 J
Iron	3310	12400	3150	6310	3510	7090	7960	17200	7410	12500	1910	5190	6300	2700
Lead	6.9	22.7	7.3 L	16.5 L	7.7 L	9.9	13.3	12.9	9.3	7.4 L	16.5	8.7 L	9.9 L	8.6
Magnesium	175 J	1060 J	324 J	914 J	347 J	475 J	385 J	492 J	493 J	1610	161 J	482 J	594 J	307 J
Manganese	8.3	298	72.8	206	48	73.4	273 L	97.7 L	89.3	105	20.3	252	413	54.9
Nickel	3.6 U	9 J	5.1 J	6.9 J	4.3 J	4.8 J	4.8 K	6.2 K	8.8 K	8.6 J	5.5 K	7.5 J	5.9 J	5.2 J
Potassium	355.0 U	828 J	371 U	724 J	398 J	531 J	535 J	429 J	350 U	1640 J	345 U	358 U	593 J	611 J
Selenium	0.4 J	0.27 J	0.24 U	0.4 L	0.22 UL	0.24 U	0.25 U	0.24 U	0.22 UL	0.23 UL	0.22 UL	0.27 L	0.23 UL	0.27 L
Silver	0.9 U	0.96 U	0.94 U	0.96 U	0.88 U	0.94 U	1 U	0.98 U	0.89 U	0.94 U	0.88 U	0.91 U	0.93 U	0.86 U
Sodium	43.2 J	115 J	32.7 J	84.3 J	68.7 J	40.6 J	26.1 J	17.4 J	36.2 J	63.4 J	50 J	37.6 J	52 J	69.3 J
Vanadium	7.4 J	19.3	8.9 J	21.2	8.8 J	15.3	17.3	20.8	17.1	18.9	6.1 J	14.4	12	9.4 J
Zinc	5.7	37.5	9.7	21.3	9.8	14.9	16.3	17.9	12.8 J	24.1	5.9 J	15.5	23.8	12.1

Notes:
Shading indicates detections
* Duplicate sample collected. Highest detected value reported.
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
R - Unreliable Result
U - The material was analyzed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
mg/kg - Milograms per kilogram

Table 4-2
WPNSTA Yorktown Surface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	WPNSTA Soil Association 3									WPNSTA Soil Association 4									
Sample ID	BGS02	BGS06	BGS07	BGS09	BGS20*	BGS22	BGS23	BGS24*	BGS25	BGS03	BGS08	BGS10	BGS11	BGS14	BGS15	BGS26	BGS27	BGS28	BGS30
Sample Date	07/08/94	07/08/94	07/08/94	07/08/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/08/94	07/08/94	07/19/94	07/19/94	07/19/94	07/20/94	07/21/94	07/21/94	07/21/94	07/21/94
Sample Depth (inches bgs)	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6
Inorganics (mg/kg)																			
Aluminum	4590	3210	6030	4960	13000	10600	3110	4440	5010	6320	6530	4980	4370	4530	6180	5810	12000	19200	9210
Antimony	8.3 UL	9.2 L	8.5 UL	8.4 UL	10.3 UL	9.3 UL	8.5 UL	8.9 UL	8.3 UL	8.8 UL	9.4 UL	8.6 UL	9.5 UL	9.2 UL	9.3 UL	8.7 UL	10.6 UL	9.2 UL	8.6 UL
Arsenic	1.2 J	2 J	5.8	1.5 J	2.9	1.8 J	1.1 J	1.5 J	1.4 J	1.5 J	1.4 J	1.2 J	2.9	0.84 J	0.75 L	1.1 J	2.7 J	2.9	2.4
Barium	22 J	19.1 J	17.8 J	20.4 J	76.6	57.0	10.8 J	22.9 J	32.4 J	53.1	20 J	31.5 J	35 J	24.4 J	20.2 J	19 J	23.5 J	80.2	15.8 J
Beryllium	0.23 J	0.23 J	0.4 J	0.31 J	0.64 J	0.57 J	0.23 U	0.33 J	0.38 J	0.51 J	0.25 U	0.42 J	0.32 J	0.25 U	0.42 J	0.24 U	0.32 J	0.63 J	0.23 U
Cadmium	1.1 U	1.1 U	1.1 U	1.1 U	1.4 U	1.3 U	1.1 U	1.2 U	1.1 U	1.2 U	1.3 U	1.2 U	1.3 U	1.2 J	1.3 U	1.2 U	1.4 U	1.2 U	1.5
Calcium	215 J	388 J	259 J	110 J	2940	1330	133 J	575 J	148 J	937 J	269 J	204 J	1610 J	696 J	229 J	105 J	346 J	854 J	347 J
Chromium	5.5	5.3	11.8	5.1	14.3	9.7	3.4	5.4	6.1	5.4	6.9	6.8	9.8	5.4	5.7	5.3	14.1	17.5	9.6
Cobalt	1.6 J	2.3 J	2.2 J	1.6 J	4.1 J	3.0 J	1.0 J	2.7 J	3.5 J	1.5 J	1.1 J	6 J	2.5 J	2 J	3.6 J	1.0 J	1.9 J	3.5 J	1.7 J
Copper	1.7 J	1.1 U	2.4 J	1.1 U	3.9 J	3.4 J	1.1 U	1.5 J	1.3 J	1.5 J	2 J	1.2 UL	3.7 J	2.5 J	1.6 J	1.9 J	3.7 J	5.3 J	2.0 J
Iron	4160	4910	11100	3690	11200	6780	2160	3940	6490	4670	5670	3580	7010	4400	5260	3820	19900	13000	7830
Lead	6.4	9.8	43.1	12	16.7 L	25.3 L	10 L	12.6 L	11.8 L	15.3	14.7	14.3 J	14.2 J	14.2 J	11.3	10.4 L	14.5 L	38.7 L	13 L
Magnesium	236 J	262 J	489 J	319 J	818 J	586 J	181 J	303 J	290 J	290 J	329 J	297 J	487 J	233 J	229 J	320 J	401 J	1070 J	394 J
Manganese	65.8	85.9	29.9	26.5	340	157	19.0	87.6	72.9	491	40	169 J	191 J	118 J	45.2 L	15.5	28.7	126	13.0
Nickel	4.5 J	5.6 J	6.2 J	4.2 J	11.9	6.5 J	5.7 J	5.4 J	5.7 J	4.9 J	7 J	6.6 J	4.1 U	6 J	4 U	5.4 J	4.6 J	10.7	5.5 J
Potassium	353 U	354 U	360 U	355 U	725 J	519 J	359 U	377 U	353 U	372 U	398 U	367 U	515 J	390 U	396 U	370 U	449 U	457 J	416 J
Selenium	0.32 J	0.32 J	0.32 J	0.38 L	0.43 J	0.39 J	0.23 U	0.3 J	0.22 U	0.46 J	0.55 L	0.23 U	0.27 J	0.25 U	0.25 U	0.30 J	0.36 J	0.31 J	0.36 J
Silver	0.9 U	0.9 U	0.92 U	0.9 U	1.1 U	1.0 U	0.91 U	0.96 U	0.90 U	0.95 U	1 U	1 J	1 U	0.99 U	1 U	0.94 U	1.1 U	1.00 U	0.92 U
Sodium	32.3 J	22.7 J	37.8 J	34 J	26.4 J	32.2 J	22.7 J	18.6 J	29.6 J	40.1 J	45.4 J	46.7 J	34.7 J	31.9 J	24 J	43.0 J	33.0 J	37.3 J	35.7 J
Vanadium	10.8 J	10.1 J	20.4	10.1 J	27.8	20.4	8.7 J	10.0 J	10.7 J	10.7 J	14.8	11.2 J	15	11 J	12.7	12.5	29.8	34.7	21.2
Zinc	8.6	9.8	18	10.9	25.5	22.7	5.7	12.1	11.0	13	13.4	17.2	18.6	11.3	11.7	8.2	15.5	48.4	12.9

Notes:
Shading indicates detections
* Duplicate sample collected. Highe
J - Analyte present, value may or m
K - Analyte present, value may be b
L - Analyte present, value may be b
R - Unreliable Result
U - The material was analyzed for, b
UL - Analyte not detected, quantitati
mg/kg - Milograms per kilogram

Table 4-2
WPNSTA Yorktown Surface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	WPNSTA Soil Association 5				WPNSTA Soil Association 3 and 4	
Sample ID	BGS12	BGS13	BGS16	BGS17	BGS21	BGS29
Sample Date	07/20/94	07/20/94	07/19/94	07/20/94	07/21/94	07/21/94
Sample Depth (inches bgs)	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6	0 - 6
Inorganics (mg/kg)						
Aluminum	3940	2540	4630	7500	15600	4410
Antimony	8.6 UL	8.5 UL	8.7 UL	9.4 UL	8.9 UL	8.5 UL
Arsenic	0.46 L	0.65 L	0.53 L	2.5 L	63.9	1.2 J
Barium	5.1 J	4.2 J	15.1 J	28.1 J	19.5 J	15.5 J
Beryllium	0.23 U	0.23 U	0.23 U	0.6 J	0.24 U	0.23 U
Cadmium	1.2 U	1.1 U	1.2 U	1.3 U	1.2 U	1.1 U
Calcium	39.4 J	67.3 J	346 J	447 J	97.0 J	168 J
Chromium	4.3	3.2	5.1	9.7	13.1	4.5
Cobalt	1.1 J	0.91 U	1.6 J	4.6 J	1.6 J	1.4 J
Copper	1.2 U	1.1 U	1.7 J	1.9 J	2.7 J	1.1 U
Iron	3150	1440	3550	9210	6820	3400
Lead	7.6	8.4	8.7	14.3	13.9 L	8.8 L
Magnesium	159 J	61.5 J	245 J	416 J	456 J	257 J
Manganese	7.6 L	10.3 L	39.2 L	92.3 L	9.5	28.6
Nickel	3.7 U	3.7 U	3.8 U	7.7 K	7.2 J	5.1 J
Potassium	367 U	359 U	368 U	399 U	377 U	360 U
Selenium	0.23 U	0.23 U	0.24 U	0.26 U	0.44 J	0.23 U
Silver	0.93 U	0.91 U	0.94 U	1 U	2.1 J	0.92 U
Sodium	13.9 J	40.1 J	32.1 J	25 J	51.0 J	18.7 J
Vanadium	11 J	7.6 J	10.8 J	20.2	25.4	9.8 J
Zinc	5.1 Z	3.2 KJ	8.4	17.2	8.5	16

Notes:
Shading indicates detections
* Duplicate sample collected. Highe
J - Analyte present, value may or m
K - Analyte present, value may be b
L - Analyte present, value may be b
R - Unreliable Result
U - The material was analyzed for, b
UL - Analyte not detected, quantitati
mg/kg - Milograms per kilogram

Table 4-3
CAX Subsurface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	CAX Soil Association 1									
Sample ID	BG1-SB01-01	BG1-SB02-01	BG1-SB03-01	BG1-SB04-01	BG1-SB05-01*	BG1-SB06-01	BG1-SB07-01	BG1-SB08-01	BG1-SB09-01	BG1-SB10-01
Sample Date	08-06-2001	07-23-2001	07-23-2001	08-06-2001	08-06-2001	08-06-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001
Sample Depth (inches bgs)	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24
Chemical Name										
Volatile Organic Compounds (ug/kg)										
1,1,2,2-Tetrachloroethane	2 J	13 U	29 U	4 J	13 U	15 U	12 U	3 J	12 U	15 U
2-Butanone	13 U	13 U	29 U	5 J	13 U	4 J	12 U	14 U	12 U	15 U
Acetone	12 B	5 J	42	14 B	16 B	15 B	12 U	14 U	9 J	15 U
Carbon Disulfide	13 U	13 U	14 J	15 U	13 U	15 U	12 U	14 U	2 J	15 U
Isopropylbenzene	13 U	13 U	29 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U
Methylene Chloride	8 B	13 U	29 U	26 B	13 B	4 B	12 U	14 U	12 U	15 U
Styrene	13 U	13 U	29 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U
Toluene	8 B	13 U	29 U	11 B	16 B	2 B	12 U	3 B	3 J	2 B
Semivolatile Organic Compounds (ug/kg)										
Benzaldehyde	430 U	410 UL	940 U	100 J	440 U	53 J	380 U	450 U	970 U	490 U
Phenol	430 U	410 UL	940 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U
bis(2-Ethylhexyl)phthalate	120 B	180 B	350 B	160 B	120 B	160 B	57 B	72 B	970 U	75 B
Pesticides (ug/kg)										
4,4'-DDD	4.3 U	4.1 U	9.4 U	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U
4,4'-DDE	4.3 U	4.1 U	3.9 J	1.7 J	4.4 U	4.9 U	3.8 U	4.5 U	2.7 J	4.8 U
Dieldrin	4.3 U	4.1 U	9.4 U	5.1 U	2.5 J	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U
Endosulfan I	2.2 U	2.1 U	2.3 J	2.6 U	1.2 J	.96 J	2 U	2.3 U	5 U	2.5 U
Endosulfan sulfate	4.3 U	4.1 U	3.4 J	5.1 U	2.7 J	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U
Endrin aldehyde	4.3 U	4.1 U	9.4 U	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U
Endrin ketone	4.3 U	4.1 U	9.4 U	5.1 U	2.5 J	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U
alpha-BHC	1.3 J	2.1 U	4.8 U	2.6 U	.81 J	2.5 U	2 U	2.3 U	5 U	2.5 U
alpha-Chlordane	2.2 U	2.1 U	4.8 U	2.6 U	1.5 J	1.4 J	2 U	2.3 U	5 U	2.5 U
beta-BHC	2.2 U	2.1 U	4.8 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U
delta-BHC	8 J	2.1 U	4.8 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U
PCBs (ug/kg)										
No Detections										
Inorganics (mg/kg)										
Aluminum	3640	238	18400	5190	3670	4570	307	1510	11600	2700
Arsenic	4.5	.29 U	10.4	5.5	3 J	3.2	.28 U	1.7 B	12.5	2.5 B
Barium	21.7 J	.9 J	28.5 J	6.6 J	11.8 J	14.2 J	3.8 J	3.5 J	19.8 J	5.1 J
Calcium	1120 J	307 J	1420 J	1590	3390	32200	145 J	880 J	1310 J	351 J
Chromium	8.2	2.4	37.5	17.1	12.1	15.3	4.5	5.7	25	7.5
Cobalt	1.3 B	.17 U	3.7 J	1.4 B	2 J	1.6 J	.2 J	.57 J	2.7 J	1.1 J
Copper	1.4 J	.86 J	9.6 J	2.9 J	2.6 J	3 J	.79 J	2.3 J	9 J	2.9 B
Cyanide	.05 U	.046 U	2.7	.058 U	.061 U	.06 U	.045 U	.055 U	.096 U	.056 U
Iron	7610	1280	22400	14000	9910	9780	1820	4510	19300	5360
Lead	6.4	2.6	23.3	4.8	5.7	5.8	6	83.7	35.3	5.4
Magnesium	318 J	214 J	4630	1810	1040 J	1350 J	213 J	710 J	3340	862 J
Manganese	16	2.9 J	86.2	14.6	15.2	17.2	6.7	13.4	53.8	14
Mercury	.054 U	.052 UL	.11 UL	.07 U	.077 J	.068 U	.054 UL	.059 UL	.083 UL	.05 UL
Nickel	2 J	.51 J	11 J	3.2 J	3.7 J	3.6 J	.57 J	2 J	7.8 J	2.8 J
Potassium	281 J	147 B	4240	2370 J	1210 J	1970 J	182 B	542 J	2790	611 J
Selenium	1.6 B	.68 UL	1.5 UL	1.8 B	1.9 L	1.3 B	.65 UL	.77 UL	1.3 UL	.78 UL
Sodium	467 B	1280	9810	1560	629 B	2560	973 B	1700	10400	2360
Vanadium	12.2 J	2.1 J	53.8	19.4	12.9 J	17.7	3.1 J	7.8 J	37.8	14.1
Zinc	6.7 J	20.9	52.9	14.2 J	12.4 J	14.7 J	7.1 L	17.3	34.3	15.2
Conventional (mg/kg)										
Total Organic Carbon	28660	2310	133000	34600	40740	52360	3030	10100	55100	10600

Soil Association	CAX Soil Association 2									
Sample ID	BG2-SB01-01*	BG2-SB02-01	BG2-SB03-01	BG2-SB04-01	BG2-SB05-01	BG2-SB06-01	BG2-SB07-01	BG2-SB08-01	BG2-SB09-01	BG2-SB10-01
Sample Date	07-27-2001	07-23-2001	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-23-2001	07-24-2001	07-24-2001	07-25-2001
Sample Depth (inches bgs)	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24
Chemical Name										
Volatile Organic Compounds (ug/kg)										
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	12 U	11 U	13 U	11 U	11 U	11 U	14 U
2-Butanone	11 U	11 U	11 U	12 U	11 U	13 U	11 U	11 U	11 U	14 U
Acetone	6 J	11 U	11 U	12 U	11 U	4 J	11 U	11 U	11 U	14 U
Carbon Disulfide	11 U	11 U	11 U	12 U	11 U	13 U	11 U	11 U	11 U	14 U
Isopropylbenzene	11 U	11 U	1 J	12 U	11 U	13 U	11 U	11 U	11 U	14 U
Methylene Chloride	11 U	11 U	11 U	12 U	11 U	13 U	11 U	11 U	11 U	14 U
Styrene	11 U	11 U	11 U	12 U	11 U	13 U	11 U	11 U	11 U	14 U
Toluene	1 B	11 U	2 B	12 U	1 B	1 B	11 U	1 B	11 U	14 U
Semivolatile Organic Compounds (ug/kg)										
Benzaldehyde	350 U	380 U	350 U	390 U	360 U	420 U	370 U	370 U	360 U	460 U
Phenol	350 U	380 U	350 U	390 U	360 U	420 U	370 U	370 U	360 U	460 U
bis(2-Ethylhexyl)phthalate	670	380 U	610	160 B	67 B	120 J	180 J	58 J	73 J	660
Pesticides (ug/kg)										
4,4'-DDD	3.5 U	3.8 U	3.5 U	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U
4,4'-DDE	3.5 U	3.8 U	3.5 U	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U
Dieldrin	3.5 U	3.8 U	1.9 J	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U
Endosulfan I	1.8 U	2 U	1.8 U	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U
Endosulfan sulfate	3.5 U	3.8 U	3.5 U	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U
Endrin aldehyde	3.5 U	3.8 U	2.7 J	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U
Endrin ketone	3.5 U	3.8 U	3.5 U	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U
alpha-BHC	1.8 U	2 U	1.8 U	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U
alpha-Chlordane	1.8 U	2 U	1.8 U	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9	2.4 U
beta-BHC	1.8 U	2 U	1.8 U	.74 J	1.8 U	.79 J	15 U	1.9 U	.99 J	2.4 U
delta-BHC	1.8 U	2 U	1.8 U	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U
PCBs (ug/kg)										
No Detections										
Inorganics (mg/kg)										
Aluminum	6960	11400	4590	12600	4820	8350	9770	8040	6310	9990
Arsenic	15.9	3.8	1.3 B	4.2	1.6 B	6.8	5	3	2.4	4.2
Barium	21.4 J	38.7 J	36.2 J	32.4 J	32.2 J	48.5	37.1 J	35.2 J	33.7 J	42 J
Calcium	1810	1060	412 J	479 J	231 J	162000	474 J	363 J	546 J	819 J
Chromium	25.3	26.4	5.3	15.2	7.2	24.5	15.2	11.4	9.8	15.1
Cobalt	4.4 J	2.4 J	4.2 J	3.1 J	7.3 J	4 J	2.1 J	2.4 J	1.7 J	2.2 J
Copper	2.2 B	2.5 B	1 B	3.9 B	.61 B	5 J	2.4 B	.92 B	.75 B	1.4 B
Cyanide	.12 B	.043 U	.043 U	.057 B	.044 U	.11 B	.1 B	.044 U	.042 U	.056 U
Iron	30000	21700	5140	18300	7320	20900	18200	12800	11200	19500
Lead	7.1	7.7	7.7	8.1	4.1	6.9 L	6.1	6	6.6	8.3
Magnesium	765 J	1420	357 J	667 J	563 J	3340	819 J	649 J	455 J	550 J
Manganese	131	44.2	82.5	101	135	104	60.8	31.8	26.1	37.6
Mercury	.11 B	.045 UL	.043 UL	.11 B	.082 B	.12 B	.046 UL	.082 B	.076 B	.1 B
Nickel	8.2 J	5.5 J	3.4 J	6.8 J	5.3 J	9.1 J	5 J	4 J	2.9 J	3.5 J
Potassium	889 J	1140	210 B	459 J	373 J	2100	563 J	409 J	298 J	389 J
Selenium	1.2 J	.59 UL	.57 UL	.64 UL	.57 UL	.65 UL	.61 UL	.87 J	.61 UL	.77 UL
Sodium	321 B	206 B	175 B	305 B	268 B	815 B	152 B	297 B	299 B	371 B
Vanadium	33.2	32	9.1 J	28.5	10.7	20.6	26	19.8	16.5	28
Zinc	29.5	19.9	7.4 L	18.4	10.6	30.8	16.0	9.8	7.5 L	10.2
Conventional (mg/kg)										
Total Organic Carbon	4338	5010	6030	5971	6795	9307	5530	4584	6682	8982

Notes:

Shading indicates detections

* Duplicate sample collected. Highest detected value reported.
B - Analyte not detected above the level reported in blanks
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
U - The material was analyzed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
mg/kg - Milograms per kilogram
µg/kg - Micrograms per kilogram

Table 4-3
CAX Subsurface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	CAX Soil Association 3										CAX Soil Association 4									
Sample ID	BG3-SB01-01*	BG3-SB02-01	BG3-SB03-01	BG3-SB04-01	BG3-SB05-01	BG3-SB06-01	BG3-SB07-01	BG3-SB08-01	BG3-SB09-01	BG3-SB10-01	BG4-SB01-01*	BG4-SB02-01	BG4-SB03-01	BG4-SB04-01	BG4-SB05-01	BG4-SB06-01	BG4-SB07-01	BG4-SB08-01	BG4-SB09-01	BG4-SB10-01
Sample Date	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Sample Depth (inches bgs)	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24	6 - 24
Chemical Name																				
Volatile Organic Compounds (ug/kg)																				
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	11 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Acetone	9 B	11 U	11 U	11 U	12 U	11 U	11 U	7 B	11 U	11 U	9 B	11 U	11 U	11 U	11 U	3 B	3 B	11 U	11 U	11 U
Carbon Disulfide	11 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Isopropylbenzene	11 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Methylene Chloride	11 U	1 J	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	2 B	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Styrene	4 J	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Toluene	11 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Semivolatile Organic Compounds (ug/kg)																				
Benzaldehyde	370 U	370 U	360 U	350 U	390 U	350 U	350 U	370 U	370 U	370 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	51 J	360 U
Phenol	370 U	370 U	360 U	350 U	390 U	350 U	350 U	370 U	370 U	370 U	350 U	370 U	380 U	370 U	340 J	53 J	360 U	370 U	360 U	360 U
bis(2-Ethylhexyl)phthalate	370 U	370 U	360 U	37 B	58 J	350 U	140 J	41 J	370 U	160 B	470	130 J	380 U	410	100 B	55 B	130 J	580	57 J	85 B
Pesticides (ug/kg)																				
4,4'-DDD	3.7 U	3.1 J	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U	3.7 U	3.6 U	3.7 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
4,4'-DDE	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U	3.7 U	3.6 U	3.7 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Dieldrin	3.7 U	2.3 J	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U	3.7 U	3.6 U	3.7 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endosulfan I	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Endosulfan sulfate	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U	3.7 U	3.6 U	3.7 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endrin aldehyde	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U	3.7 U	3.6 U	3.7 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endrin ketone	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U	3.7 U	3.6 U	3.7 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
alpha-BHC	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
alpha-Chlordane	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U	2.4 J	1.9 U	4.7	1.8 U	1.9 U	2 U	86 B	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	1.5 J
beta-BHC	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
delta-BHC	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
PCBs (ug/kg)																				
No Detections																				
Inorganics (mg/kg)																				
Aluminum	6830	4970	3620	3290	9110	1920	3610	5800	6280	10900	7380	5540	10700	8460	2310	11000	6870	6680	4740	7900
Arsenic	.86 B	.87 B	1.1 B	2.1	1.2 B	.4 B	1.2 B	1.2 B	1.3 B	1.5 B	18.6	1.1 B	2 J	3	.46 B	1.4 B	1.3 B	2.4	1.2 B	13.8
Barium	18.3 J	38.3 J	28 J	21.7 J	8.2 J	19.4 J	28.7 J	18.8 J	47.8	26.1 J	27.4 J	41 J	33.5 J	58.0	20.4 J	10.8 J	19.4 J	21.1 J	48.2	46
Calcium	76.8 J	112 J	234 J	102 J	304 J	96.4 J	242 J	56.4 J	151 J	111 J	2080	261 J	345 J	362 J	87.2 J	300 J	138 J	481 J	123 J	493 J
Chromium	7.8	4.7	5.1	7.6	15.6	2.9	5.3	7.2	4.6	11.9	25.6	6.1	12	10.2	2.8	10.8	7.8	8.3	3.5 B	18.4
Cobalt	.4 B	1.3 J	2.8 J	4 J	.16 U	2.4 J	1.5 J	.84 J	8.1 J	.92 B	4.4 J	2.6 J	1.1 J	2.3 J	1.2 J	.5 J	1.1 J	2 J	7 J	6 J
Copper	1.2 J	.71 J	.93 J	.59 B	2.2 J	.95 J	1.5 J	1.1 J	1.3 J	2.4 J	3.2 J	1.2 B	1.8 B	2.8 B	.43 B	1.5 B	1.7 B	3.1 J	.68 B	2.9 J
Cyanide	.1 B	.066 B	.063 B	.041 U	.047 U	.04 B	.21 B	.045 U	.44 B	.045 U	.041 U	.044 U	.045 U	.11 B	.043 U	.045 U	.041 U	.075 B	.1 B	.046 B
Iron	8390	4790	3940	4790	12500	1740	5520	6780	5070	12500	31700	6700	12800	12400	2310	10200	7560	11000	3870	23600
Lead	5.6	6.1	3.6	5	6.7	3.2	4.5	5.3	5.5	6.6	7.8	6.8	5.8	5.5	3.8	6.2	5.1	5.4	6.1	8.1
Magnesium	175 J	206 J	241 J	251 J	218 J	115 J	300 J	202 J	324 J	392 J	754 J	371 J	414 J	471 J	193 J	273 J	318 J	322 J	178 J	447 J
Manganese	13.5	30.4	51.1	40	5.4	49.3	38.3	14.4	208	16.4	195	86.1	27.7	67.8	39	7.4	21.6	62.2	154	137
Mercury	.049 UL	.056 UL	.044 UL	.054 UL	.044 UL	.036 UL	.038 UL	.048 UL	.048 UL	.039 UL	.042 UL	.084 B	.14	.12 B	.075 B	.093 B	.1 B	.11 B	.066 B	.092 B
Nickel	1.1 B	1.8 J	2.4 J	3.8 J	.99 B	2 J	2 J	1.9 J	6.4 J	2.6 J	8.5	4.9 J	3 J	4.9 J	1.5 J	1.8 J	2.4 J	3.3 J	2.5 J	6.3 J
Potassium	179 B	131 B	167 B	177 B	278 J	78.8 B	193 B	173 B	168 B	253 B	764 J	259 B	276 J	367 J	102 B	191 B	197 B	287 J	117 B	471 J
Selenium	.6 UL	.61 UL	.61 UL	.58 UL	.63 UL	.58 UL	.59 UL	.61 UL	.58 UL	.62 UL	.55 UL	.62 UL	.62 UL	.58 UL	.6 UL	.61 UL	.60 UL	.63 UL	.59 UL	.64 J
Sodium	205 B	214 B	170 B	162 B	210 B	177 B	217 B	208 B	135 B	199 B	314 B	303 B	337 B	294 B	300 B	332 B	373 B	332 B	222 B	292 B
Vanadium	17.6	10 J	7.9 J	7.5 J	36.0	3.4 J	9.6 J	12.7	7.2 J	22.3	35.1	11.9	22.0	18.9	4.7 J	30	14.6	17.8	5.8 J	30.8
Zinc	5 L	5.2 L	5.7 L	6.6 L	5 L	4 B	5.8 L	6.9 L	13.8	12.3	32	7.1 L	10.1	10.3	2.5 B	3.8 B	6.3 L	8.2 L	4.5 L	19.9
Conventional (mg/kg)																				
Total Organic Carbon	7050	3760	4680	3360	4490	6200	4730	6680	5200	8060	7332	3019	3537	4282	3013	2967	2324	2665	4088	4010

Notes:

Shading indicates detections

* Duplicate sample collected. Highest detected valu

B - Analyte not detected above the level reported in

J - Analyte present, value may or may not be accura

L - Analyte present, value may be biased low, actua

U - The material was analyzed for, but not detected

UL - Analyte not detected, quantitation limit is proba

mg/kg - Milograms per kilogram

µg/kg - Micrograms per kilogram

Table 4-4
WPNSTA Yorktown Subsurface Soil Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Soil Association	2	3	4
Sample ID	BGSB04-01*	BGSB05-01	BGGW08A-01*
Sample Date	08/08/94	07/19/94	08/04/94
Sample Depth (inches bgs)	12 - 24	12 - 24	12 - 24
Inorganics (mg/kg)			
Aluminum	6560 J	6840	4580
Arsenic	1.1 L	1.2 L	0.36 J
Barium	42.1 J	47.8 J	21 J
Beryllium	0.57 J	0.52 J	0.23 UL
Calcium	363 J	378 J	168 J
Chromium	6	7.5	5.4 L
Cobalt	3.1 J	2.2 J	0.97 J
Copper	2.2 J	2.4 J	5 J
Iron	4030 J	6130	3850
Lead	5.6 L	13.7 J	18.3
Magnesium	512 J	462 J	229 J
Manganese	284 J	85.6 J	23
Nickel	6.7 K	3.8 U	4.5 K
Potassium	399 J	392 J	350 U
Selenium	0.26 L	0.38 J	0.23 UL
Silver	0.88 U	1.1 J	0.89 U
Sodium	117 J	58.5 J	22 J
Vanadium	8.6 J	12.9	9.5 L
Zinc	14.3	11.1	10.5

Notes:
Shading indicates detections
* Duplicate sample collected. Highest detected value reported.
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
U - The material was analyzed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
mg/kg - Milograms per kilogram

Table 4-5
Surface Soil Summary Statistics
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Chemical Name	Frequency of Detection	Minimum Detected Value	Location of Minimum Detected Value	Maximum Detected Value	Location of Maximum Detected Value
Volatile Orgnic Compounds					
Not Analyzed					
Semivolatile Organic Compounds (µg/kg)					
Acetophenone	4/40	41 J	BG2-SS06	110 J	BG3-SS08
Benzaldehyde	1/40	--	--	100 J	BG1-SS04
Benzo(a)anthracene	1/40	--	--	220 J	BG1-SS03
Benzo(a)pyrene	1/40	--	--	340 J	BG1-SS03
Benzo(b)fluoranthene	1/40	--	--	650 J	BG1-SS03
Benzo(g,h,i)perylene	1/40	--	--	350 J	BG1-SS03
Benzo(k)fluoranthene	1/40	--	--	260 J	BG1-SS03
Chrysene	1/40	--	--	480 J	BG1-SS03
Di-n-octylphthalate	1/40	--	--	66 J	BG2-SS06
Fluoranthene	1/40	--	--	270 J	BG1-SS03
Indeno(1,2,3-cd)pyrene	1/40	--	--	340 J	BG1-SS03
Pyrene	1/40	--	--	330 J	BG1-SS03
bis(2-Ethylhexyl)phthalate	20/40	38 J	BG1-SS08	5000	BG2-SS10
Pesticides (µg/kg)					
4,4'-DDD	4/40	1.3 J	BG4-SS01	12	BG1-SS06
4,4'-DDE	6/40	1.1 J	BG2-SS02	23	BG1-SS03
4,4'-DDT	1/40	--	--	10 J	BG1-SS03
Dieldrin	5/40	2.4 J	BG4-SS10	4.4 J	BG3-SS02
Endosulfan I	3/40	1.1 J	BG1-SS04	2.1 J	BG1-SS05/SS06
Endosulfan II	1/40	--	--	2.1 J	BG1-SS05
Endosulfan sulfate	6/40	1.6 J	BG4-SS06	3.7 J	BG1-SS06
Endrin	1/40	--	--	3.5 J	BG1-SS01
Endrin aldehyde	5/40	1.2 J	BG3-SS08	12	BG1-SS05
Endrin ketone	5/40	1.2 J	BG3-SS08	4.5 J	BG1-SS05
Heptachlor epoxide	1/40	--	--	1.8 J	BG3-SS05
alpha-BHC	4/40	0.72 J	BG1-SS05	1.6 J	BG1-SS01
alpha-Chlordane	15/40	0.65 J	BG3-SS06	4.7 J	BG1-SS03
beta-BHC	2/40	0.94 J	BG3-SS08	14 J	BG1-SS01
delta-BHC	2/40	0.65 J	BG2-SS07	5 P	BG1-SS04
gamma-BHC (Lindane)	2/40	1.4 J	BG1-SS04	3.3	BG1-SS01
gamma-Chlordane	6/40	0.55 J	BG2-SS07	7 J	BG1-SS03
PCBs					
No Detections					
Inorganics (mg/kg)					
Aluminum	79/79	235	BG1-SS07	19200	BGS28
Antimony	3/79	1 L	BG1-SS05	11 L	BGS35
Arsenic	62/79	0.094 J	BG3-SS03	63.9	BGS21
Barium	76/79	0.75 J	BG1-SS02	80.2	BGS28
Beryllium	33/79	0.23 J	BGS02/BGS06	1.1 J	BG1-SS03
Cadmium	3/79	1.2 J	BGS14	1.5	BGS30
Calcium	76/79	39.4 J	BGS12	33500	BG1-SS06
Chromium	78/79	1.8 J	BGS1-SS02	43.2	BG1-SS03
Cobalt	69/79	0.2 J	BG1-SS08	6.7 J	BGS18/BG4-SS10
Copper	56/79	0.41 J	BG1-SS02	24.4	BGS04
Iron	79/79	1440	BGS13	20700	BG4-SS01
Lead	79/79	1.1	BG1-SS02	136	BG1-SS03
Magnesium	75/79	61.5 J	BGS13	6770	BG1-SS03
Manganese	79/79	6.9	BG1-SS02	491	BGS03
Mercury	7/79	0.051 J	BG4-SS07	0.24 J	BG1-SS03
Nickel	65/79	0.37 J	BG1-SS02	14.2 J	BG1-SS03
Potassium	27/79	245 J	BG2-SS05	4560	BG1-SS03
Selenium	27/79	0.27 J	BGS04/BGS11	2.7 J	BG1-SS06
Silver	3/79	0.16 J	BG2-SS01	2.1 J	BGS21
Sodium	45/79	13.9 J	BGS12	21300	BG1-SS03
Vanadium	79/79	2.4 J	BG1-SS02	50.3	BG1-SS03
Zinc	79/79	3.2 KJ	BGS13	113	BG1-SS03

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

Table 4-6
Subsurface Soil Summary Statistics
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Chemical Name	Frequency of Detection	Minimum Detected Value	Location of Minimum Detected Value	Maximum Detected Value	Location of Maximum Detected Value
Volatile Organic Compounds (ug/kg)					
1,1,2,2-Tetrachloroethane	3/40	2 J	BG1-SB01	4 J	BG1-SB04
2-Butanone	2/40	4 J	BG1-SB06	5 J	BG1-SB04
Acetone	5/40	4 J	BG2-SB06	42	BG1-SB03
Carbon Disulfide	2/40	2 J	BG1-SB09	14 J	BG1-SB03
Isopropylbenzene	1/40	--	--	1 J	BG2-SB03
Methylene Chloride	1/40	--	--	1 J	BG3-SB02
Styrene	1/40	--	--	4 J	BG3-SB01
Toluene	1/40	--	--	3 J	BG1-SB09
Semivolatile Organic Compounds (ug/kg)					
Benzaldehyde	3/40	51 J	BG4-SB09	100 J	BG1-SB04
Phenol	2/40	53 J	BG4-SB06	340 J	BG4-SB05
bis(2-Ethylhexyl)phthalate	16/40	41 J	BG3-SB08	670	BG2-SB01
Pesticides (ug/kg)					
4,4'-DDD	1/40	--	--	3.1 J	BG3-SB02
4,4'-DDE	3/40	1.7 J	BG1-SB04	3.9 J	BG1-SB01
Dieldrin	3/40	1.9 J	BG2-SB03	2.5 J	BG1-SB05
Endosulfan I	3/40	0.96 J	BG1-SB06	2.3 J	BG1-SB03
Endosulfan sulfate	1/40	--	--	2.7 J	BG1-SB05
Endrin aldehyde	1/40	--	--	2.7 J	BG2-SB03
Endrin ketone	1/40	--	--	2.5 J	BG1-SB05
alpha-BHC	2/40	0.81 J	BG1-SB05	1.3 J	BG1-SB01
alpha-Chlordane	6/40	1.4 J	BG1-SB06	4.7	BG3-SB10
beta-BHC	3/40	0.74 J	BG2-SB04	0.99 J	BG2-SB09
delta-BHC	1/40	--	--	0.80 J	BG1-SB01
PCBs					
No Detections					
Inorganics (mg/kg)					
Aluminum	43/43	238	BG1-SB02	18400	BG1-SB03
Arsenic	22/43	0.36 J	BGGW08A	18.6	BG4-SB01
Barium	43/43	0.9 J	BG1-SB02	58	BG4-SB04
Beryllium	2/43	0.52 J	BGSB05	0.57 J	BGSB04
Calcium	43/43	56.4 J	BG3-SB08	162000	BG2-SB06
Chromium	42/43	2.4	BG1-SB02	37.5	BG1-SB03
Cobalt	39/43	0.2 J	BG1-SB07	7.3 J	BG2-SB05
Copper	25/43	0.71 J	BG3-SB02	9.6 J	BG1-SB03
Cyanide	1/43	--	--	2.7	BG1-SB03
Iron	43/43	1280	BG1-SB02	31700	BG4-SB01
Lead	43/43	2.6	BG1-SB02	83.7	BG1-SB08
Magnesium	43/43	115 J	BG3-SB06	4630	BG1-SB03
Manganese	43/43	2.9 J	BG1-SB02	284 J	BGSB04
Mercury	2/43	0.077	BG1-SB05	0.14	BG4-SB03
Nickel	40/43	0.51 J	BG1-SB02	11 J	BG1-SB03
Potassium	25/43	276 J	BG4-SB03	4240	BG1-SB03
Selenium	6/43	0.26 L	BGSB04	1.9 L	BG1-SB05
Sodium	10/43	22 J	BGGW08A	10400	BG1-SB09
Vanadium	43/43	2.1 J	BG1-SB02	53.8	BG1-SB03
Zinc	40/43	4.5 L	BG4-SB09	52.9	BG1-SB03

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

Table 4-7
Cornwallis Cave Aquifer Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKL-GW01	YBKL-GW02	YBKG-GW01	YBKG-GW03A	YBKG-GW05A	YBKG-GW06A	YBKG-GW07A	YBKG-GW07	YBKG-GW08A	YBKG-GW10	YBKG-GW11-3	YBKG-GW12-3	YBKG-GW13-3	YBKG-GW14-3	YBKG-GW15-3
Sample ID	YBKL-GW01-CC-0809*	YBKL-GW02-CC-0809	YBKG-GW01-CC-0809*	YBKG-GW03A-CC-0809	YBKG-GW05A-CC-0809	YBKG-GW06A-CC-0809	YBKG-GW07A-CC-0809	YBKG-GW07-CC-0809	YBKG-GW08A-CC-0809	YBKG-GW10-CC-0809	YBKG-GW11-3-CC-0809	YBKG-GW12-3-CC-0809	YBKG-GW13-3-CC-0809	YBKG-GW14-3-CC-0809	YBKG-GW15-3-CC-0809*
Sample Date	08/19/09	08/20/09	08/14/09	08/17/09	08/18/09	08/14/09	08/13/09	08/13/09	08/17/09	08/19/09	08/03/09	08/11/09	08/10/09	08/13/09	08/12/09
Chemical Name															
Volatile Organic Compounds (µg/L)															
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.29 J	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	0.35 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.23 J	1 U	1 U	1 U	0.25 B	1 U	0.67 J
Chloromethane	1 U	0.59 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	6.4	1 U	1 U	1 U	1 U	1 U
Methyl-tert-butyl ether (MTBE)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.26 J	1 U	1 U	0.6 B	1 U	1 U
Semivolatile Organic Compounds (µg/L)															
bis(2-Ethylhexyl)phthalate	1.2 J	9.4 U	9.5 U	9.6 U	9.5 U	10 U	1.1 J	10 U	9.6 U	9.4 U	9.5 U	11 U	10 U	9.8 U	9.5 U
Nitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	9.2 J	0.25 U	2.4 J	0.25 U	0.25 U
Pesticides (µg/L)															
alpha-Chlordane	0.047 UJ	0.047 U	0.048 U	0.049 U	0.048 U	0.052 U	0.013 J	0.052 U	0.048 U	0.049 U	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U
Heptachlor	0.052 J	0.047 U	0.048 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U
PCBs (µg/L)															
No Detections															
Explosives (µg/L)															
4-Amino-2,6-dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.31 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.45 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Total Inorganics (µg/L)															
Aluminum	12,300	200 U	613	94 K	2,080 K	577 K	247	8,140	1,070 K	2,650 K	200 U	292 K	200 U	200 U	4,220
Antimony	2.2 B	0.44 B	0.44 B	0.87 B	0.98 B	1.6 B	18.8 J	0.62 B	2.1 B	1.6 B	1.9 B	2.7 B	20 U	0.94 B	0.56 B
Arsenic	17.8	0.47 J	0.92 J	0.38 J	2.5	1.6 J	0.33 J	8.9	4.3	1.9 J	0.61 J	0.59 J	0.33 J	0.74 J	1.5 J
Barium	131 J	47 J	28.6 J	80.5 J	38.8 J	47 J	231	59 J	43.8 J	42.8 J	36.9 J	28 J	47.4 J	63.8 J	69.7 J
Beryllium	1.2 J	5 U	5 U	5 U	0.23 J	5 U	5 U	0.57 J	5 U	0.24 J	5 U	5 U	5 U	5 U	0.27 J
Cadmium	0.75 J	0.2 J	0.15 J	2 U	2 U	0.16 J	0.28 J	0.28 J	0.19 J	0.17 J	2 U	2 U	2 U	2 U	0.28 J
Calcium	3,490 J	174,000	114,000	98,800	69,900	34,400	117,000	175,000	113,000	95,900	75,100	89,400	100,000	91,600	126,000
Chromium	70.6	1.4 J	103	1 J	14	22.3	1.9 J	35.1	6.5 J	9 J	10 U	1.7 B	10 U	10 U	10.4
Cobalt	15.3 J	50 U	50 U	50 U	50 U	50 U	50 U	2.6 J	0.73 J	1.4 J	50 U	50 U	50 U	50 U	50 U
Copper	12 J	25 U	25 U	25 U	25 U	25 U	40.2 B	3.4 B	25 U	1.9 B	25 U	12.2 J	3.2 J	25 U	16 B
Iron	29,900	55 J	2,110	1,650 K	4,950 K	901 K	1,130	20,100	2,880 K	5,870 K	198 J	345 K	1,060 K	877	4,990
Lead	11.6	10 U	10 U	10 U	2.6 B	3.1 B	3.2 B	6.9 B	2.8 B	4.5 B	0.51 J	10 U	2 B	10 U	6.2 B
Magnesium	1,550 J	1,710 J	1,440 J	2,130 J	1,470 J	709 J	3,240 J	4,180 J	1,970 J	3,870 J	1,620 J	1,410 J	2,180 J	1,550 J	2,270 J
Manganese	55.8	15 U	25.4	36.6	39.1	7.4 B	36.3	104	57	126	23.8	2.4 B	46.1	35.4	31.9
Nickel	38.3 J	40 U	45.6	40 U	40 U	9.9 J	40 U	9.3 J	2.7 J	3.6 J	40 U	40 U	40 U	40 U	4 J
Potassium	3,210 J	387 J	1,160 J	1,510 J	1,360 J	1,980 J	19,000	3,100 J	1,460 J	1,940 J	880 J	1,400 J	1,100 J	1,200 J	1,830 J
Sodium	4,060 J	8,630	8,020	5,850	5,060	5,280	23,300	5,720	7,560	35,800	5,860	4,630 J	8,290	24,500	5,770
Vanadium	39.2 J	1.7 J	2.1 J	50 U	7.7 J	3.3 J	50 U	32.4 J	4.4 J	7 J	50 U	50 U	50 U	50 U	8.6 J
Zinc	85.4 B	2.3 B	11.4 B	2.8 B	13.4 B	7.2 B	34	37.2	7.8 B	19.3 B	3.7 B	2.4 J	3.9 J	3.9 B	18.9 B
Dissolved Inorganics (µg/L)															
Aluminum	62.8 J	200 U	200 U	200 U	200 U	82.4 K	200 U	86.8 J	200 U	200 U	200 U	200 U	200 U	200 U	100 J
Antimony	0.8 B	1 B	0.45 B	0.86 B	0.91 B	1.4 B	9.7 J	0.33 B	1.4 B	1.2 B	0.87 B	2.1 B	20 U	0.47 B	0.38 B
Arsenic	0.17 J	0.5 J	0.3 J	0.31 J	0.41 J	1.3 J	0.28 J	0.49 J	2.5	0.45 J	0.58 J	0.46 J	0.27 J	0.56 J	0.91 J
Barium	109 J	43.1 J	23.8 J	82.4 J	25.9 J	55.4 J	101 J	29.2 J	39.9 J	33.8 J	33.4 J	26 J	50.3 J	60.4 J	53.4 J
Cadmium	0.38 J	0.19 J	2 U	2 U	2 U	2 U	0.15 J	2 U	2 U	0.16 J	2 U	2 U	2 U	2 U	0.16 J
Calcium	3,750 J	175,000	87,200	96,400	55,100	36,500	85,600	123,000	81,400	91,600	74,100	88,000	102,000	90,600	120,000
Chromium	1.2 J	1.1 J	3.1 J	10 U	5.8 J	10 U	10 U	1.2 J	10 U	0.9 J	10 U	1.1 J	10 U	10 U	10 U
Cobalt	8.4 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	0.7 J	50 U	50 U	50 U	50 U
Iron	301	200 U	200 U	1,510 K	200 U	200 U	260	334	192 K	154 K	118 J	200 U	899 K	468	207
Lead	1.9 J	10 U	1.5 B	2.4 B	10 U	10 U	10 U	10 U	10 U	2.5 B	2 U	2.1 B	10 U	10 U	10 U
Magnesium	476 J	1,740 J	1,060 J	2,170 J	944 J	729 J	2,930 J	2,200 J	1,560 J	3,460 J	1,620 J	1,370 J	2,190 J	1,600 J	1,570 J
Manganese	34.9	15 U	14.7 J	32.4	2.2 J	1.7 J	29.9	6.4 J	38.3	77.2	16.4	15 U	44.8	33.9	19.5
Nickel	19.1 J	40 U	13.8 J	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
Potassium	951 J	452 J	876 J	1,450 J	775 J	1,940 J	17,800	951 J	1,160 J	1,300 J	922 J	1,310 J	1,130 J	1,230 J	1,070 J
Sodium	4,220 J	8,310	7,740	5,970	4,660 J	5,560	22,500	5,540	7,900	31,700	5,800	4,610 J	8,350	24,200	5,690
Vanadium	50 U	1.3 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

Shading indicates detections

* Duplicate sample collected. Highest detected value reported.

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

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

µg/L - Micrograms per liter

Table 4-8
Yorktown-Eastover Aquifer Detections
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKG-GW01A	YBKG-GW09A	YBKG-GW10A	YBKG-GW11-1	YBKG-GW11-2	YBKG-GW12-1	YBKG-GW12-2	YBKG-GW13-1	YBKG-GW13-2	YBKG-GW14-1	YBKG-GW14-2	YBKG-GW15-1	YBKG-GW15-2
Sample ID	YBKG-GW01A-YE-0809	YBKG-GW09A-YE-0809	YBKG-GW10A-YE-0809	YBKG-GW11-1-YE-0809	YBKG-GW11-2-YE-0809	YBKG-GW12-1-YE-0809	YBKG-GW12-2-YE-0809	YBKG-GW13-1-YE-0809	YBKG-GW13-2-YE-0809	YBKG-GW14-1-YE-0809*	YBKG-GW14-2-YE-0809	YBKG-GW15-1-YE-0809	YBKG-GW15-2-YE-0809
Sample Date	08/14/09	08/22/09	08/24/09	08/10/09	08/10/09	08/11/09	08/11/09	08/08/09	08/08/09	08/12/09	08/13/09	08/12/09	08/12/09
Chemical Name													
Volatile Organic Compounds (µg/L)													
Carbon disulfide	0.46 J	1 U	0.26 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.23 J	1 U
Chloroform	3.8	0.23 J	0.31 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.39 J	1 U	1 U	1 U	1 U	1 U
Trichloroethene	0.24 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Semivolatile Organic Compounds (µg/L)													
Caprolactam	10 U	9.4 U	0.85 J	0.96 B	0.71 B	10 U	10 U	9.6 U	9.4 U	11 U	10 U	9.8 U	11 U
Phenol	10 U	9.4 U	1.5 J	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U	9.8 U	11 U
Pesticides (µg/L)													
No Detections													
PCBs (µg/L)													
No Detections													
Explosives (µg/L)													
No Detections													
Total Inorganics (µg/L)													
Aluminum	30,700 K	1,640	155 J	447 K	141 K	162 K	200 U	203 K	200 U	122 J	407	208	200 U
Arsenic	15.4	7.8	0.92 J	0.72 J	0.57 J	0.39 J	0.8 J	0.91 J	0.48 J	0.93 J	1.4 J	1.7 J	0.31 J
Barium	178 J	21.5 J	35.6 J	104 J	52.5 J	27.4 J	34.5 J	31.4 J	41.7 J	97.6 J	103 J	35.8 J	59.5 J
Beryllium	2.4 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.27 J	5 U	5 U	5 U
Cadmium	0.72 J	0.27 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.17 J	2 U	0.18 J
Calcium	146,000	35,400	56,500	45,800	65,700	39,400	58,100	42,500	70,800	74,100	94,800	44,100	92,900
Chromium	96.8	23.5	10.3	2.7 B	12.7	1.2 B	10 U	1.9 B	10 U	0.9 J	8.6 J	2.8 J	10 U
Cobalt	16.9 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Copper	15.7 B	25 U	25 U	25 U	1.9 J	25 U	25 U	25 U	25 U	117	25 U	3.5 B	25 U
Iron	62,100 K	2,810	402	495 K	415 K	215 K	114 K	753 K	294 K	292	1,380	305	118 J
Lead	21.3	10 U	10 U	2.6 B	1.9 B	2 B	4.9 B	2.2 B	2.2 B	3.1 B	3.4 B	10 U	1.6 B
Magnesium	6,280	963 J	3,290 J	8,770	3,270 J	6,940	2,330 J	5,200	1,850 J	7,080	2,000 J	7,780	4,320 J
Manganese	279	18.7	15.5 B	13.4 J	40.6	15.8	18.6	28	27.1	36.7	29.1	18.8	77.2
Mercury	0.2 U	0.2 U	0.2 U	0.081 L	0.2 UL	0.2 UL	0.2 UL	0.078 L	0.2 UL	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	43.9	2.2 J	40 U	40 U	40 U	40 U	40 U	40 U	40 U	2.4 J	4.2 J	40 U	40 U
Potassium	5,970	3,680 J	18,200	7,030	1,800 J	8,680	2,380 J	6,280	2,130 J	7,140	1,970 J	9,260	1,570 J
Sodium	5,740	11,600	27,800	35,900	8,900	52,600	7,120	39,300	9,640	32,500	14,600	84,200	6,460
Vanadium	83.9	8.8 J	1.2 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	1.5 J	1.3 J	50 U
Zinc	146	8.2 B	3 B	4.9 B	4.3 J	3 J	2.8 J	4 J	2.4 J	12.8 B	6.8 B	3.6 B	4.1 B
Dissolved Inorganics (µg/L)													
Aluminum	869 K	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Arsenic	1.1 J	6.2	0.72 J	0.7 J	0.49 J	0.36 J	0.68 J	0.77 J	0.43 J	0.88 J	0.71 J	1.6 J	0.39 J
Barium	44 J	16.3 J	33.9 J	94.7 J	48.6 J	23.2 J	31.9 J	28.2 J	42.5 J	94.7 J	97.5 J	39.1 J	83.2 J
Cadmium	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.16 J	2 U	0.17 J	0.17 J
Calcium	61,500	26,100	50,800	45,200	65,300	37,900	58,700	41,800	71,900	81,800	93,800	44,200	92,100
Chromium	3.6 J	27.8	2.2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1.3 J
Copper	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	3 J	25 U	25 U	25 U
Iron	1,670 K	200 U	65 J	200 U	200 U	200 U	200 U	35.7 K	130 K	200 U	163 J	31.6 J	234
Lead	2.5 B	10 U	1.7 J	10 U	10 U	10 U	1.6 B	10 U	10 U	10 U	10 U	10 U	10 U
Magnesium	1,280 J	438 B	3,210 J	8,380	3,210 J	6,700	2,370 J	4,950 J	1,850 J	7,060	1,890 J	7,870	4,210 J
Manganese	8.6 J	1.4 B	12.5 B	10.7 J	34.7	6.1 J	9.3 J	22	24.9	26.2	19.6	17	79.7
Mercury	0.2 U	0.2 U	0.2 U	0.072 L	0.2 UL	0.2 UL	0.2 UL	0.1 L	0.14 L	0.2 U	0.2 U	0.2 U	0.2 U
Potassium	1,140 J	4,280 J	19,100	6,670	1,690 J	8,420	2,460 J	6,440	2,090 J	7,250	1,880 J	9,360	1,740 J
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	7.7 J	9.1 J	35 U	35 U	35 U
Sodium	5,240	12,200	28,000	33,400	8,940	51,100	7,200	39,400	9,710	36,000	15,300	85,100	6,760
Vanadium	2.5 J	4.3 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U

Notes:

Shading indicates detections

* Duplicate sample collected. Highest detected value reported.

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

U - The material was analyzed for, but not detected

UL - Analyte not detected, quantitation limit is probably higher

Table 4-9
Cornwallis Cave Groundwater Summary Statistics
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Chemical Name	Frequency of Detection	Minimum Detected Value	Location of Minimum Detected Value	Maximum Detected Value	Location of Maximum Detected Value
Volatile Organic Compounds (µg/L)					
1,1-Dichloroethane	1/15	--	--	0.29 J	YBKG-GW10
Carbon disulfide	3/15	0.23 J	YBKG-GW08A	0.67 J	YBKG-GW15-3
Chloromethane	1/15	--	--	0.59 J	YBKL-GW02
cis-1,2-Dichloroethene	1/15	--	--	6.4	YBKG-GW10
Methyl-tert-butyl ether (MTBE)	1/15	--	--	0.26 J	YBKG-GW10
Semivolatile Organic Compounds (µg/L)					
bis(2-Ethylhexyl)phthalate	2/15	1.1 J	YBKG-GW07A	1.2 J	YBKL-GW01
Nitrobenzene	2/15	2.4 J	YBKG-GW13-3	9.2 J	YBKG-GW11-3
Pesticides (µg/L)					
alpha-Chlordane	1/15	--	--	0.013 J	YBKG-GW07A
Heptachlor	1/15	--	--	0.052 J	YBKL-GW01
PCBs (µg/L)					
No Detections					
Explosives (µg/L)					
4-Amino-2,6-dinitrotoluene	1/15	--	--	0.31 J	YBKG-GW07A
RDX	1/15	--	--	0.45 J	YBKG-GW07A
Total Inorganics (µg/L)					
Aluminum	11/15	94 K	YBKG-GW03A	12300	YBKL-GW01
Antimony	1/15	--	--	18.8 J	YBKG-GW07A
Arsenic	15/15	0.33 J	YBKG-GW07A/GW13-3	17.8	YBKL-GW01
Barium	15/15	28 J	YBKG-GW12-3	231	YBKG-GW07A
Beryllium	5/15	0.23 J	YBKG-GW05A	1.2 J	YBKL-GW01
Cadmium	9/15	0.15 J	YBKG-GW01	0.75 J	YBKL-GW01
Calcium	15/15	3490	YBKL-GW01	175000	YBKG-GW07
Chromium	11/15	1 J	YBKG-GW03A	103	YBKG-GW01
Cobalt	4/15	0.73 J	YBKG-GW08A	15.3 J	YBKL-GW01
Copper	3/15	3.2 J	YBKG-GW13-3	12.2 J	YBKG-GW12-3
Iron	15/15	55 J	YBKL-GW02	29900	YBKL-GW01
Lead	2/15	0.51 J	YBKG-GW11-3	11.6	YBKL-GW01
Magnesium	15/15	709 J	YBKG-GW06A	4180 J	YBKG-GW07
Manganese	12/15	23.8	YBKG-GW11-3	126	YBKG-GW10
Nickel	7/15	2.7 J	YBKG-GW08A	45.6	YBKG-GW01
Potassium	15/15	387 J	YBKL-GW02	19000	YBKG-GW07A
Sodium	15/15	4060 J	YBKL-GW01	35800	YBKG-GW10
Vanadium	9/15	1.7 J	YBKL-GW02	39.2 J	YBKL-GW01
Zinc	4/15	2.4 J	YBKG-GW12-3	37.2	YBKG-GW07
Dissolved Inorganics (µg/L)					
Aluminum	4/15	62.8 J	YBKL-GW01	100 J	YBKG-GW15-3
Antimony	1/15	--	--	9.7 J	YBKG-GW07A
Arsenic	15/15	0.17 J	YBKL-GW01	2.5	YBKG-GW08A
Barium	15/15	23.8 J	YBKG-GW01	109 J	YBKL-GW01
Cadmium	5/15	0.15 J	YBKG-GW07A	0.38 J	YBKL-GW01
Calcium	15/15	3750 J	YBKL-GW01	175000	YBKL-GW02
Chromium	7/15	0.9 J	YBKG-GW10	5.8 J	YBKG-GW05A
Cobalt	2/15	0.7 J	YBKG-GW11-3	8.4 J	YBKL-GW01
Iron	10/15	118 J	YBKG-GW11-3	1510 K	YBKG-GW03A
Lead	1/15	--	--	1.9 J	YBKL-GW01
Magnesium	15/15	476 J	YBKL-GW01	3460 J	YBKG-GW10
Manganese	13/15	1.7 J	YBKG-GW06A	77.2	YBKG-GW10
Nickel	2/15	13.8 J	YBKG-GW01	19.1 J	YBKL-GW01
Potassium	15/15	452 J	YBKL-GW02	17800	YBKG-GW07A
Sodium	15/15	4220 J	YBKL-GW01	31700	YBKG-GW10
Vanadium	1/15	--	--	1.3 J	YBKL-GW02

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

Table 4-10
Yorktown-Eastover Aquifer Groundwater Summary Statistics
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Chemical Name	Frequency of Detection	Minimum Detected Value	Location of Minimum Detected Value	Maximum Detected Value	Location of Maximum Detected Value
Volatile Organic Compounds (µg/L)					
Carbon disulfide	3/13	0.23 J	YBKG-GW15-1	0.46 J	YBKG-GW01A
Chloroform	3/13	0.23 J	YBKG-GW09A	3.8	YBKG-GW01A
Toluene	1/13	--	--	0.39 J	YBKG-GW13-1
Trichloroethene	1/13	--	--	0.24 J	YBKG-GW01A
Semivolatile Organic Compounds (µg/L)					
Caprolactam	1/13	--	--	0.85 J	YBKG-GW10A
Phenol	1/13	--	--	1.5 J	YBKG-GW10A
Pesticides (µg/L)					
No Detections					
PCBs (µg/L)					
No Detections					
Explosives (µg/L)					
No Detections					
Total Inorganics (µg/L)					
Aluminum	10/13	141 K	YBKG-GW11-2	30700	YBKG-GW01A
Arsenic	13/13	0.31 J	YBKG-GW15-2	15.4	YBKG-GW01A
Barium	13/13	21.5 J	YBKG-GW09A	178 J	YBKG-GW01A
Beryllium	2/13	0.27 J	YBKG-GW14-1	2.4 J	YBKG-GW01A
Cadmium	4/13	0.17 J	YBKG-GW14-1	0.72 J	YBKG-GW01A
Calcium	13/13	35400	YBKG-GW09A	146000	YBKG-GW01A
Chromium	7/13	0.9 J	YBKG-GW14-1	96.8	YBKG-GW01A
Cobalt	1/13	--	--	16.9 J	YBKG-GW01A
Copper	2/13	1.9 J	YBKG-GW11-2	117	YBKG-GW14-1
Iron	13/13	114 K	YBKG-GW12-2	62100 K	YBKG-GW01A
Lead	1/13	--	--	21.3	YBKG-GW01A
Magnesium	13/13	963 J	YBKG-GW09A	8770	YBKG-GW11-1
Manganese	12/13	13.4 J	YBKG-GW11-1	279	YBKG-GW01A
Mercury	2/13	0.078 L	YBKG-GW13-1	0.081 L	YBKG-GW11-1
Nickel	4/13	2.2 J	YBKG-GW09A	43.9	YBKG-GW01A
Potassium	13/13	1570 J	YBKG-GW15-2	18200	YBKG-GW10A
Sodium	13/13	5740	YBKG-GW01A	84200	YBKG-GW15-1
Vanadium	5/13	1.2 J	YBKG-GW10A	83.9	YBKG-GW01A
Zinc	6/13	2.4 J	YBKG-GW13-2	146	YBKG-GW01A
Dissolved Inorganics (µg/L)					
Aluminum	1/13	--	--	869 K	YBKG-GW01A
Arsenic	13/13	0.36 J	YBKG-GW12-1	6.2	YBKG-GW09A
Barium	13/13	16.3 J	YBKG-GW09A	97.5 J	YBKG-GW14-2
Cadmium	3/13	0.16 J	YBKG-GW14-1	0.17 J	YBKG-GW15-1/GW15-2
Calcium	13/13	26100	YBKG-GW09A	93800	YBKG-GW14-2
Chromium	4/13	1.3 J	YBKG-GW15-2	27.8	YBKG-GW09A
Copper	1/13	--	--	3 J	YBKG-GW14-1
Iron	7/13	31.6 J	YBKG-GW15-1	1670 K	YBKG-GW01A
Lead	1/13	--	--	1.7 J	YBKG-GW10A
Magnesium	12/13	1280 J	YBKG-GW01A	8380	YBKG-GW11-1
Manganese	11/13	6.1 J	YBKG-GW12-1	79.7	YBKG-GW15-2
Mercury	3/13	0.072 L	YBKG-GW11-1	0.14 L	YBKG-GW13-2
Potassium	13/13	1140 J	YBKG-GW01A	19100	YBKG-GW10A
Selenium	2/13	7.7 J	YBKG-GW13-2	9.1 J	YBKG-GW14-1
Sodium	13/13	5240	YBKG-GW01A	85100	YBKG-GW15-1
Vanadium	2/13	2.5 J	YBKG-GW01A	4.3 J	YBKG-GW09A

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

TABLE 4-11
Background UTLs and Central Tendancy Statistics
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

	Surface Soil						Subsurface Soil					
Constituent	**95% UTL (mg/kg)**	**Frequency of Detection**	**Minimum Detected Value (mg/kg)**	**Maximum Detected Value (mg/kg)**	**Location of Maximum Detected Value**	**Mean Value of Detections (mg/kg)**	**95% UTL (mg/kg)**	**Frequency of Detects**	**Minimum Detected Value (mg/kg)**	**Maximum Detected Value (mg/kg)**	**Location of Maximum Detected Value**	**Mean Value of Detects (mg/kg)**
Total Inorganics												
Aluminum	12200	72/72	235	12900	BGS20	4780	13000	41/41	238	12600	BG2-SB04-01	6140
Antimony	NE	3/73	1	11	BGS35	7.07	NE	ND	--	--	--	--
Arsenic	6.36	54/71	0.094	6	BG1-SS09-00	1.99	5.54	17/37	0.7	6.8	BG2-SB06-01	3.38
Barium	52.9	69/72	0.75	62	BGS04	23.9	84.5	42/42	0.9	58	BG4-SB04-01	27.1
Beryllium	0.587	30/73	0.23	0.79	BG4-SS10-00	0.433	NE	2/42	0.49	0.52	BGSB05-01	0.505
Cadmium	NE	3/75	1.2	1.5	BGS30	1.33	NE	ND	--	--	--	--
Calcium	2290	68/70	45.8	2940	BGS20	643	2380	40/40	56.4	1810	BG2-SB01-01	502
Chromium	18.2	72/73	1.8	18.3	BGS34	6.96	33.7	40/41	2.4	26.4	BG2-SB02-01	10.4
Cobalt	9.93	66/75	0.2	6.7	BG4-SS10-00	2.4	5.18	33/39	0.2	6	BG4-SB10-01	2.27
Copper	4.25	50/71	0.41	5.3	BGS28	2.27	3.17	21/39	0.71	3.2	BG4-SB01-01	1.85
Cyanide	NE	ND	--	--	--	--	NE	1/42	2.7	2.7	BG1-SB03-01	2.7
Iron	19900	75/75	1470	20300	BG4-SS01-00	6430	32000	42/42	1280	30000	BG2-SB01-01	10200
Lead	17.4	70/70	1.1	22.7	BGS04	10.2	8.79	38/38	2.6	8.3	BG2-SB10-01	5.67
Magnesium	1070	67/71	112	1200	BG1-SS05-00	394	1120	37/37	115	1350	BG1-SB06-01	433
Manganese	324	72/72	6.9	340	BGS20	96.1	176	39/39	2.9	154	BG4-SB09-01	47.2
Mercury	0.111	7/75	0.051	0.24	BG1-SS03-00	0.119	NE	2/42	0.067	0.14	BG4-SB03-01	0.104
Nickel	9.52	63/74	0.37	11.9	BGS20	4.6	17.6	39/42	0.51	11	BG1-SB03-01	3.9
Potassium	708	22/70	245	911	BG1-SS06-00	560	901	20/37	276	1190	BG1-SB05-01	519
Selenium	0.51	22/70	0.27	0.69	BG2-SS02-00	0.384	NE	3/39	0.26	0.64	BG4-SB10-01	0.427
Silver	NE	3/75	0.16	2.1	BGS21	1.09	NE	1/42	1.1	1.1	BGSB05-01	1.1
Sodium	521	36/70	17.4	1960	BG1-SS05-00	93.3	811	4/37	58.5	1560	BG1-SB04-01	754
Vanadium	27.9	72/72	2.4	29.8	BGS27	12	48.3	41/41	2.1	37.8	BG1-SB09-01	16.2
Zinc	26.5	70/70	3.6	30	BG1-SS06-00	12.1	28	34/37	4.5	20.9	BG1-SB02-01	10.7
Dissolved Inorganics												
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	--	--	--	--	--	--	--	--	--	--	--	--
Copper	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	--	--	--	--	--	--	--	--	--	--	--	--

[1] With the exception of calcium, iron, magnesium, potassium, and sodium the frequency of detections represents a combination of the Corwallis Cave and Yorktown-Eastover Aquifers
ND - constituent not detected
NE - backgroung UTL not established

TABLE 4-11
Background UTLs and Central Tendancy Statistics
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

	Cornwallis Cave Aquifer						Yorktown-Eastover Aquifer					
Constituent	**95% UTL (ug/L)**	**Frequency of Detects[1]**	**Minimum Detected Value (ug/L)**	**Maximum Detected Value (ug/L)**	**Location of Maximum Detected Value**	**Mean Value of Detects (ug/L)**	**95% UTL (ug/L)**	**Frequency of Detects[1]**	**Minimum Detected Value (ug/L)**	**Maximum Detected Value (ug/L)**	**Location of Maximum Detected Value**	**Mean Value of Detects (ug/L)**
Total Inorganics												
Aluminum	2230	15/21	94	1640	YBKG-GW09A-YE	314	2230	15/21	94	1640	YBKG-GW09A-YE	314
Antimony	NE	1/26	18.8	18.8	YBKG-GW07A-CC	2.05	NE	1/26	18.8	18.8	YBKG-GW07A-CC	2.05
Arsenic	2.28	21/21	0.31	1.9	YBKG-GW10-CC	0.817	2.28	21/21	0.31	1.9	YBKG-GW10-CC	0.817
Barium	118	24/24	21.5	104	YBKG-GW11-1-YE	50.9	118	24/24	21.5	104	YBKG-GW11-1-YE	50.9
Beryllium	2.45	6/26	0.23	2.4	YBKG-GW01A-YE	2.08	2.45	6/26	0.23	2.4	YBKG-GW01A-YE	2.08
Cadmium	0.605	11/26	0.15	0.72	YBKG-GW01A-YE	0.683	0.605	11/26	0.15	0.72	YBKG-GW01A-YE	0.683
Calcium	158000	12/12	34400	124000	YBKG-GW15-3-CC	92200	169000	13/13	35400	146000	YBKG-GW01A-YE	66600
Chromium	15.1	11/21	0.9	14	YBKG-GW05A-CC	5.22	15.1	11/21	0.9	14	YBKG-GW05A-CC	5.22
Cobalt	20.6	4/26	0.73	16.9	YBKG-GW01A-YE	22	20.6	4/26	0.73	16.9	YBKG-GW01A-YE	22
Copper	NE	3/25	1.9	12.2	YBKG-GW12-3-CC	10.3	NE	3/25	1.9	12.2	YBKG-GW12-3-CC	10.3
Cyanide	NE	ND	--	--	--	--	NE	ND	--	--	--	--
Iron	3590	10/10	198	2880	YBKG-GW08A-CC	1230	894	10/10	114	753	YBKG-GW13-1-YE	340
Lead	NE	2/26	0.51	21.3	YBKG-GW01A-YE	3.24	NE	2/26	0.51	21.3	YBKG-GW01A-YE	3.24
Magnesium	3600	11/11	709	3240	YBKG-GW07A-CC	1750	11500	13/13	963	8770	YBKG-GW11-1-YE	4620
Manganese	57.9	19/22	13.4	57	YBKG-GW08A-CC	26.5	57.9	19/22	13.4	57	YBKG-GW08A-CC	26.5
Mercury	NE	2/26	0.078	0.081	YBKG-GW11-1-YE	0.0984	NE	2/26	0.078	0.081	YBKG-GW11-1-YE	0.0984
Nickel	11.4	8/24	2.2	9.9	YBKG-GW06A-CC	14.9	11.4	8/24	2.2	9.9	YBKG-GW06A-CC	14.9
Potassium	3490	12/12	880	3100	YBKG-GW07-CC	1510	12700	12/12	1570	9260	YBKG-GW15-1-YE	4820
Selenium	NE	ND	--	--	--	--	NE	ND	--	--	--	--
Silver	NE	ND	--	--	--	--	NE	ND	--	--	--	--
Sodium	9920	10/10	4630	8290	YBKG-GW13-3-CC	6200	64500	12/12	5740	52600	YBKG-GW12-1-YE	21000
Vanadium	26.2	11/25	1.2	32.4	YBKG-GW07-CC	16.9	26.2	11/25	1.2	32.4	YBKG-GW07-CC	16.9
Zinc	4.52	7/23	2.4	4.3	YBKG-GW11-2-YE	3.86	4.52	7/23	2.4	4.3	YBKG-GW11-2-YE	3.86
Dissolved Inorganics												
Aluminum	NE	3/25	82.4	100	YBKG-GW15-3-CC	98.8	NE	3/25	82.4	100	YBKG-GW15-3-CC	98.8
Antimony	NE	1/26	9.7	9.7	YBKG-GW07A-CC	1.95	NE	1/26	9.7	9.7	YBKG-GW07A-CC	1.95
Arsenic	1.37	23/23	0.27	1.3	YBKG-GW06A-CC	0.588	1.37	23/23	0.27	1.3	YBKG-GW06A-CC	0.588
Barium	127	26/26	16.3	101	YBKG-GW07A-CC	49.4	127	26/26	16.3	101	YBKG-GW07A-CC	49.4
Beryllium	NE	ND	--	--	--	--	NE	ND	--	--	--	--
Cadmium	0.177	6/26	0.15	0.17	YBKG-GW15-1-YE	0.807	0.177	6/26	0.15	0.17	YBKG-GW15-1-YE	0.807
Calcium	148000	13/13	36500	123000	YBKG-GW07-CC	86800	113000	13/13	26100	93800	YBKG-GW14-2-YE	58500
Chromium	6.04	8/25	0.9	5.8	YBKG-GW05A-CC	4.17	6.04	8/25	0.9	5.8	YBKG-GW05A-CC	4.17
Cobalt	NE	1/26	0.7	0.7	YBKG-GW11-3-CC	24.1	NE	1/26	0.7	0.7	YBKG-GW11-3-CC	24.1
Copper	NE	1/26	3	3	YBKG-GW14-1-YE	12.1	NE	1/26	3	3	YBKG-GW14-1-YE	12.1
Cyanide	NE	ND	--	--	--	--	NE	ND	--	--	--	--
Iron	631	7/11	118	468	YBKG-GW14-3-CC	248	275	6/12	31.6	234	YBKG-GW15-2-YE	110
Lead	NE	1/26	1.7	1.7	YBKG-GW10A-YE	3.97	NE	1/26	1.7	1.7	YBKG-GW10A-YE	3.97
Magnesium	3880	13/13	729	3460	YBKG-GW10-CC	1790	11200	12/13	1280	8380	YBKG-GW11-1-YE	4400
Manganese	49.5	21/24	1.7	44.8	YBKG-GW13-3-CC	17.5	49.5	21/24	1.7	44.8	YBKG-GW13-3-CC	17.5
Mercury	NE	2/25	0.072	0.1	YBKG-GW13-1-YE	0.0989	NE	2/25	0.072	0.1	YBKG-GW13-1-YE	0.0989
Nickel	NE	1/26	12.2	12.2	YBKG-GW01-CC	19.7	NE	1/26	12.2	12.2	YBKG-GW01-CC	19.7
Potassium	1710	11/11	775	1450	YBKG-GW03A-CC	1090	12600	12/12	1140	9360	YBKG-GW15-1-YE	4430
Selenium	NE	2/26	7.7	9.1	YBKG-GW14-1-YE	16.8	NE	2/26	7.7	9.1	YBKG-GW14-1-YE	16.8
Silver	NE	ND	--	--	--	--	NE	ND	--	--	--	--
Sodium	10000	10/10	4610	8350	YBKG-GW13-3-CC	6160	62800	12/12	5240	51100	YBKG-GW12-1-YE	20800
Vanadium	NE	2/26	2.5	4.3	YBKG-GW09A-YE	23.3	NE	2/26	2.5	4.3	YBKG-GW09A-YE	23.3
Zinc	NE	ND	--	--	--	--	NE	ND	--	--	--	--

[1] With the exception of calcium, iron, magne
ND - constituent not detected
NE - backgroung UTL not established

SECTION 5

References

Baker Environmental, Inc. (Baker). 1995. *Final Summary of Background Constituent Concentrations and Characterization of Biotic Community from the York River Drainage Basin, Naval Weapons Station Yorktown, Yorktown Virginia.* July.

Baker. 2003. *Final Background Investigation Naval Weapons Station Yorktown, Yorktown, Virginia, Cheatham Annex Site, Williamsburg, Virginia.* September.

Brockman et al. 1997. *Geohydrology of the Shallow Aquifer System, Naval Weapons Station Yorktown, Yorktown, Virginia.* U.S. Geological Survey Water-Resources Investigations Report 97-4188.

CH2M HILL. 2009. *Final Background Study Work Plan. Naval Weapons Station Yorktown, Yorktown, Virginia and Cheatham Annex, Williamsburg, Virginia*. July.

Naval Facilities Engineering Command (NAVFAC). 1998. *Procedural Guidance for Statistically Analyzing Environmental Background Data.*

Department of the Navy (Navy). 2000. *Navy Interim Final Policy on the Use of Background Chemical Levels*

Navy. 2002. *Guidance for Environmental Background Analysis, Volume I: Soil.*

Navy. 2003. *Guidance for Environmental Background Analysis, Volume II: Sediment.*

Navy. 2004. *Guidance for Environmental Background Analysis, Volume III: Groundwater*.

Siudyla, E. A. et al. 1981. *Groundwater Resources of the Four Cities Area, Virginia.* State Water Control Board.

United States Department of Environmental Protection (USEPA). 1993. *Region III Modifications to Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*.

USEPA. 1994. *Region III Modifications to National Functional Guidelines for Organic Data Review Multi-media, Multi-concentration*.

USEPA. 1996. *Low Flow (Minimal Drawdown) Groundwater Sampling Procedures.* April.

USEPA. 2002. *Role of Background in the CERCLA Cleanup Program.* Office of Solid Waste and Emergency Response and Office of Emergency Remedial Response 9285.6-07P. April.

USEPA. 2009. *ProUCL Version 4.00.04 Technical Guide (Draft),* Office of Research and Development.

Virginia Polytechnic Institute and State University (VPI). 1982. *Soil Survey Report, Naval Weapons Station, Yorktown, Virginia.* Research Division, Agronomy Department.

VPISU. 1985. *Soil Survey Report, Cheatham Annex.* Research Division, Agronomy Department.

Appendix A
Raw Analytical Data

Table A-1
CAX Surface Soil Inorganic Raw Anlaytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG1-SS01-00	BG1-SS02-00	BG1-SS03-00	BG1-SS04-00	BG1-SS05-00	BG1-SS05-00D	BG1-SS06-00	BG1-SS07-00	BG1-SS08-00	BG1-SS09-00	BG1-SS10-00	BG2-SS01-00	BG2-SS01-00D	BG2-SS02-00	BG2-SS03-00	BG2-SS04-00
Date sampled	08-06-2001	07-25-2001	07-25-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	07-25-2001	07-25-2001	07-25-2001	07-25-2001	07-27-2001	07-27-2001	07-24-2001	07-25-2001	07-26-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Inorganics (mg/kg)																
Aluminum	3700	265	16500	5640	3120	2800	3570	235	476	12400	2320	2230	2330	2930	3640	2370
Antimony	.42 UL	.36 UL	1.4 UL	.58 UL	.66 UL	1 L	.93 UL	0.33 UL	.36 UL	1.2 UL	.54 UL	.41 B	.37 U	.35 UL	.37 UL	.35 U
Arsenic	2.6 B	.25 U	9.9	4.7	3.1 B	2.6 B	8.3	0.23 U	.25 U	6 J	4.2	.28 U	.56 B	.63 J	.8 J	.61 B
Barium	21 J	.75 J	31.6 J	9.1 J	13.4 J	11.5 J	25.8 J	5.1 J	2.2 J	21.5 J	7.1 J	28.3 J	27.9 J	24.6 J	28.5 J	12.2 J
Beryllium	.38 J	.085 U	1.1 J	.39 J	.41 J	.31 J	.34 J	0.082 B	.11 B	.72 J	.22 B	.42 B	.33 B	.38 B	.4 B	.13 B
Cadmium	.1 U	.085 U	.32 U	.14 U	.15 U	.14 U	.22 U	0.077 U	.08 U	.27 U	.13 U	.094 U	.086 U	.083 U	.086 U	.083 U
Calcium	867 J	1380	2300 J	2950	4220	3500	33500	149 J	1640	2280 J	470 J	830 J	746 B	598 J	321 J	112 J
Chromium	8	1.8 J	43.2	13.5	9.4	8.2	9.9	7.7	3.7	26.8	8.9	2.9	3 B	5.5	3.6	2.9
Cobalt	1.6 J	.15 U	3.8 J	1.4 J	1.6 J	1.5 J	2.2 J	0.13 U	.2 J	2.4 J	.35 J	1.3 J	1.2 B	1.2 J	2.3 J	1 J
Copper	1.7 J	.41 J	22.1	4 J	2.6 J	2.7 J	8.8 J	0.43 J	1.5 J	9.8 J	4.2 J	1.6 B	1.5 B	1.4 J	1.5 J	.83 B
Cyanide	.049 U	.04 U	.16 U	.33 B	.077 U	.072 U	.11 U	0.041 U	.041 U	.14 U	.059 U	.047 U	.044 U	.042 U	.043 U	.053 B
Iron	12300	1520	18300	13500	8280	8680	17400	1470	3220	16500	6410	2560	2660	5320	3540	2650
Lead	6.2 J	1.1	136	12.2 J	7.2 J	8.9 J	15.6 J	14.4	3.2	34.7	7.5	9.1	8.1	8.2	10.1	8.1
Magnesium	396 J	160 J	6770	2050	1190 J	1200 J	1160 J	92.1 B	195 J	5290	1130 J	242 J	248 J	463 J	262 J	157 J
Manganese	26 J	6.9	108	47.6 J	43.2 J	46.3 J	90.3 J	10.3	15.8	62.7	15.5	257	255	81.4	134	68
Mercury	.052 J	.04 U	.24 J	.14 J	.11 J	.10 J	.15 J	0.046 U	.05 U	.16 U	.06 U	.059 U	.041 U	.048 U	.042 U	.052 U
Nickel	2.4 J	.37 J	14.2 J	4.1 J	3.5 J	3.0 J	5.6 J	0.40 J	1.1 J	8.7 J	2.1 J	2 B	1.9 B	2.4 J	2.9 J	1.4 J
Potassium	359 J	170 B	4560	1420 J	1020 J	909 J	911 J	97.6 B	220 B	3510	754 J	166 B	167 B	360 J	188 B	93.5 B
Selenium	.7 UL	.59 UL	2.2 UL	1.5 J	1.1 UL	1.2 J	2.7 J	0.54 UL	.59 UL	1.9 UL	.89 UL	.66 UL	.6 UL	.69 J	.61 UL	.58 UL
Silver	.12 U	.11 U	.4 U	.17 U	.19 U	.18 U	.27 U	0.096 U	.11 U	.34 U	.16 U	.16 J	.11 U	.1 U	.11 U	.1 U
Sodium	437 B	568 B	21300	2610	1400 B	1960	2970	187 B	408 B	20500	4140	356 B	320 B	154 B	171 B	305 B
Thallium	1 UL	.87 UL	3.3 UL	1.4 UL	1.6 UL	1.5 UL	2.2 UL	0.79 UL	.87 UL	2.8 UL	1.3 UL	.96 UL	.88 UL	.85 UL	.89 UL	.85 UL
Vanadium	13.5	2.4 J	50.3	20.5	11.7 J	10.8 J	19.5 J	4.3 J	3.2 J	41.2	21.2	5.7 J	5.7 J	8 J	7.8 J	6 J
Zinc	7.9 L	4.2 J	113	18.1	11.9 L	13.3 L	30.0	16.1	41.2	47.8	12.2	14.5 J	9.6 J	12.2	9.9	4.9 J

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
U - The material was analyzed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
mg/kg - Milograms per kilogram

Table A-1
CAX Surface Soil Inorganic Raw Anlaytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG2-SS05-00	BG2-SS06-00	BG2-SS07-00	BG2-SS08-00	BG2-SS09-00	BG2-SS10-00	BG3-SS01-00	BG3-SS01-00D	BG3-SS02-00	BG3-SS03-00	BG3-SS04-00	BG3-SS05-00	BG3-SS06-00	BG3-SS07-00	BG3-SS08-00	BG3-SS09-00
Date sampled	07-26-2001	07-27-2001	07-24-2001	07-24-2001	07-24-2001	07-25-2001	07-23-2001	07-23-2001	07-24-2001	07-24-2001	07-23-2001	07-24-2001	07-24-2001	07-24-2001	07-24-2001	07-23-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Inorganics (mg/kg)																
Aluminum	2830	4420	3820	4570	2660	4290	4710	5160	4460	3850	3110	5230	3880	3220	4040	4110
Antimony	.37 U	.4 U	.36 UL	.36 U	.36 U	.37 U	0.38 UL	0.38 UL	0.40 UL	0.36 UL	0.37 UL	0.38 UL	0.35 UL	0.37 UL	.36 UL	.36 UL
Arsenic	1.2 B	4.1	1.5 J	1.6 J	.66 B	1.2 B	0.75 J	0.70 J	0.50 J	0.094 J	1.7 J	0.82 J	1.3 J	0.90 J	1.2 J	1.1 J
Barium	25 J	27.4 J	26.9 J	29.4 J	22.3 J	32.7 B	18.2 J	16.7 J	22.7 J	46.4	16.3 J	6.0 J	34.9 J	38.3 J	21.7 J	33.1 J
Beryllium	.31 B	.42 B	.42 B	.52 B	.37 B	.36 B	0.16 B	0.21 B	0.24 B	0.34 B	0.28 B	0.088 U	0.53 B	0.31 B	.32 B	.63 B
Cadmium	.087 U	.093 U	.084 U	.084 U	.084 U	.086 U	0.088 U	0.089 U	0.094 U	0.084 U	0.086 U	0.088 U	0.082 U	0.088 U	.085 U	.086 U
Calcium	1210	3320	373 J	345 J	536 J	319 B	49.5 J	45.8 J	47.4 J	406 J	365 J	316 J	367 J	925 J	157 J	208 J
Chromium	4.5	12.4	6.1	5.5	3.4	3.8	5.4	6.4	2.7	4.9	6.2	9.0	2.7	3.1	3.6	3.5
Cobalt	5.3 J	1.8 J	3.1 J	2.7 J	1.8 B	2.3 B	0.43 B	0.40 B	0.56 J	4.3 J	2.4 J	0.15 U	3.2 J	1.8 J	1.2 J	5.3 J
Copper	2 B	4 J	1.5 J	.99 B	1.2 B	1.5 B	1.6 J	1.6 J	1.2 J	1.7 J	1.6 J	1.2 J	1.6 J	1.3 J	1 J	1.4 J
Cyanide	.06 B	.068 B	.043 U	.042 U	.04 U	.04 U	0.043 U	0.064 B	0.047 U	0.045 U	0.044 U	0.043 U	0.043 U	.043 U	.042 U	.041 U
Iron	4420	12600	6740	5480	3420	3770	5850	6850	2420	3480	4970	8240	2150	2910	3340	3660
Lead	6.4	11.0	8.9	6.8	6.6	9.8	12.0	10.9	10.9	7.8	7.2	7	10.0	7.1	12.2	6.7
Magnesium	412 J	1020 J	510 J	401 J	271 BE	292 BE	137 J	143 J	166 J	218 J	237 J	154 J	164 J	197 B	184 J	212 J
Manganese	197	100	169	112	62.7	101	48.1	36.3	44.3	138	30.4	19.2	234	111	94.8	278
Mercury	.053 U	.058 U	.054 U	.048 U	.05 U	.05 U	0.048 U	0.055 U	0.049 U	0.051 U	0.053 U	0.051 U	0.097 J	.041 U	.052 U	.048 U
Nickel	3.9 J	3.8 J	3.4 J	2.9 J	2 J	2.8 J	1.4 B	1.4 B	1.7 J	3.1 J	2.8 J	1.0 B	3.3 J	2 J	1.9 J	4.4 J
Potassium	245 J	1210 L	356 J	231 B	200 B	161 B	139 B	156 B	86.8 B	160 B	207 B	307 J	118 B	114 B	137 B	136 B
Selenium	.61 UL	.65 UL	.59 UL	.59 UL	.59 UL	.6 UL	0.62 UL	0.65 J	0.65 UL	0.59 UL	0.60 UL	0.62 UL	0.57 UL	.62 UL	.6 UL	.6 UL
Silver	.11 U	.12 U	.10 U	.10 U	.1 U	.11 U	0.11 U	0.11 U	0.12 U	0.10 U	0.11 U	0.11 U	0.10 U	.11 U	.11 U	.11 U
Sodium	264 B	321 B	194 B	293 B	308 B	250 B	172 B	171 B	142 B	152 B	172 B	197 B	134 B	150 B	163 B	114 B
Thallium	.9 UL	.95 UL	.86 UL	.86 UL	.86 UL	.88 UL	0.91 UL	0.91 UL	0.96 UL	0.87 UL	0.88 UL	0.91 UL	0.84 UL	.9 UL	.87 UL	.88 UL
Vanadium	7.5 J	15.2	11.6	9.4 J	6.1 J	7.6 J	13.6	15.5	6.1 J	6.5 J	10.9	22.1	5.0 J	5.4 J	7.3 J	6 J
Zinc	10.8 J	17.9 J	11.3	8.2 J	5.4 J	8.5 J	5.5	5.6	6.4	10.9	7.4	3.6 J	8.8	7.6	7.5	12.2

Notes:
B - Analyte not detected above the l
J - Analyte present, value may or ma
K - Analyte present, value may be b
L - Analyte present, value may be bi
U - The material was analyzed for, b
UL - Analyte not detected, quantitati
mg/kg - Milograms per kilogram

Table A-1
CAX Surface Soil Inorganic Raw Anlaytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG3-SS10-00	BG4-SS01-00	BG4-SS01-00D	BG4-SS02-00	BG4-SS03-00	BG4-SS04-00	BG4-SS05-00	BG4-SS06-00	BG4-SS07-00	BG4-SS08-00	BG4-SS09-00	BG4-SS10-00
Date sampled	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Inorganics (mg/kg)												
Aluminum	6160	5130	4970	2560	3330	2410	1760	3930	2150	3090	3300	5100
Antimony	.36 UL	.60 B	.41 UL	.35 U	.37 U	.35 U	.34 U	.35 U	.36 U	.36 U	.37 U	.38 U
Arsenic	.72 J	12.6	11.7	.70 B	.83 B	.61 B	.47 B	.66 B	.26 U	1.5 J	1.4 B	5.2
Barium	30.6 J	19.6 J	18.7 J	20 J	18.6 J	16.1 B	9.6 J	19.7 B	18.8 J	13.4 J	36.6 J	41.5 J
Beryllium	.36 B	.74 B	.67 B	.21 B	.089 B	.083 U	.079 U	.082 U	.086 U	.084 U	.32 B	.79 J
Cadmium	.084 U	.1 U	.097 U	.082 U	.087 U	.083 U	.079 U	.082 U	.086 U	.084 U	.088 U	.088 U
Calcium	76.8 J	2860	2680	244 J	175 J	84.4 J	95.7 J	251 J	308 J	258 B	762 J	619 J
Chromium	3.6	16.9	17.3	2.8 B	3.1	2.4	2.2	3.8	2.3	5.5	4	12.4
Cobalt	.94 B	3.2 J	3.2 J	1 J	1.2 B	1.0 J	.84 J	.96 J	.68 J	1.2 J	3.4 J	6.7 J
Copper	.9 J	2.7 B	2.7 B	1.4 B	2 B	2.9 B	2.5 B	3 B	2.6 B	3.5 B	4.0 J	2.2 J
Cyanide	.043 U	.05 U	.051 B	.043 U	.042 U	.042 U	.04 U	.04 U	.24 B	.37 B	.38 B	.47 B
Iron	3560	20700	20300	2510	2810	2490	1950	3540	1720	5800	3770	10400
Lead	9.8	14.6	13.4	6.2	16	5.8	6.1	9.1	8.1	7.2	11.2	11.5
Magnesium	228 J	782 J	762 J	169 J	179 J	164 J	112 J	194 J	132 J	241 J	245 J	329 J
Manganese	129	85.7	80.7	150	43.7	60.4	81.9	61	60.2	40.1	304	435
Mercury	.05 U	.062 UL	.059 UL	.046 U	.045 U	.037 U	.047 U	.046 U	.051 J	.042 U	.042 U	.051 U
Nickel	3.1 J	5.8 J	5.9 J	1.4 B	1.7 J	1.4 B	1.1 J	1.4 J	1 B	1.8 B	2.2 B	4.1 J
Potassium	133 B	841 J	827 J	143 B	105 B	97.1 B	87 B	112 B	92.6 B	207 B	159 B	274 B
Selenium	.59 UL	.7 UL	1.4 L	.58 UL	.61 UL	.58 UL	.55 UL	.57 UL	.6 UL	.59 U	.62 UL	1.2 K
Silver	.1 U	.12 U	.12 U	.1 U	.11 U	.1 U	.1 U	.1 U	.11 U	.11 U	.11 U	.11 U
Sodium	143 B	374 B	362 B	239 B	294 B	255 B	240 B	242 B	309 B	265 B	246 B	73.6 U
Thallium	.86 UL	1 UL	.99 UL	.85 UL	.89 UL	.85 UN	.81 UL	.84 UL	.88 UL	.87 UL	.9 UL	.9 UL
Vanadium	7.3 J	26.1	25.2	5.1 J	7.1 J	4.7 J	4 J	8.1 J	4.6 J	11.1	7.7 J	14
Zinc	5.9	26.7	26.6	5.9 J	4.7 J	8.7 J	6.4 J	6.5 J	6.7 J	7 J	14.6 J	22.5 J

Notes:
B - Analyte not detected above the l
J - Analyte present, value may or ma
K - Analyte present, value may be b
L - Analyte present, value may be bi
U - The material was analyzed for, b
UL - Analyte not detected, quantitati
mg/kg - Milograms per kilogram

Table A-2
CAX Surface Soil Organic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG1-SS01-00	BG1-SS02-00	BG1-SS03-00	BG1-SS04-00	BG1-SS05-00	BG1-SS05-00D	BG1-SS06-00	BG1-SS07-00	BG1-SS08-00	BG1-SS09-00	BG1-SS10-00	BG2-SS01-00	BG2-SS01-00D	BG2-SS02-00	BG2-SS03-00
Date sampled	08-06-2001	07-25-2001	07-25-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	07-25-2001	07-25-2001	07-25-2001	07-25-2001	07-27-2001	07-27-2001	07-24-2001	07-25-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Semivolatile Organic Compounds (ug/kg)															
1,1'-Biphenyl	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2,2'-oxybis(1-Chloropropane)	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2,4,5-Trichlorophenol	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 U	950 U	890 U	890 U
2,4,6-Trichlorophenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2,4-Dichlorophenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2,4-Dimethylphenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2,4-Dinitrophenol	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 UJ	950 UJ	890 U	890 U
2,4-Dinitrotoluene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2,6-Dinitrotoluene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2-Chloronaphthalene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2-Chlorophenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2-Methylnaphthalene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2-Methylphenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
2-Nitroaniline	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 U	950 U	890 U	890 U
2-Nitrophenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
3,3'-Dichlorobenzidine	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
3-Nitroaniline	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 U	950 U	890 U	890 U
4,6-Dinitro-2-methylphenol	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 U	950 U	890 U	890 U
4-Bromophenyl-phenylether	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
4-Chloro-3-methylphenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
4-Chloroaniline	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
4-Chlorophenyl-phenylether	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
4-Methylphenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
4-Nitroaniline	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 U	950 U	890 U	890 U
4-Nitrophenol	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 U	950 U	890 U	890 U
Acenaphthene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Acenaphthylene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Acetophenone	410 U	350 U	1600 U	570 U	630 U	610 U	95 J	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Anthracene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Atrazine	410 UJ	350 UJ	1600 U	570 UJ	630 UJ	610 UJ	920 UJ	340 UJ	350 UJ	1300 UJ	450 UJ	390 UJ	380 UJ	350 UJ	350 UJ
Benzaldehyde	410 U	350 U	1600 U	100 J	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Benzo(a)anthracene	410 U	350 U	220 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Benzo(a)pyrene	410 U	350 U	340 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Benzo(b)fluoranthene	410 U	350 U	650 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Benzo(g,h,i)perylene	410 U	350 U	350 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Benzo(k)fluoranthene	410 U	350 U	260 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Butylbenzylphthalate	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Caprolactam	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Carbazole	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Chrysene	410 U	350 U	480 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Di-n-butylphthalate	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Di-n-octylphthalate	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Dibenzo(a,h)anthracene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Dibenzofuran	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Diethylphthalate	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Dimethylphthalate	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Fluoranthene	410 U	350 U	270 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Fluorene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Hexachlorobenzene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Hexachlorobutadiene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Hexachlorocyclopentadiene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Hexachloroethane	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Indeno(1,2,3-cd)pyrene	410 U	350 U	340 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Isophorone	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
N-Nitroso-di-n-propylamine	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
N-nitrosodiphenylamine	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Naphthalene	410 U	350 U	1600 UJ	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Nitrobenzene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Pentachlorophenol	1000 U	880 U	4000 U	1400 U	1600 U	1500 U	2300 U	860 U	870 U	3200 U	1100 U	980 U	950 U	890 U	890 U
Phenanthrene	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Phenol	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
Pyrene	410 U	350 U	330 J	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
bis(2-Chloroethoxy)methane	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
bis(2-Chloroethyl)ether	410 U	350 U	1600 U	570 U	630 U	610 U	920 U	340 U	350 U	1300 U	450 U	390 U	380 U	350 U	350 U
bis(2-Ethylhexyl)phthalate	410 U	59 J	280 J	68 B	630 U	610 U	120 B	120 J	38 J	380 J	66 J	140 B	110 B	240 J	46 J

Table A-2
CAX Surface Soil Organic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG1-SS01-00	BG1-SS02-00	BG1-SS03-00	BG1-SS04-00	BG1-SS05-00	BG1-SS05-00D	BG1-SS06-00	BG1-SS07-00	BG1-SS08-00	BG1-SS09-00	BG1-SS10-00	BG2-SS01-00	BG2-SS01-00D	BG2-SS02-00	BG2-SS03-00
Date sampled	08-06-2001	07-25-2001	07-25-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	07-25-2001	07-25-2001	07-25-2001	07-25-2001	07-27-2001	07-27-2001	07-24-2001	07-25-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Pesticides (ug/kg)															
4,4'-DDD	4.1 U	3.5 U	11 J	5.3 J	6.3 U	6.1 U	12	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
4,4'-DDE	4.1 U	3.5 U	23	5.7 U	6.3 U	6.1 U	4.9 J	3.4 U	3.5 U	4.6 J	4.5 U	3.9 U	3.8 U	1.1 J	3.6 U
4,4'-DDT	4.1 U	3.5 U	10 J	5.7 U	6.3 U	6.1 U	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
Aldrin	2.1 U	1.8 U	8.1 U	2.9 U	3.3 U	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
Dieldrin	3.7 J	3.5 U	16 U	5.7 U	6.3 U	6.1 U	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
Endosulfan I	2.1 U	1.8 U	8.1 U	1.1 J	3.3 U	2.1 J	2.1 J	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
Endosulfan II	4.1 U	3.5 U	16 U	5.7 U	6.3 U	2.1 J	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
Endosulfan sulfate	4.1 U	3.5 U	16 U	2.1 J	6.3 U	2.9 J	3.7 J	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
Endrin	3.5 J	3.5 U	16 U	5.7 U	6.3 U	6.1 U	9.2 U	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
Endrin aldehyde	4.1 U	3.5 U	16 U	1.8 J	3.1 J	12	8.9 J	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
Endrin ketone	4.1 U	3.5 U	16 U	5.7 U	1.9 J	4.5 J	3.4 J	3.4 U	3.5 U	13 U	4.5 U	3.9 U	3.8 U	3.5 U	3.6 U
Heptachlor	2.1 U	1.8 U	8.1 U	2.9 U	3.3 U	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
Heptachlor epoxide	2.1 U	1.8 U	8.1 U	2.9 U	3.3 U	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
Methoxychlor	21 U	18 U	81 U	29 U	33 U	31 U	47 U	18 U	18 U	65 U	23 U	20 U	20 U	18 U	18 U
Toxaphene	210 U	180 U	810 U	290 U	330 U	310 U	470 U	180 U	180 U	650 U	230 U	200 U	200 U	180 U	180 U
alpha-BHC	1.6 J	1.8 U	8.1 U	1.1 J	3.3 U	72 J	1.2 J	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
alpha-Chlordane	2.1 U	1.8 U	4.7 J	1.1 B	3.3 U	3.4 B	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.1 J	1.8 U
beta-BHC	14 J	1.8 U	8.1 U	2.9 U	5.3 J	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
delta-BHC	2.1 U	1.8 U	8.1 U	5 P	3.3 U	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
gamma-BHC (Lindane)	3.3	1.8 U	8.1 U	1.4 J	3.3 U	3.1 U	4.7 U	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
gamma-Chlordane	2.1 U	1.8 U	7.0 J	2.9 U	.92 J	.74 J	1.9 J	1.8 U	1.8 U	6.5 U	2.3 U	2 U	2 U	1.8 U	1.8 U
PCBs (ug/kg)															
Aroclor-1016	41 U	35 U	160 U	57 U	63 U	61 U	92 U	34 U	35 U	130 U	45 U	39 U	38 U	35 U	36 U
Aroclor-1221	84 U	71 U	320 U	120 U	130 U	120 U	190 U	69 U	71 U	260 U	90 U	79 U	77 U	72 U	72 U
Aroclor-1232	41 U	35 U	160 U	57 U	63 U	61 U	92 U	34 U	35 U	130 U	45 U	39 U	38 U	35 U	36 U
Aroclor-1242	41 U	35 U	160 U	57 U	63 U	61 U	92 U	34 U	35 U	130 U	45 U	39 U	38 U	35 U	36 U
Aroclor-1248	41 U	35 U	160 U	57 U	63 U	61 U	92 U	34 U	35 U	130 U	45 U	39 U	38 U	35 U	36 U
Aroclor-1254	41 U	35 U	160 U	57 U	63 U	61 U	92 U	34 U	35 U	130 U	45 U	39 U	38 U	35 U	36 U
Aroclor-1260	41 U	35 U	160 U	57 U	63 U	61 U	92 U	34 U	35 U	130 U	45 U	39 U	38 U	35 U	36 U

Notes:
B - Analyte not detected above the level reported in blanks
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
R - Unreliable Result
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
µg/kg - Micrograms per kilogram

Table A-2
CAX Surface Soil Organic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG2-SS04-00	BG2-SS05-00	BG2-SS06-00	BG2-SS07-00	BG2-SS08-00	BG2-SS09-00	BG2-SS10-00	BG3-SS01-00	BG3-SS01-00D	BG3-SS02-00	BG3-SS03-00	BG3-SS04-00	BG3-SS05-00	BG3-SS06-00	BG3-SS07-00
Date sampled	07-26-2001	07-26-2001	07-27-2001	07-24-2001	07-24-2001	07-24-2001	07-25-2001	07-23-2001	07-23-2001	07-24-2001	07-24-2001	07-23-2001	07-24-2001	07-24-2001	07-24-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Semivolatile Organic Compounds (ug/kg)															
1,1'-Biphenyl	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2,2'-oxybis(1-Chloropropane)	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2,4,5-Trichlorophenol	900 U	970 U	1000 U	900 U	910 U	880 U	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
2,4,6-Trichlorophenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2,4-Dichlorophenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2,4-Dimethylphenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2,4-Dinitrophenol	900 UJ	970 UJ	1000 U	900 U	910 UJ	880 UJ	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
2,4-Dinitrotoluene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2,6-Dinitrotoluene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2-Chloronaphthalene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2-Chlorophenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2-Methylnaphthalene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2-Methylphenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
2-Nitroaniline	900 U	970 U	1000 U	900 U	910 U	880 U	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
2-Nitrophenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
3,3'-Dichlorobenzidine	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
3-Nitroaniline	900 U	970 U	1000 U	900 U	910 U	880 U	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
4,6-Dinitro-2-methylphenol	900 U	970 U	1000 U	900 U	910 U	880 U	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
4-Bromophenyl-phenylether	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
4-Chloro-3-methylphenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
4-Chloroaniline	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
4-Chlorophenyl-phenylether	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
4-Methylphenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
4-Nitroaniline	900 U	970 U	1000 U	900 U	910 U	880 U	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
4-Nitrophenol	900 U	970 U	1000 U	900 U	910 U	880 U	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
Acenaphthene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Acenaphthylene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Acetophenone	360 U	380 U	41 J	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Anthracene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Atrazine	360 UJ	380 UJ	400 UJ	360 UJ	360 UJ	350 UJ	1100 UJ	370 UJ	370 UJ	390 UJ	370 UJ	370 UJ	410 UJ	360 UJ	370 UJ
Benzaldehyde	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Benzo(a)anthracene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Benzo(a)pyrene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Benzo(b)fluoranthene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Benzo(g,h,i)perylene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Benzo(k)fluoranthene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Butylbenzylphthalate	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Caprolactam	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Carbazole	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Chrysene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Di-n-butylphthalate	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Di-n-octylphthalate	360 U	380 U	66 J	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Dibenzo(a,h)anthracene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Dibenzofuran	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Diethylphthalate	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Dimethylphthalate	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Fluoranthene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Fluorene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Hexachlorobenzene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Hexachlorobutadiene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Hexachlorocyclopentadiene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Hexachloroethane	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Indeno(1,2,3-cd)pyrene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Isophorone	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
N-Nitroso-di-n-propylamine	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
N-nitrosodiphenylamine	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Naphthalene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Nitrobenzene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Pentachlorophenol	900 U	970 U	1000 U	900 U	910 U	880 U	2700 U	920 U	920 U	990 U	930 U	920 U	1000 U	900 U	930 U
Phenanthrene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Phenol	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
Pyrene	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
bis(2-Chloroethoxy)methane	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
bis(2-Chloroethyl)ether	360 U	380 U	400 U	360 U	360 U	350 U	1100 U	370 U	370 U	390 U	370 U	370 U	410 U	360 U	370 U
bis(2-Ethylhexyl)phthalate	250 B	2000	2100	140 J	670 B	200 B	5000	370 U	190 J	600	450	290 J	340 J	140 J	370 U

Table A-2
CAX Surface Soil Organic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG2-SS04-00	BG2-SS05-00	BG2-SS06-00	BG2-SS07-00	BG2-SS08-00	BG2-SS09-00	BG2-SS10-00	BG3-SS01-00	BG3-SS01-00D	BG3-SS02-00	BG3-SS03-00	BG3-SS04-00	BG3-SS05-00	BG3-SS06-00	BG3-SS07-00
Date sampled	07-26-2001	07-26-2001	07-27-2001	07-24-2001	07-24-2001	07-24-2001	07-25-2001	07-23-2001	07-23-2001	07-24-2001	07-24-2001	07-23-2001	07-24-2001	07-24-2001	07-24-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Pesticides (ug/kg)															
4,4'-DDD	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U	3.7 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U
4,4'-DDE	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	1.3 J	3.7 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U
4,4'-DDT	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U	3.7 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U
Aldrin	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U
Dieldrin	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	3.3 J	3.7 U	4.4 J	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U
Endosulfan I	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U
Endosulfan II	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U	3.7 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U
Endosulfan sulfate	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U	3.7 U	3.9 U	3.7 U	2.3 J	2.4 J	3.6 U	3.7 U
Endrin	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U	3.7 U	3.9 U	3.7 U	3.7 U	4.1 U	3.6 U	3.7 U
Endrin aldehyde	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U	3.7 U	3.9 U	3.7 U	3.7 U	2.7 J	3.6 U	3.7 U
Endrin ketone	3.6 U	3.8 U	4 U	3.6 U	3.6 U	3.5 U	3.6 U	1.8 J	3.7 U	3.9 U	3.7 U	3.7 U	2.1 J	3.6 U	3.7 U
Heptachlor	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U
Heptachlor epoxide	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	1.8 J	1.8 U	1.9 U
Methoxychlor	18 U	20 U	21 U	18 U	18 U	18 U	18 U	19 U	19 U	20 U	19 U	19 U	21 U	18 U	19 U
Toxaphene	180 U	200 U	210 U	180 U	180 U	180 U	180 U	190 U	190 U	200 U	190 U	190 U	210 U	180 U	190 U
alpha-BHC	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U
alpha-Chlordane	1.8 U	2 U	2.1 U	1.1 J	.83 B	.59 B	2.5	1.9 U	1 J	2 U	0.94 J	0.89 J	1.4 J	0.65 J	1.9 U
beta-BHC	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U
delta-BHC	1.8 U	2 U	2.1 U	0.65 J	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U
gamma-BHC (Lindane)	1.8 U	2 U	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	2.1 U	1.8 U	1.9 U
gamma-Chlordane	1.8 U	2 U	2.1 U	0.55 J	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	0.65 J	1.8 U	1.9 U
PCBs (ug/kg)															
Aroclor-1016	36 U	38 U	40 U	36 U	36 U	35 U	36 U	36 U	37 U	39 U	37 U	37 U	41 U	36 U	37 U
Aroclor-1221	73 U	78 U	82 U	73 U	73 U	71 U	73 U	74 U	74 U	80 U	75 U	74 U	84 U	73 U	75 U
Aroclor-1232	36 U	38 U	40 U	36 U	36 U	35 U	36 U	36 U	37 U	39 U	37 U	37 U	41 U	36 U	37 U
Aroclor-1242	36 U	38 U	40 U	36 U	36 U	35 U	36 U	36 U	37 U	39 U	37 U	37 U	41 U	36 U	37 U
Aroclor-1248	36 U	38 U	40 U	36 U	36 U	35 U	36 U	36 U	37 U	39 U	37 U	37 U	41 U	36 U	37 U
Aroclor-1254	36 U	38 U	40 U	36 U	36 U	35 U	36 U	36 U	37 U	39 U	37 U	37 U	41 U	36 U	37 U
Aroclor-1260	36 U	38 U	40 U	36 U	36 U	35 U	36 U	36 U	37 U	39 U	37 U	37 U	41 U	36 U	37 U

Notes:
B - Analyte not detected above the level reported i
J - Analyte present, value may or may not be accu
L - Analyte present, value may be biased low, actu
R - Unreliable Result
U - The material was analyzed for, but not detecte
UJ - Analyte not detected, quantitation limit may be
µg/kg - Micrograms per kilogram

Table A-2
CAX Surface Soil Organic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG3-SS08-00	BG3-SS09-00	BG3-SS10-00	BG4-SS01-00	BG4-SS01-00D	BG4-SS02-00	BG4-SS03-00	BG4-SS04-00	BG4-SS05-00	BG4-SS06-00	BG4-SS07-00	BG4-SS08-00	BG4-SS09-00	BG4-SS10-00
Date sampled	07-24-2001	07-23-2001	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Semivolatile Organic Compounds (ug/kg)														
1,1'-Biphenyl	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
2,2'-oxybis(1-Chloropropane)	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
2,4,5-Trichlorophenol	900 U	930 U	900 U	1000 U	1100 U	910 U	900 U	880 U	860 U	880 U	900 U	900 U	940 U	980 U
2,4,6-Trichlorophenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
2,4-Dichlorophenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
2,4-Dimethylphenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
2,4-Dinitrophenol	900 U	930 U	900 U	1000 U	1100 U	910 UJ	900 UJ	880 UJ	860 U	880 U	900 U	900 U	940 U	980 U
2,4-Dinitrotoluene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
2,6-Dinitrotoluene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
2-Chloronaphthalene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
2-Chlorophenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
2-Methylnaphthalene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
2-Methylphenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
2-Nitroaniline	900 U	930 U	900 U	1000 U	1100 U	910 U	900 U	880 U	860 R	880 U	900 U	900 U	940 U	980 U
2-Nitrophenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
3,3'-Dichlorobenzidine	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
3-Nitroaniline	900 U	930 U	900 U	1000 U	1100 U	910 U	900 U	880 U	860 R	880 U	900 U	900 U	940 U	980 U
4,6-Dinitro-2-methylphenol	900 U	930 U	900 U	1000 U	1100 U	910 U	900 U	880 U	860 U	880 U	900 U	900 U	940 U	980 U
4-Bromophenyl-phenylether	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
4-Chloro-3-methylphenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
4-Chloroaniline	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
4-Chlorophenyl-phenylether	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
4-Methylphenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
4-Nitroaniline	900 U	930 U	900 U	1000 U	1100 U	910 U	900 U	880 U	860 R	880 U	900 U	900 U	940 U	980 U
4-Nitrophenol	900 U	930 U	900 U	1000 U	1100 U	910 U	900 U	880 U	860 U	880 U	900 U	900 U	940 U	980 U
Acenaphthene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Acenaphthylene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Acetophenone	110 J	370 U	360 U	400 U	420 U	360 U	360 U	350 U	61 L	350 U	360 U	360 U	380 U	390 U
Anthracene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Atrazine	360 UJ	370 UJ	360 UJ	400 UJ	420 UJ	360 U	360 UJ	350 UJ	340 R	350 UJ	360 UJ	360 UJ	380 UJ	390 UJ
Benzaldehyde	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(a)anthracene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(a)pyrene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(b)fluoranthene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(g,h,i)perylene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Benzo(k)fluoranthene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Butylbenzylphthalate	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Caprolactam	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
Carbazole	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Chrysene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Di-n-butylphthalate	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Di-n-octylphthalate	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Dibenzo(a,h)anthracene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Dibenzofuran	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Diethylphthalate	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Dimethylphthalate	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Fluoranthene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Fluorene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Hexachlorobenzene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
Hexachlorobutadiene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Hexachlorocyclopentadiene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
Hexachloroethane	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Indeno(1,2,3-cd)pyrene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Isophorone	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
N-Nitroso-di-n-propylamine	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
N-nitrosodiphenylamine	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Naphthalene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Nitrobenzene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Pentachlorophenol	900 U	930 U	900 U	1000 U	1100 U	910 U	900 U	880 U	860 U	880 U	900 U	900 U	940 U	980 U
Phenanthrene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
Phenol	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 U	350 U	360 U	360 U	380 U	390 U
Pyrene	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
bis(2-Chloroethoxy)methane	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
bis(2-Chloroethyl)ether	360 U	370 U	360 U	400 U	420 U	360 U	360 U	350 U	340 R	350 U	360 U	360 U	380 U	390 U
bis(2-Ethylhexyl)phthalate	130 J	370 U	360 U	170 J	200 J	240 B	230 B	54 B	340 B	200 B	750 B	2300	71 B	95 B

Table A-2
CAX Surface Soil Organic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG3-SS08-00	BG3-SS09-00	BG3-SS10-00	BG4-SS01-00	BG4-SS01-00D	BG4-SS02-00	BG4-SS03-00	BG4-SS04-00	BG4-SS05-00	BG4-SS06-00	BG4-SS07-00	BG4-SS08-00	BG4-SS09-00	BG4-SS10-00
Date sampled	07-24-2001	07-23-2001	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Depth	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"	0 - 6"
Pesticides (ug/kg)														
4,4'-DDD	3.6 U	3.7 U	3.6 U	1.3 J	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
4,4'-DDE	3.6 U	3.7 U	3.6 U	1.3 J	2.5 J	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
4,4'-DDT	3.6 U	3.7 U	3.6 U	4 U	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Aldrin	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
Dieldrin	3.6 U	3.7 U	3.6 U	4 U	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	2.6 J	2.4 J
Endosulfan I	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
Endosulfan II	3.6 U	3.7 U	3.6 U	4 U	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Endosulfan sulfate	3.6 U	3.7 U	3.6 U	4 U	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	1.6 J	3.6 U	3.6 U	3.8 U	3.9 U
Endrin	3.6 U	3.7 U	3.6 U	4 U	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Endrin aldehyde	1.2 J	3.7 U	3.6 U	4 U	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Endrin ketone	1.2 J	3.7 U	3.6 U	4 U	4.2 U	3.6 U	3.6 U	3.5 U	3.4 U	3.5 U	3.6 U	3.6 U	3.8 U	3.9 U
Heptachlor	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
Heptachlor epoxide	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
Methoxychlor	19 U	19 U	18 U	21 U	22 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	19 U	20 U
Toxaphene	190 U	190 U	180 U	210 U	220 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	190 U	200 U
alpha-BHC	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
alpha-Chlordane	1.7 J	0.83 J	1.8 U	1.7 J	.75 J	1.8 U	1.3 B	1.5 J	1.8 U	2.2	.65 B	.84 B	1.9 U	2.3 J
beta-BHC	.94 J	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
delta-BHC	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
gamma-BHC (Lindane)	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	2 U
gamma-Chlordane	1.9 U	1.9 U	1.8 U	2.1 U	2.2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	.65 J	2 U
PCBs (ug/kg)														
Aroclor-1016	36 U	37 U	36 U	40 U	42 U	36 U	36 U	35 U	34 U	35 U	36 U	36 U	38 U	39 U
Aroclor-1221	73 U	75 U	73 U	82 U	85 U	73 U	73 U	71 U	70 U	71 U	73 U	73 U	76 U	79 U
Aroclor-1232	36 U	37 U	36 U	40 U	42 U	36 U	36 U	35 U	34 U	35 U	36 U	36 U	38 U	39 U
Aroclor-1242	36 U	37 U	36 U	40 U	42 U	36 U	36 U	35 U	34 U	35 U	36 U	36 U	38 U	39 U
Aroclor-1248	36 U	37 U	36 U	40 U	42 U	36 U	36 U	35 U	34 U	35 U	36 U	36 U	38 U	39 U
Aroclor-1254	36 U	37 U	36 U	40 U	42 U	36 U	36 U	35 U	34 U	35 U	36 U	36 U	38 U	39 U
Aroclor-1260	36 U	37 U	36 U	40 U	42 U	36 U	36 U	35 U	34 U	35 U	36 U	36 U	38 U	39 U

Notes:
B - Analyte not detected above the level reported i
J - Analyte present, value may or may not be accu
L - Analyte present, value may be biased low, actu
R - Unreliable Result
U - The material was analyzed for, but not detecte
UJ - Analyte not detected, quantitation limit may be
µg/kg - Micrograms per kilogram

Table A-3
WPNSTA Yorktown Surface Soil Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BGS01	BGS02	BGS03	BGS04	BGS05	BGS06	BGS07	BGS08	BGS09	BGS10	BGS11	BGS12	BGS13	BGS14	BGS15	BGS16	BGS17	BGS18	BGS18D
Date sampled	07/08/94	07/08/94	07/08/94	07/08/94	07/08/94	07/08/94	07/08/94	07/08/94	07/08/94	07/19/94	07/19/94	07/20/94	07/20/94	07/19/94	07/20/94	07/19/94	07/20/94	07/20/94	07/20/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Inorganics (mg/kg)																			
Aluminum	1960.0	4590	6320	8550	4530	3210	6030	6530	4960	4980	4370	3940	2540	4530	6180	4630	7500	5630	5780
Antimony	8.4 UL	8.3 UL	8.8 UL	8.9 UL	8.7 UL	9.2 L	8.5 UL	9.4 UL	8.4 UL	8.6 UL	9.5 UL	8.6 UL	8.5 UL	9.2 UL	9.3 UL	8.7 UL	9.4 UL	9.3 UL	9.4 UL
Arsenic	1.9 J	1.2 J	1.5 J	3.4	3.6	2 J	5.8	1.4 J	1.5 J	1.2 J	2.9	0.46 L	0.65 L	0.84 J	0.75 L	0.53 L	2.5 L	1.6 L	2.5 L
Barium	12.7 J	22 J	53.1	62	24.8 J	19.1 J	17.8 J	20 J	20.4 J	31.5 J	35 J	5.1 J	4.2 J	24.4 J	20.2 J	15.1 J	28.1 J	34.3 J	35.1 J
Beryllium	0.2 U	0.23 J	0.51 J	0.52 J	0.28 J	0.23 J	0.4 J	0.25 U	0.31 J	0.42 J	0.32 J	0.23 U	0.23 U	0.25 U	0.42 J	0.23 U	0.6 J	0.51 J	0.59 J
Cadmium	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.3 U	1.1 U	1.2 U	1.3 U	1.2 U	1.1 U	1.2 J	1.3 U	1.2 U	1.3 U	1.3 U	1.3 U
Calcium	268.0 J	215 J	937 J	7820	1420	388 J	259 J	269 J	110 J	204 J	1610 J	39.4 J	67.3 J	696 J	229 J	346 J	447 J	727 J	670 J
Chromium	4.3	5.5	5.4	13.6	9.4	5.3	11.8	6.9	5.1	6.8	9.8	4.3	3.2	5.4	5.7	5.1	9.7	8.7	8.3
Cobalt	0.9 U	1.6 J	1.5 J	4.2 J	1.2 J	2.3 J	2.2 J	1.1 J	1.6 J	6 J	2.5 J	1.1 J	0.91 U	2 J	3.6 J	1.6 J	4.6 J	6.2 J	6.7 J
Copper	1.1 U	1.7 J	1.5 J	24.4	2 J	1.1 U	2.4 J	2 J	1.1 U	1.2 UL	3.7 J	1.2 U	1.1 U	2.5 J	1.6 J	1.7 J	1.9 J	1.9 J	2 J
Iron	3310.0	4160	4670	12400	7090	4910	11100	5670	3690	3580	7010	3150	1440	4400	5260	3550	9210	7960	7510
Lead	6.9	6.4	15.3	22.7	9.9	9.8	43.1	14.7	12	14.3 J	14.2 J	7.6	8.4	14.2 J	11.3	8.7	14.3	12.7	13.3
Magnesium	175.0 J	236 J	290 J	1060 J	475 J	262 J	489 J	329 J	319 J	297 J	487 J	159 J	61.5 J	233 J	229 J	245 J	416 J	372 J	385 J
Manganese	8.3	65.8	491	298	73.4	85.9	29.9	40	26.5	169 J	191 J	7.6 L	10.3 L	118 J	45.2 L	39.2 L	92.3 L	254 L	273 L
Mercury	0.1 U	0.05 U	0.06 U	0.06 U	0.06 U	0.05 U	0.05 U	0.06 U	0.05 U	0.06 U	0.06 U	0.06 UL	0.06 UL	0.06 U	0.06 UL	0.06 UL	0.06 UL	0.06 UL	0.06 UL
Nickel	3.6 U	4.5 J	4.9 J	9 J	4.8 J	5.6 J	6.2 J	7 J	4.2 J	6.6 J	4.1 U	3.7 U	3.7 U	6 J	4 U	3.8 U	7.7 K	4 U	4.8 K
Potassium	355.0 U	353 U	372 U	828 J	531 J	354 U	360 U	398 U	355 U	367 U	515 J	367 U	359 U	390 U	396 U	368 U	399 U	535 J	400 U
Selenium	0.4 J	0.32 J	0.46 J	0.27 J	0.24 U	0.32 J	0.32 J	0.55 L	0.38 L	0.23 U	0.27 J	0.23 U	0.23 U	0.25 U	0.25 U	0.24 U	0.26 U	0.25 U	0.25 U
Silver	0.9 U	0.9 U	0.95 U	0.96 U	0.94 U	0.9 U	0.92 U	1 U	0.9 U	1 J	1 U	0.93 U	0.91 U	0.99 U	1 U	0.94 U	1 U	1 U	1 U
Sodium	43.2 J	32.3 J	40.1 J	115 J	40.6 J	22.7 J	37.8 J	45.4 J	34 J	46.7 J	34.7 J	13.9 J	40.1 J	31.9 J	24 J	32.1 J	25 J	26.1 J	24.4 J
Thallium	0.2 U	0.22 U	0.24 U	0.24 U	0.24 U	0.23 U	0.23 U	0.25 U	0.23 U	0.23 U	0.26 U	0.23 U	0.23 U	0.25 U	0.25 U	0.24 U	0.26 U	0.25 U	0.25 U
Vanadium	7.4 J	10.8 J	10.7 J	19.3	15.3	10.1 J	20.4	14.8	10.1 J	11.2 J	15	11 J	7.6 J	11 J	12.7	10.8 J	20.2	17.3	16.4
Zinc	5.7	8.6	13	37.5	14.9	9.8	18	13.4	10.9	17.2	18.6	5.1 Z	3.2 KJ	11.3	11.7	8.4	17.2	15.6	16.3
Cyanide	0.6 U	0.56 U	0.59 U	0.6 U	0.59 U	0.55 U	0.57 U	0.63 U	0.56 U	0.58 U	0.64 U	0.58 U	0.57 U	0.61 U	0.63 U	0.6 U	0.64 U	0.63 U	0.64 U

Notes:
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
R - Unreliable Result
U - The material was analyzed for, but not detected
Z
UL - Analyte not detected, quantitation limit is probably higher
mg/kg - Milograms per kilogram

Table A-3
WPNSTA Yorktown Surface Soil Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BGS19	BGS20	BGS20D	BGS21	BGS22	BGS23	BGS24	BGS24D	BGS25	BGS26	BGS27	BGS28	BGS29	BGS30	BGS31	BGS33	BGS34	BGS34D	BGS35
Date sampled	07/20/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/21/94	07/22/94	07/23/94	07/23/94	07/23/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Inorganics (mg/kg)																			
Aluminum	5760	13000	12900	15600	10600	3110	4380	4440	5010	5810	12000	19200	4410	9210	4500	8440	4790	8330	12000
Antimony	9 UL	10.3 UL	10.4 UL	8.9 UL	9.3 UL	8.5 UL	8.9 UL	8.9 UL	8.3 UL	8.7 UL	10.6 UL	9.2 UL	8.5 UL	8.6 UL	8.7 UL	8.3 R	8.7 UL	8.8 UL	11 L
Arsenic	4.2	2.9	2.6 J	63.9	1.8 J	1.1 J	1.3 J	1.5 J	1.4 J	1.1 J	2.7 J	2.9	1.2 J	2.4	1.1 J	1.4 J	3.7	4.1	2.1 K
Barium	17.4 J	76.6	75.7	19.5 J	57.0	10.8 J	20.9 J	22.9 J	32.4 J	19 J	23.5 J	80.2	15.5 J	15.8 J	23.7 J	30.2 J	25 J	30 J	47.9 J
Beryllium	0.42 J	0.64 J	0.63 J	0.24 U	0.57 J	0.23 U	0.28 J	0.33 J	0.38 J	0.24 U	0.32 J	0.63 J	0.23 U	0.23 U	0.30 J	0.37 J	0.42 J	0.49 J	0.55 J
Cadmium	1.2 U	1.4 U	1.4 U	1.2 U	1.3 U	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.4 U	1.2 U	1.1 U	1.5	1.2 U	1.1 U	1.2 UL	1.2 UL	1.2 UL
Calcium	908 J	2730	2940	97.0 J	1330	133 J	469 J	575 J	148 J	105 J	346 J	854 J	168 J	347 J	1120 J	596 J	1720	1740	800 J
Chromium	13.4	14.3	13.7	13.1	9.7	3.4	4.3	5.4	6.1	5.3	14.1	17.5	4.5	9.6	4.7	8.8	10	18.3	10.9
Cobalt	4.9 J	4.1 J	4.0 J	1.6 J	3.0 J	1.0 J	1.2 J	2.7 J	3.5 J	1.0 J	1.9 J	3.5 J	1.4 J	1.7 J	1.8 J	2.5 J	2.6 J	3.4 J	3.6 J
Copper	2.3 J	3.9 J	3.9 J	2.7 J	3.4 J	1.1 U	1.5 J	1.4 J	1.3 J	1.9 J	3.7 J	5.3 J	1.1 U	2.0 J	1.2 J	2.4 J	2.6 J	4.2 J	3.7 J
Iron	17200	11200	10600	6820	6780	2160	3270	3940	6490	3820	19900	13000	3400	7830	3150	7410	7060	12500	6310
Lead	12.9	16.7 L	14.8 L	13.9 L	25.3 L	10 L	12.6 L	11.3 L	11.8 L	10.4 L	14.5 L	38.7 L	8.8 L	13 L	7.3 L	9.3	7.3 L	7.4 L	16.5 L
Magnesium	492 J	803 J	818 J	456 J	586 J	181 J	287 J	303 J	290 J	320 J	401 J	1070 J	257 J	394 J	324 J	493 J	840 J	1610	914 J
Manganese	97.7 L	332	340	9.5	157	19.0	84.7	87.6	72.9	15.5	28.7	126	28.6	13.0	72.8	89.3	105	70.6	206
Mercury	0.06 UL	0.06 UL	0.07 UL	0.06 UL	0.06 UL	0.05 UL	0.06 UL	0.06 UL	0.05 UL	0.06 UL	0.07 UL	0.06 UL	0.06 UL	0.06 UL	0.06 UL	0.05 U	0.06 UL	0.05 UL	0.06 UL
Nickel	6.2 K	6.4 J	11.9	7.2 J	6.5 J	5.7 J	5.1 J	5.4 J	5.7 J	5.4 J	4.6 J	10.7	5.1 J	5.5 J	5.1 J	8.8 K	3.7 U	8.6 J	6.9 J
Potassium	429 J	725 J	442 U	377 U	519 J	359 U	377 U	377 U	353 U	370 U	449 U	457 J	360 U	416 J	371 U	350 U	738 J	1640 J	724 J
Selenium	0.24 U	0.43 J	0.43 J	0.44 J	0.39 J	0.23 U	0.3 J	0.3 J	0.22 U	0.30 J	0.36 J	0.31 J	0.23 U	0.36 J	0.24 U	0.22 UL	0.23 UL	0.24 UL	0.4 L
Silver	0.98 U	1.1 U	1.1 U	2.1 J	1.0 U	0.91 U	0.96 U	0.96 U	0.90 U	0.94 U	1.1 U	1.00 U	0.92 U	0.92 U	0.94 U	0.89 U	0.94 U	0.95 U	0.96 U
Sodium	17.4 J	21.2 J	26.4 J	51.0 J	32.2 J	22.7 J	15.8 J	18.6 J	29.6 J	43.0 J	33.0 J	37.3 J	18.7 J	35.7 J	32.7 J	36.2 J	46.7 J	63.4 J	84.3 J
Thallium	0.24 U	0.28 U	0.28 U	0.24 U	0.25 U	0.23 U	0.24 U	0.24 U	0.22 U	0.24 U	0.29 U	0.25 U	0.23 U	0.23 U	0.24 U	0.22 U	0.23 U	0.24 U	0.25 U
Vanadium	20.8	27.8	26.9	25.4	20.4	8.7 J	9.8 J	10.0 J	10.7 J	12.5	29.8	34.7	9.8 J	21.2	8.9 J	17.1	12.2	18.9	21.2
Zinc	17.9	25.5	25.2	8.5	22.7	5.7	11.0	12.1	11.0	8.2	15.5	48.4	16	12.9	9.7	12.8 J	18.2	24.1	21.3
Cyanide	0.61 U	0.70 U	0.70 U	0.58 U	0.62 U	0.57 U	0.6 U	0.59 U	0.56 U	0.59 U	0.71 U	0.61 U	0.57 U	0.58 U	0.59 U	0.55 U	0.59 U	0.59 U	0.62 U

Notes:
J - Analyte present, value may or may
K - Analyte present, value may be bias
L - Analyte present, value may be bias
R - Unreliable Result
U - The material was analyzed for, but
Z
UL - Analyte not detected, quantitation
mg/kg - Milograms per kilogram

Table A-3
WPNSTA Yorktown Surface Soil Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BGS36	BGS37	BGS38	BGS39	BGS39D	BGS40
Date sampled	07/22/94	07/23/94	07/23/94	07/23/94	07/23/94	07/23/94
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
Inorganics (mg/kg)						
Aluminum	2850	6250	6880	4660	4130	3640
Antimony	8.1 R	8.4 UL	8.6 UL	8 UL	8.3 UL	8.1 UL
Arsenic	0.68 J	1.6 K	1.7 K	0.83 K	0.81 J	1.2 K
Barium	11.8 J	34 J	76.3	18.4 J	17 J	18.5 J
Beryllium	0.22 U	0.56 J	0.93 J	0.3 J	0.27 J	0.22 U
Cadmium	1.3 K	1.1 UL	1.2 UL	1.1 UL	1.1 UL	1.1 UL
Calcium	135 J	432 J	1430	285 J	233 J	467 J
Chromium	2.6	7.9	7	5.1	5.4	5.2
Cobalt	1.1 J	2.3 J	4 J	2.7 J	1.8 J	1 J
Copper	1.1 U	3.3 J	5 J	1.6 J	1.5 J	1.7 J
Iron	1910	5190	6300	2700	2660	3510
Lead	16.5	8.7 L	9.9 L	6.8 L	8.6	7.7 L
Magnesium	161 J	482 J	594 J	307 J	280 J	347 J
Manganese	20.3	252	413	54.9	36.1	48
Mercury	0.05 U	0.05 UL	0.06 UL	0.05 UL	0.05 UL	0.06 UL
Nickel	5.5 K	7.5 J	5.9 J	5.2 J	3.8 J	4.3 J
Potassium	345 U	358 U	593 J	338 U	611 J	398 J
Selenium	0.22 UL	0.27 L	0.23 UL	0.26 L	0.27 L	0.22 UL
Silver	0.88 U	0.91 U	0.93 U	0.86 U	0.9 U	0.88 U
Sodium	50 J	37.6 J	52 J	69.3 J	35 J	68.7 J
Thallium	0.22 U	0.23 U	0.23 U	0.22 U	0.22 U	0.22 U
Vanadium	6.1 J	14.4	12	8.7 J	9.4 J	8.8 J
Zinc	5.9 J	15.5	23.8	12.1	11.5	9.8
Cyanide	0.55 U	0.56 U	0.58 U	0.54 U	0.56 U	0.55 U

Notes:
J - Analyte present, value may or may
K - Analyte present, value may be bias
L - Analyte present, value may be bias
R - Unreliable Result
U - The material was analyzed for, but
Z
UL - Analyte not detected, quantitation
mg/kg - Milograms per kilogram

Table A-4
CAX Subsurface Soil Inorganic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG1-SB01-01	BG1-SB02-01	BG1-SB03-01	BG1-SB04-01	BG1-SB05-01	BG1-SB05-01D	BG1-SB05-01D	BG1-SB06-01	BG1-SB07-01	BG1-SB08-01	BG1-SB09-01	BG1-SB10-01	BG2-SB01-01	BG2-SB01-01D	BG2-SB02-01	BG2-SB03-01
Date sampled	08-06-2001	07-23-2001	07-23-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-27-2001	07-27-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Inorganics (mg/kg)																
Aluminum	3640	238	18400	5190	3670	3590.1661	3620	4570	307	1510	11600	2700	1710	6960	11400	4590
Antimony	.43 UL	.41 U	.89 U	.51 UL	.52 UL	.5215 UL	.45 UL	.5 UL	.39 U	.47 U	.79 U	.47 U	.38 B	.56 B	.36 U	.35 U
Arsenic	4.5	.29 U	10.4	5.5	3 J	2.5975	3.4	3.2	.28 U	1.7 B	12.5	2.5 B	.26 U	15.9	3.8	1.3 B
Barium	21.7 J	.9 J	28.5 J	6.6 J	11.8 J	11.5039 J	12.0 J	14.2 J	3.8 J	3.5 J	19.8 J	5.1 J	21.4 J	14.2 J	38.7 J	36.2 J
Beryllium	.45 B	.13 B	1.2 B	.54 B	.32 B	.4858 B	.45 B	.44 B	.18 B	.32 B	.8 B	.48 B	.54 B	.95 B	.77 B	.51 B
Cadmium	.1 U	.097 U	.21 U	.12 U	.12 U	.1227 U	.11 U	.12 U	.092 U	.11 U	.19 U	.11 U	.085 U	.098 U	.084 U	.082 U
Calcium	1120 J	307 J	1420 J	1590	3390	2597.2596	1770	32200	145 J	880 J	1310 J	351 J	136 J	1810	1060	412 J
Chromium	8.2	2.4	37.5	17.1	12.1	11.0958	11.1	15.3	4.5	5.7	25	7.5	2.5	25.3	26.4	5.3
Cobalt	1.3 B	.17 U	3.7 J	1.4 B	2 J	1.7242 J	1.8 J	1.6 J	.2 J	.57 J	2.7 J	1.1 J	1.7 J	4.4 J	2.4 J	4.2 J
Copper	1.4 J	.86 J	9.6 J	2.9 J	2.6 J	2.5916 J	1.7 J	3 J	.79 J	2.3 J	9 J	2.9 B	.71 B	2.2 B	2.5 B	1 B
Cyanide	.05 U	.046 U	2.7	.058 U	.061 U	.0613 U	.051 U	.06 U	.045 U	.055 U	.096 U	.056 U	.12 B	.05 U	.043 U	.043 U
Iron	7610	1280	22400	14000	9910	9359.5161	9510	9780	1820	4510	19300	5360	1870	30000	21700	5140
Lead	6.4	2.6	23.3	4.8	5.7	5.2842	4.5	5.8	6	83.7	35.3	5.4	2	7.1	7.7	7.7
Magnesium	318 J	214 J	4630	1810	1040 J	997.8648 J	928 J	1350 J	213 J	710 J	3340	862 J	176 J	765 J	1420	357 J
Manganese	16	2.9 J	86.2	14.6	15.2	13.6981	11	17.2	6.7	13.4	53.8	14	131	34.6	44.2	82.5
Mercury	.054 U	.052 UL	.11 UL	.07 U	.077 U	.0771 J	.067 J	.068 U	.054 UL	.059 UL	.083 UL	.05 UL	.053 U	.11 B	.045 UL	.043 UL
Nickel	.2 J	.51 J	.11 J	3.2 J	3.1 J	3.7205 J	3.1 J	3.6 J	.57 J	2 J	7.8 J	2.8 J	1.5 B	8.2 J	5.5 J	3.4 J
Potassium	281 J	147 B	4240	2370 J	1210 J	1209.836 J	1190 J	1970 J	182 B	542 J	2790	611 J	100 J	889 J	1140	210 B
Selenium	1.6 B	.68 UL	1.5 UL	1.8 B	1.9 L	1.5102 B	.75 B	1.3 B	.65 UL	.77 UL	1.3 UL	.78 UL	.6 UL	1.2 J	.59 UL	.57 UL
Silver	.13 U	.12 UL	.26 UL	.15 U	.15 U	.1534 U	.13 U	.15 U	.12 UL	.14 UL	.23 UL	.14 UL	.11 U	.12 U	.10 UL	.1 UL
Sodium	467 B	1280	9810	1560	629 B	565.4206 B	492 B	2560	973 B	1700	10400	2360	285 B	321 B	206 B	175 B
Thallium	1 UL	.99 UL	2.1 UL	1.2 UL	1.3 UL	1.2577 UL	1.1 UL	1.2 UL	.95 UL	1.1 UL	1.9 UL	1.1 UL	.87 UL	1 UL	.86 UL	.84 UL
Vanadium	12.2 J	2.1 J	53.8	19.4	12.9 J	12.5212 J	12.2 J	17.7	3.1 J	7.8 J	37.8	14.1	2.2 J	33.2	32	9.1 J
Zinc	6.7 J	20.9	52.9	14.2 J	12.4 J	12.423 J	11.3 J	14.7 J	7.1 L	17.3	34.3	15.2	3.0 B	29.5	19.9	7.4 L

Notes:
B - Analyte not detected above the level reported in blanks
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
U - The material was analyzed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
UJ - Analyte not detected, quantitation limit may be inaccurate
mg/kg - Milograms per kilogram

Table A-4
CAX Subsurface Soil Inorganic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG2-SB04-01	BG2-SB05-01	BG2-SB06-01	BG2-SB07-01	BG2-SB08-01	BG2-SB09-01	BG2-SB10-01	BG3-SB01-01	BG3-SB01-01D	BG3-SB02-01	BG3-SB03-01	BG3-SB04-01	BG3-SB05-01	BG3-SB06-01	BG3-SB07-01	BG3-SB08-01
Date sampled	07-26-2001	07-26-2001	07-27-2001	07-23-2001	07-24-2001	07-24-2001	07-25-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Inorganics (mg/kg)																
Aluminum	12600	4820	8350	9770	8040	6310	9990	6830	6320	4970	3620	3290	9110	1920	3610	5800
Antimony	.71 B	.54 B	.86 B	.37 U	.60 B	.76 B	.47 U	.36 U	.38 U	.37 U	.37 U	.35 U	.38 U	.35 U	.36 U	.37 U
Arsenic	4.2	1.6 B	6.8	5	3	2.4	4.2	.86 B	.65 B	.87 B	1.1 B	2.1	1.2 B	.4 B	1.2 B	1.2 B
Barium	32.4 J	32.2 J	48.5	37.1 J	35.2 J	33.7 J	42 J	18.3 J	17.4 J	38.3 J	28 J	21.7 J	8.2 J	19.4 J	28.7 J	18.8 J
Beryllium	.55 B	.65 B	.94 B	.64 B	.71 B	.69 B	.7 B	.12 B	.16 B	.22 B	.23 B	.40 B	.1 B	.28 B	.19 B	.22 B
Cadmium	.091 U	.081 U	.093 UL	.087 U	.09 U	.088 U	.11 U	.086 U	.089 U	.087 U	.087 U	.083 U	.09 U	.083 U	.084 U	.087 U
Calcium	479 J	231 J	162000	474 J	363 J	546 J	819 J	76.8 J	42.3 B	112 J	234 J	102 J	304 J	96.4 J	242 J	56.4 J
Chromium	15.2	7.2	24.5	15.2	11.4	9.8	15.1	7.8	7.3	4.7	5.1	7.6	15.6	2.9	5.3	7.2
Cobalt	3.1 J	7.3 J	4 J	2.1 J	2.4 J	1.7 J	2.2 J	.39 B	.4 B	1.3 J	2.8 J	4 J	.16 U	2.4 J	1.5 J	.84 J
Copper	3.9 B	.61 B	5 J	2.4 B	.92 B	.75 B	1.4 B	1.2 J	1.1 J	.71 J	.93 J	.59 B	2.2 J	.95 J	1.5 J	1.1 J
Cyanide	.057 B	.044 U	.11 B	.1 B	.044 U	.042 U	.056 U	.043 U	.1 B	.066 B	.063 B	.041 U	.047 U	.04 B	.21 B	.045 U
Iron	18300	7320	20900	18200	12800	11200	19500	8390	7680	4790	3940	4790	12500	1740	5520	6780
Lead	8.1	4.1	6.9 L	6.1	6	6.6	8.3	5.5	5.6	6.1	3.6	5	6.7	3.2	4.5	5.3
Magnesium	667 J	563 J	3340	819 J	649 J	455 J	550 J	175 J	172 J	206 J	241 J	251 J	218 J	115 J	300 J	202 J
Manganese	101	135	104	60.8	31.8	26.1	37.6	8.4	13.5	30.4	51.1	40	5.4	49.3	38.3	14.4
Mercury	.11 B	.082 B	.12 B	.046 UL	.082 B	.076 B	.1 B	.049 UL	.056 UL	.056 UL	.044 UL	.054 UL	.044 UL	.036 UL	.038 UL	.048 UL
Nickel	6.8 J	5.3 J	9.1 J	5 J	4 J	2.9 J	3.5 J	1.1 B	1.1 B	1.8 J	2.4 J	3.8 J	.99 B	.2 J	.2 J	1.9 J
Potassium	459 J	373 J	2100	563 J	409 J	298 J	389 J	179 B	167 B	131 B	167 B	177 B	278 J	78.8 B	193 B	173 B
Selenium	.64 UL	.57 UL	.65 UL	.61 UL	.87 J	.61 UL	.77 UL	.6 UL	.62 UL	.61 UL	.61 UL	.58 UL	.63 UL	.58 UL	.59 UL	.61 UL
Silver	.11 U	.1 U	.12 U	.11 UL	.11 U	.11 U	.14 U	.11 UL	.11 UL	.11 UL	.11 UL	.1 UL	.11 UL	.1 UL	.1 UL	.11 UL
Sodium	305 B	268 B	815 B	152 B	297 B	299 B	371 B	191 B	205 B	214 B	170 B	162 B	210 B	177 B	217 B	208 B
Thallium	.94 UL	.83 UL	.95 UL	.89 UL	.92 UJ	.9 UL	1.1 UL	.88 UL	.92 UL	.9 UL	.89 UL	.85 UL	.92 UL	.85 UL	.86 UL	.89 UL
Vanadium	28.5	10.7	20.6	26	19.8	16.5	28	17.6	16.3	10 J	7.9 J	7.5 J	36.0	3.4 J	9.6 J	12.7
Zinc	18.4	10.6	30.8	16.0	9.8	7.5 L	10.2	5 L	5 L	5.2 L	5.7 L	6.6 L	5 L	4 B	5.8 L	6.9 L

Notes:
B - Analyte not detected above th
J - Analyte present, value may or
L - Analyte present, value may be
U - The material was analyzed for
UL - Analyte not detected, quantit
UJ - Analyte not detected, quantit
mg/kg - Milograms per kilogram

Table A-4
CAX Subsurface Soil Inorganic Raw Anlytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG3-SB09-01	BG3-SB10-01	BG4-SB01-01	BG4-SB01-01D	BG4-SB02-01	BG4-SB03-01	BG4-SB04-01	BG4-SB05-01	BG4-SB06-01	BG4-SB07-01	BG4-SB08-01	BG4-SB09-01	BG4-SB10-01
Date sampled	07-23-2001	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Inorganics (mg/kg)													
Aluminum	6280	10900	7380	2120	5540	10700	8460	2310	11000	6870	6680	4740	7900
Antimony	.35 U	.38 U	.5 B	.34 UL	.38 U	.38 U	.82 B	.36 U	.65 B	.49 B	.38 U	.36 U	.53 B
Arsenic	1.3 B	1.5 B	18.6	.24 U	1.1 B	2 J	3	.46 B	1.4 B	1.3 B	2.4	1.2 B	13.8
Barium	47.8	26.1 J	15.3 J	27.4 J	41 J	33.5 J	58.0	20.4 J	10.8 J	19.4 J	21.1 J	48.2	46
Beryllium	.66 B	.22 B	.89 B	.43 B	.4 B	.33 B	.36 B	.22 B	.12 B	.13 B	.16 B	.6 B	.73 B
Cadmium	.082 U	.089 U	.084 U	.079 U	.088 U	.088 U	.083 U	.086 U	.088 U	.086 U	.09 U	.085 U	.083 U
Calcium	151 J	111 J	2080	203 J	261 J	345 J	362 J	87.2 J	300 J	138 J	481 J	123 J	493 J
Chromium	4.6	11.9	25.6	2.6	6.1	12	10.2	2.8	10.8	7.8	8.3	3.5 B	18.4
Cobalt	8.1 J	.92 B	4.4 J	1.9 J	2.6 J	1.1 J	2.3 J	1.2 J	.5 J	1.1 J	2 J	7 J	6 J
Copper	1.3 J	2.4 J	3.2 J	1.5 B	1.2 B	1.8 B	2.8 B	.43 B	1.5 B	1.7 B	3.1 J	.68 B	2.9 J
Cyanide	.44 B	.045 U	.042 U	.041 U	.044 U	.045 U	.11 B	.043 U	.045 U	.041 U	.075 B	.1 B	.046 B
Iron	5070	12500	31700	2080	6700	12800	12400	2310	10200	7560	11000	3870	23600
Lead	5.5	6.6	7.8	2.8	6.8	5.8	5.5	3.8	6.2	5.1	5.4	6.1	8.1
Magnesium	324 J	392 J	754 J	203 J	371 J	414 J	471 J	193 J	273 J	318 J	322 J	178 J	447 J
Manganese	208	16.4	42	195	86.1	27.7	67.8	39	7.4	21.6	62.2	154	137
Mercury	.048 UL	.039 UL	.053 UL	.042 UL	.084 B	.14	.12 B	.075 B	.093 B	.1 B	.11 B	.066 B	.092 B
Nickel	6.4 J	2.6 J	8.5	1.8 J	4.9 J	3 J	4.9 J	1.5 J	1.8 J	2.4 J	3.3 J	2.5 J	6.3 J
Potassium	168 B	253 B	764 J	109 B	259 B	276 J	367 J	102 B	191 B	197 B	287 J	117 B	471 J
Selenium	.58 UL	.62 UL	.59 UL	.55 UL	.62 UL	.62 UL	.58 UL	.6 UL	.61 UL	.60 UL	.63 UL	.59 UL	.64 J
Silver	.1 UL	.11 UL	.10 U	.099 U	.11 U	.11 U	.1 U	.11 U	.11 U	.11 U	.11 U	.11 U	.1 U
Sodium	135 B	199 B	299 B	314 B	303 B	337 B	294 B	300 B	332 B	373 B	332 B	222 B	292 B
Thallium	.84 UL	.91 UL	.86 UL	.81 UL	.90 UL	.90 UL	.85 UL	.88 UL	.9 UL	.89 UL	.92 UL	.87 UL	.85 UL
Vanadium	7.2 J	22.3	35.1	2.5 J	11.9	22.0	18.9	4.7 J	30	14.6	17.8	5.8 J	30.8
Zinc	13.8	12.3	32	3.8 B	7.1 L	10.1	10.3	2.5 B	3.8 B	6.3 L	8.2 L	4.5 L	19.9

Notes:
B - Analyte not detected above th
J - Analyte present, value may or
L - Analyte present, value may be
U - The material was analyzed for
UL - Analyte not detected, quantit
UJ - Analyte not detected, quantit
mg/kg - Milograms per kilogram

Table A-5
CAX Subsurface Soil Organic Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG1-SB01-01	BG1-SB02-01	BG1-SB03-01	BG1-SB04-01	BG1-SB05-01	BG1-SB05-01D	BG1-SB06-01	BG1-SB07-01	BG1-SB08-01	BG1-SB09-01	BG1-SB10-01	BG2-SB01-01	BG2-SB01-01D	BG2-SB02-01	BG2-SB03-01
Date sampled	08-06-2001	07-23-2001	07-23-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-27-2001	07-27-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Volatile Organic Compounds (ug/kg)															
1,1,1-Trichloroethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,1,2,2-Tetrachloroethane	2 J	13 U	29 U	4 J	15 U	13 U	15 U	12 U	3 J	12 U	15 U	11 U	13 U	11 U	11 U
1,1,2-Trichloroethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,1,2-trichloro-1,2,2-trifluo	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,1-Dichloroethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,1-Dichloroethene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,2,4-Trichlorobenzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,2-Dibromo-3-Chloropropane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,2-Dibromoethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,2-Dichlorobenzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,2-Dichloroethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,2-Dichloropropane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,3-Dichlorobenzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
1,4-Dichlorobenzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
2-Butanone	13 U	13 U	29 U	5 J	15 U	13 U	4 J	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
2-Hexanone	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
4-Methyl-2-Pentanone	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Acetone	12 B	5 J	42	14 B	16 B	9 B	15 B	12 U	14 U	9 J	15 U	11 U	6 J	11 U	11 U
Benzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Bromodichloromethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Bromoform	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Bromomethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Carbon Disulfide	13 U	13 U	14 J	15 U	15 U	13 U	15 U	12 U	14 U	2 J	15 U	11 U	13 U	11 U	11 U
Carbon Tetrachloride	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Chlorobenzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Chloroethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Chloroform	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Chloromethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Cyclohexane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Dibromochloromethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Dichlorodifluoromethane	13 U	13 U	29 U	15 UJ	15 UJ	13 UJ	15 UJ	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Ethylbenzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Isopropylbenzene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	1 J
Methyl Acetate	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Methyl-tert-butyl ether	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Methylcyclohexane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Methylene Chloride	8 B	13 U	29 U	26 B	13 B	3 B	4 B	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Styrene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Tetrachloroethene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Toluene	8 B	13 U	29 U	11 B	16 B	7 B	2 B	12 U	3 B	3 J	2 B	1 B	13 U	11 U	2 B
Trichloroethene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Trichlorofluoromethane	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Vinyl Chloride	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
Xylene (Total)	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
cis-1,2-Dichloroethene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
cis-1,3-Dichloropropene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
trans-1,2-Dichloroethene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U
trans-1,3-Dichloropropene	13 U	13 U	29 U	15 U	15 U	13 U	15 U	12 U	14 U	12 U	15 U	11 U	13 U	11 U	11 U

Table A-5
CAX Subsurface Soil Organic Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG1-SB01-01	BG1-SB02-01	BG1-SB03-01	BG1-SB04-01	BG1-SB05-01	BG1-SB05-01D	BG1-SB06-01	BG1-SB07-01	BG1-SB08-01	BG1-SB09-01	BG1-SB10-01	BG2-SB01-01	BG2-SB01-01D	BG2-SB02-01	BG2-SB03-01
Date sampled	08-06-2001	07-23-2001	07-23-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-27-2001	07-27-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Semivolatile Organic Compounds (ug/kg)															
1,1'-Biphenyl	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2,2'-oxybis(1-Chloropropane)	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2,4,5-Trichlorophenol	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
2,4,6-Trichlorophenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2,4-Dichlorophenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2,4-Dimethylphenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2,4-Dinitrophenol	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
2,4-Dinitrotoluene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2,6-Dinitrotoluene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2-Chloronaphthalene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2-Chlorophenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2-Methylnaphthalene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2-Methylphenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
2-Nitroaniline	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
2-Nitrophenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
3,3'-Dichlorobenzidine	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
3-Nitroaniline	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
4,6-Dinitro-2-methylphenol	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
4-Bromophenyl-phenylether	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
4-Chloro-3-methylphenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
4-Chloroaniline	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
4-Chlorophenyl-phenylether	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
4-Methylphenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
4-Nitroaniline	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
4-Nitrophenol	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
Acenaphthene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Acenaphthylene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Acetophenone	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Anthracene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Atrazine	430 UJ	410 UJ	940 UJ	510 UJ	510 UJ	440 UJ	490 UJ	380 UJ	450 UJ	970 UJ	490 UJ	350 UJ	420 UJ	380 UJ	350 UJ
Benzaldehyde	430 U	410 UL	940 U	100 J	510 U	440 U	53 J	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Benzo(a)anthracene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Benzo(a)pyrene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Benzo(b)fluoranthene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Benzo(g,h,i)perylene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Benzo(k)fluoranthene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Butylbenzylphthalate	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Caprolactam	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Carbazole	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Chrysene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Di-n-butylphthalate	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Di-n-octylphthalate	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Dibenzo(a,h)anthracene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Dibenzofuran	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Diethylphthalate	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Dimethylphthalate	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Fluoranthene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Fluorene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Hexachlorobenzene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Hexachlorobutadiene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Hexachlorocyclopentadiene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 UJ	420 UJ	380 U	350 U
Hexachloroethane	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Indeno(1,2,3-cd)pyrene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Isophorone	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
N-Nitroso-di-n-propylamine	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
N-nitrosodiphenylamine	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Naphthalene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Nitrobenzene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Pentachlorophenol	1100 U	1000 UL	2400 U	1300 U	1300 U	1100 U	1200 U	970 U	1100 U	2400 U	1200 U	880 U	1100 U	950 U	890 U
Phenanthrene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Phenol	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
Pyrene	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
bis(2-Chloroethoxy)methane	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
bis(2-Chloroethyl)ether	430 U	410 UL	940 U	510 U	510 U	440 U	490 U	380 U	450 U	970 U	490 U	350 U	420 U	380 U	350 U
bis(2-Ethylhexyl)phthalate	120 B	180 B	350 B	160 B	120 B	54 B	160 B	57 B	72 B	970 U	75 B	670	70 J	380 U	610

Table A-5
CAX Subsurface Soil Organic Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BG1-SB01-01	BG1-SB02-01	BG1-SB03-01	BG1-SB04-01	BG1-SB05-01	BG1-SB05-01D	BG1-SB06-01	BG1-SB07-01	BG1-SB08-01	BG1-SB09-01	BG1-SB10-01	BG2-SB01-01	BG2-SB01-01D	BG2-SB02-01	BG2-SB03-01
Date sampled	08-06-2001	07-23-2001	07-23-2001	08-06-2001	08-06-2001	08-06-2001	08-06-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-27-2001	07-27-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Pesticides (ug/kg)															
4,4'-DDD	4.3 U	4.1 U	9.4 U	5.1 U	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	3.5 U
4,4'-DDE	4.3 U	4.1 U	3.9 J	1.7 J	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	2.7 J	4.8 U	3.5 U	4.2 U	3.8 U	3.5 U
4,4'-DDT	4.3 U	4.1 U	9.4 U	5.1 U	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	3.5 U
Aldrin	2.2 U	2.1 U	4.8 U	2.6 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
Dieldrin	4.3 U	4.1 U	9.4 U	5.1 U	5.1 U	2.5 J	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	1.9 J
Endosulfan I	2.2 U	2.1 U	2.3 J	2.6 U	1.2 J	1.2 J	.96 J	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
Endosulfan II	4.3 U	4.1 U	9.4 U	5.1 U	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	3.5 U
Endosulfan sulfate	4.3 U	4.1 U	3.4 J	5.1 U	2.7 J	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	3.5 U
Endrin	4.3 U	4.1 U	9.4 U	5.1 U	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	3.5 U
Endrin aldehyde	4.3 U	4.1 U	9.4 U	5.1 U	5.1 U	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	2.7 J
Endrin ketone	4.3 U	4.1 U	9.4 U	5.1 U	2.5 J	4.4 U	4.9 U	3.8 U	4.5 U	9.7 U	4.8 U	3.5 U	4.2 U	3.8 U	3.5 U
Heptachlor	2.2 U	2.1 U	4.8 U	2.6 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
Heptachlor epoxide	2.2 U	2.1 U	4.8 U	2.6 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
Methoxychlor	22 U	21 U	48 U	26 U	26 U	23 U	25 U	20 U	23 U	50 U	25 U	18 U	22 U	20 U	18 U
Toxaphene	220 U	210 U	480 U	260 U	260 U	230 U	250 U	200 U	230 U	500 U	250 U	180 U	220 U	200 U	180 U
alpha-BHC	1.3 J	2.1 U	4.8 U	2.6 U	.81 J	.6 J	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
alpha-Chlordane	2.2 U	2.1 U	4.8 U	2.6 U	1.5 J	.98 J	1.4 J	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
beta-BHC	2.2 U	2.1 U	4.8 U	2.6 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
delta-BHC	.8 J	2.1 U	4.8 U	2.6 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
gamma-BHC (Lindane)	2.2 U	2.1 U	4.8 U	2.6 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
gamma-Chlordane	2.2 U	2.1 U	4.8 U	2.6 U	2.6 U	2.3 U	2.5 U	2 U	2.3 U	5 U	2.5 U	1.8 U	2.2 U	2 U	1.8 U
PCBs (ug/kg)															
Aroclor-1016	43 U	41 U	94 U	51 U	51 U	44 U	49 U	38 U	45 U	97 U	48 U	35 U	42 U	38 U	35 U
Aroclor-1221	87 U	84 U	190 U	100 U	100 U	89 U	100 U	78 U	92 U	200 U	98 U	71 U	85 U	77 U	72 U
Aroclor-1232	43 U	41 U	94 U	51 U	51 U	44 U	49 U	38 U	45 U	97 U	48 U	35 U	42 U	38 U	35 U
Aroclor-1242	43 U	41 U	94 U	51 U	51 U	44 U	49 U	38 U	45 U	97 U	48 U	35 U	42 U	38 U	35 U
Aroclor-1248	43 U	41 U	94 U	51 U	51 U	44 U	49 U	38 U	45 U	97 U	48 U	35 U	42 U	38 U	35 U
Aroclor-1254	43 U	41 U	94 U	51 U	51 U	44 U	49 U	38 U	45 U	97 U	48 U	35 U	42 U	38 U	35 U
Aroclor-1260	43 U	41 U	94 U	51 U	51 U	44 U	49 U	38 U	45 U	97 U	48 U	35 U	42 U	38 U	35 U
Conventional (mg/kg)															
Total Organic Carbon	28660	2310	133000	34600	40740	NA	52360	3030	10100	55100	10600	4338	NA	5010	6030

Notes:
NA - not analyzed
B - Analyte not detected above the level reported in blanks
J - Analyte present, value may or may not be accurate or precise
U - The material was analyzed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
UJ - Analyte not detected, quantitation limit may be inaccurate
µg/kg - Micrograms per kilogram

Sample ID	BG2-SB04-01	BG2-SB05-01	BG2-SB06-01	BG2-SB07-01	BG2-SB08-01	BG2-SB09-01	BG2-SB10-01	BG3-SB01-01	BG3-SB01-01D	BG3-SB02-01	BG3-SB03-01	BG3-SB04-01	BG3-SB05-01	BG3-SB06-01	BG3-SB07-01
Date sampled	07-26-2001	07-26-2001	07-27-2001	07-23-2001	07-24-2001	07-24-2001	07-25-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Volatile Organic Compounds (ug/kg)															
1,1,1-Trichloroethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,1,2,2-Tetrachloroethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,1,2-Trichloroethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,1,2-trichloro-1,2,2-trifluo	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,1-Dichloroethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,1-Dichloroethene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,2,4-Trichlorobenzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,2-Dibromo-3-Chloropropane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,2-Dibromoethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,2-Dichlorobenzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,2-Dichloroethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,2-Dichloropropane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,3-Dichlorobenzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
1,4-Dichlorobenzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
2-Butanone	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
2-Hexanone	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
4-Methyl-2-Pentanone	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Acetone	12 U	11 U	4 J	11 U	11 U	11 U	14 U	9 B	5 B	11 U	11 U	11 U	12 U	11 U	11 U
Benzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Bromodichloromethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Bromoform	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Bromomethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Carbon Disulfide	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Carbon Tetrachloride	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Chlorobenzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Chloroethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Chloroform	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Chloromethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Cyclohexane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Dibromochloromethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Dichlorodifluoromethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Ethylbenzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Isopropylbenzene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Methyl Acetate	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Methyl-tert-butyl ether	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Methylcyclohexane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Methylene Chloride	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	1 J	11 U	11 U	12 U	11 U	11 U
Styrene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	4 J	4 J	11 U	11 U	11 U	12 U	11 U	11 U
Tetrachloroethene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Toluene	12 U	1 B	1 B	11 U	1 B	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Trichloroethene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Trichlorofluoromethane	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Vinyl Chloride	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
Xylene (Total)	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
cis-1,2-Dichloroethene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
cis-1,3-Dichloropropene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
trans-1,2-Dichloroethene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U
trans-1,3-Dichloropropene	12 U	11 U	13 U	11 U	11 U	11 U	14 U	11 U	11 U	11 U	11 U	11 U	12 U	11 U	11 U

Sample ID	BG2-SB04-01	BG2-SB05-01	BG2-SB06-01	BG2-SB07-01	BG2-SB08-01	BG2-SB09-01	BG2-SB10-01	BG3-SB01-01	BG3-SB01-01D	BG3-SB02-01	BG3-SB03-01	BG3-SB04-01	BG3-SB05-01	BG3-SB06-01	BG3-SB07-01
Date sampled	07-26-2001	07-26-2001	07-27-2001	07-23-2001	07-24-2001	07-24-2001	07-25-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Semivolatile Organic Compounds (ug/kg)															
1,1'-Biphenyl	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2,2'-oxybis(1-Chloropropane)	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2,4,5-Trichlorophenol	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 U	930 U	930 U	900 U	890 U	980 U	870 U	890 U
2,4,6-Trichlorophenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2,4-Dichlorophenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2,4-Dimethylphenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2,4-Dinitrophenol	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 U	930 U	930 U	900 U	890 U	980 U	870 U	890 U
2,4-Dinitrotoluene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2,6-Dinitrotoluene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2-Chloronaphthalene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2-Chlorophenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2-Methylnaphthalene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2-Methylphenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
2-Nitroaniline	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 U	930 U	930 U	900 U	890 U	980 U	870 U	890 U
2-Nitrophenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 UJ	350 U
3,3'-Dichlorobenzidine	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
3-Nitroaniline	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 U	930 U	930 U	900 U	890 U	980 U	870 U	890 U
4,6-Dinitro-2-methylphenol	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 U	930 U	930 U	900 U	890 U	980 U	870 U	890 U
4-Bromophenyl-phenylether	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
4-Chloro-3-methylphenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
4-Chloroaniline	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
4-Chlorophenyl-phenylether	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
4-Methylphenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
4-Nitroaniline	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 U	930 U	930 U	900 U	890 U	980 U	870 U	890 U
4-Nitrophenol	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 UJ	930 UJ	930 UJ	900 UJ	890 UJ	980 UJ	870 U	890 UJ
Acenaphthene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Acenaphthylene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Acetophenone	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Anthracene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Atrazine	390 UJ	360 UJ	420 UJ	370 UJ	370 UJ	360 UJ	460 UJ	380 UJ	370 UJ	370 UJ	360 UJ	350 UJ	390 UJ	350 UJ	350 UJ
Benzaldehyde	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Benzo(a)anthracene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Benzo(a)pyrene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Benzo(b)fluoranthene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Benzo(g,h,i)perylene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Benzo(k)fluoranthene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Butylbenzylphthalate	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Caprolactam	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Carbazole	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Chrysene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Di-n-butylphthalate	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Di-n-octylphthalate	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Dibenzo(a,h)anthracene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Dibenzofuran	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Diethylphthalate	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Dimethylphthalate	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Fluoranthene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Fluorene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Hexachlorobenzene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Hexachlorobutadiene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Hexachlorocyclopentadiene	390 UJ	360 UJ	420 UJ	370 U	370 UJ	360 UJ	460 UJ	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Hexachloroethane	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Indeno(1,2,3-cd)pyrene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Isophorone	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
N-Nitroso-di-n-propylamine	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
N-nitrosodiphenylamine	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Naphthalene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Nitrobenzene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Pentachlorophenol	990 U	910 U	1100 U	930 U	930 U	910 U	1200 U	940 U	930 U	930 U	900 U	890 U	980 U	870 U	890 U
Phenanthrene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Phenol	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
Pyrene	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
bis(2-Chloroethoxy)methane	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
bis(2-Chloroethyl)ether	390 U	360 U	420 U	370 U	370 U	360 U	460 U	380 U	370 U	370 U	360 U	350 U	390 U	350 U	350 U
bis(2-Ethylhexyl)phthalate	160 B	67 B	120 J	180 J	58 J	73 J	660	380 U	370 U	370 U	360 U	37 B	58 J	350 U	140 J

Sample ID	BG2-SB04-01	BG2-SB05-01	BG2-SB06-01	BG2-SB07-01	BG2-SB08-01	BG2-SB09-01	BG2-SB10-01	BG3-SB01-01	BG3-SB01-01D	BG3-SB02-01	BG3-SB03-01	BG3-SB04-01	BG3-SB05-01	BG3-SB06-01	BG3-SB07-01
Date sampled	07-26-2001	07-26-2001	07-27-2001	07-23-2001	07-24-2001	07-24-2001	07-25-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001	07-23-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Pesticides (ug/kg)															
4,4'-DDD	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.1 J	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
4,4'-DDE	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
4,4'-DDT	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
Aldrin	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
Dieldrin	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	2.3 J	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
Endosulfan I	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
Endosulfan II	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
Endosulfan sulfate	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
Endrin	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
Endrin aldehyde	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
Endrin ketone	3.9 U	3.6 U	4.2 U	30 U	3.7 U	3.6 U	4.6 U	3.8 U	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.5 U	3.6 U
Heptachlor	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
Heptachlor epoxide	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
Methoxychlor	20 U	18 U	22 U	150 U	19 U	19 U	24 U	19 U	19 U	19 U	18 U	18 U	20 U	18 U	18 U
Toxaphene	200 U	180 U	220 U	1500 U	190 U	190 U	240 U	190 U	190 U	190 U	180 U	180 U	200 U	180 U	180 U
alpha-BHC	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
alpha-Chlordane	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
beta-BHC	.74 J	1.8 U	.79 J	15 U	1.9 U	.99 J	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
delta-BHC	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
gamma-BHC (Lindane)	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
gamma-Chlordane	2 U	1.8 U	2.2 U	15 U	1.9 U	1.9 U	2.4 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U	2 U	1.8 U	1.8 U
PCBs (ug/kg)															
Aroclor-1016	39 U	36 U	42 U	300 U	37 U	36 U	46 U	38 U	37 U	37 U	36 U	36 U	39 U	35 U	36 U
Aroclor-1221	80 U	73 U	85 U	610 U	75 U	74 U	94 U	76 U	75 U	75 U	73 U	72 U	79 U	70 U	72 U
Aroclor-1232	39 U	36 U	42 U	300 U	37 U	36 U	46 U	38 U	37 U	37 U	36 U	36 U	39 U	35 U	36 U
Aroclor-1242	39 U	36 U	42 U	300 U	37 U	36 U	46 U	38 U	37 U	37 U	36 U	36 U	39 U	35 U	36 U
Aroclor-1248	39 U	36 U	42 U	300 U	37 U	36 U	46 U	38 U	37 U	37 U	36 U	36 U	39 U	35 U	36 U
Aroclor-1254	39 U	36 U	42 U	300 U	37 U	36 U	46 U	38 U	37 U	37 U	36 U	36 U	39 U	35 U	36 U
Aroclor-1260	39 U	36 U	42 U	300 U	37 U	36 U	46 U	38 U	37 U	37 U	36 U	36 U	39 U	35 U	36 U
Conventional (mg/kg)															
Total Organic Carbon	5971	6795	9307	5530	4584	6682	8982	7050		3760	4680	3360	4490	6200	4730

Notes:
NA - not analyzed
B - Analyte not detected above the level reported i
J - Analyte present, value may or may not be accu
U - The material was analyzed for, but not detecte
UL - Analyte not detected, quantitation limit is prot
UJ - Analyte not detected, quantitation limit may b
µg/kg - Micrograms per kilogram

Sample ID	BG3-SB08-01	BG3-SB09-01	BG3-SB10-01	BG4-SB01-01	BG4-SB01-01D	BG4-SB02-01	BG4-SB03-01	BG4-SB04-01	BG4-SB05-01	BG4-SB06-01	BG4-SB07-01	BG4-SB08-01	BG4-SB09-01	BG4-SB10-01
Date sampled	07-23-2001	07-23-2001	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Volatile Organic Compounds (ug/kg)														
1,1,1-Trichloroethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2-trichloro-1,2,2-trifluo	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2,4-Trichlorobenzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dibromo-3-Chloropropane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dibromoethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichlorobenzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,3-Dichlorobenzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,4-Dichlorobenzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
2-Hexanone	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
4-Methyl-2-Pentanone	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Acetone	7 B	11 U	11 U	9 B	6 B	11 U	11 U	11 U	11 U	3 B	3 B	11 U	11 U	11 U
Benzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Bromoform	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Bromomethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Carbon Disulfide	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Carbon Tetrachloride	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Chlorobenzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Chloroethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Chloroform	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Chloromethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Cyclohexane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Dichlorodifluoromethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Isopropylbenzene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Methyl Acetate	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Methyl-tert-butyl ether	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Methylcyclohexane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Methylene Chloride	11 U	11 U	11 U	2 B	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Styrene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Tetrachloroethene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Toluene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Trichlorofluoromethane	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Vinyl Chloride	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Xylene (Total)	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
cis-1,2-Dichloroethene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
trans-1,2-Dichloroethene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
trans-1,3-Dichloropropene	11 U	11 U	11 U	13 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U

Sample ID	BG3-SB08-01	BG3-SB09-01	BG3-SB10-01	BG4-SB01-01	BG4-SB01-01D	BG4-SB02-01	BG4-SB03-01	BG4-SB04-01	BG4-SB05-01	BG4-SB06-01	BG4-SB07-01	BG4-SB08-01	BG4-SB09-01	BG4-SB10-01
Date sampled	07-23-2001	07-23-2001	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Semivolatile Organic Compounds (ug/kg)														
1,1'-Biphenyl	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2,2'-oxybis(1-Chloropropane)	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2,4,5-Trichlorophenol	930 U	920 U	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
2,4,6-Trichlorophenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2,4-Dichlorophenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2,4-Dimethylphenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2,4-Dinitrophenol	930 U	920 U	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
2,4-Dinitrotoluene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2,6-Dinitrotoluene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2-Chloronaphthalene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2-Chlorophenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2-Methylnaphthalene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2-Methylphenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
2-Nitroaniline	930 U	920 U	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
2-Nitrophenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
3,3'-Dichlorobenzidine	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
3-Nitroaniline	930 U	920 U	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
4,6-Dinitro-2-methylphenol	930 U	920 U	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
4-Bromophenyl-phenylether	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
4-Chloro-3-methylphenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
4-Chloroaniline	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
4-Chlorophenyl-phenylether	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
4-Methylphenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
4-Nitroaniline	930 U	920 U	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
4-Nitrophenol	930 UJ	920 UJ	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
Acenaphthene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Acenaphthylene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Acetophenone	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Anthracene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Atrazine	370 UJ	370 UJ	370 UJ	420 UJ	350 UJ	370 UJ	380 UJ	370 UJ	350 UJ	380 UJ	360 UJ	370 UJ	360 UJ	360 UJ
Benzaldehyde	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	51 J	360 U
Benzo(a)anthracene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Benzo(a)pyrene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Benzo(b)fluoranthene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Benzo(g,h,i)perylene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Benzo(k)fluoranthene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Butylbenzylphthalate	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Caprolactam	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Carbazole	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Chrysene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Di-n-butylphthalate	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Di-n-octylphthalate	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Dibenzo(a,h)anthracene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Dibenzofuran	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Diethylphthalate	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Dimethylphthalate	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Fluoranthene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Fluorene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Hexachlorobenzene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Hexachlorobutadiene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Hexachlorocyclopentadiene	370 U	370 U	370 U	420 U	350 U	370 UJ	380 UJ	370 UJ	350 UJ	380 UJ	360 UJ	370 UJ	360 UJ	360 UJ
Hexachloroethane	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Indeno(1,2,3-cd)pyrene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Isophorone	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
N-Nitroso-di-n-propylamine	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
N-nitrosodiphenylamine	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Naphthalene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Nitrobenzene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Pentachlorophenol	930 U	920 U	930 U	1100 U	870 U	920 U	950 U	920 U	890 U	940 U	900 U	930 U	900 U	900 U
Phenanthrene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
Phenol	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	340 J	53 J	360 U	370 U	360 U	360 U
Pyrene	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
bis(2-Chloroethoxy)methane	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
bis(2-Chloroethyl)ether	370 U	370 U	370 U	420 U	350 U	370 U	380 U	370 U	350 U	380 U	360 U	370 U	360 U	360 U
bis(2-Ethylhexyl)phthalate	41 J	370 U	160 B	470	350 U	130 J	380 U	410	100 B	55 B	130 J	580	57 J	85 B

Sample ID	BG3-SB08-01	BG3-SB09-01	BG3-SB10-01	BG4-SB01-01	BG4-SB01-01D	BG4-SB02-01	BG4-SB03-01	BG4-SB04-01	BG4-SB05-01	BG4-SB06-01	BG4-SB07-01	BG4-SB08-01	BG4-SB09-01	BG4-SB10-01
Date sampled	07-23-2001	07-23-2001	07-23-2001	07-26-2001	07-26-2001	07-27-2001	07-26-2001	07-26-2001	07-26-2001	07-26-2001	07-27-2001	07-27-2001	07-27-2001	07-26-2001
Depth	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"	6 - 24"
Pesticides (ug/kg)														
4,4'-DDD	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
4,4'-DDE	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
4,4'-DDT	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Aldrin	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Dieldrin	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endosulfan I	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Endosulfan II	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endosulfan sulfate	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endrin	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endrin aldehyde	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Endrin ketone	3.7 U	3.6 U	3.7 U	4.2 U	3.5 U	3.7 U	3.8 U	3.6 U	3.5 U	3.8 U	3.6 U	3.7 U	3.6 U	3.6 U
Heptachlor	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Heptachlor epoxide	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Methoxychlor	19 U	19 U	19 U	22 U	18 U	19 U	20 U	19 U	18 U	19 U	18 U	19 U	18 U	18 U
Toxaphene	190 U	190 U	190 U	220 U	180 U	190 U	200 U	190 U	180 U	190 U	180 U	190 U	180 U	180 U
alpha-BHC	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
alpha-Chlordane	2.4 J	1.9 U	4.7	2.2 U	1.8 U	1.9 U	2 U	.86 B	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	1.5 J
beta-BHC	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
delta-BHC	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
gamma-BHC (Lindane)	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
gamma-Chlordane	1.9 U	1.9 U	1.9 U	2.2 U	1.8 U	1.9 U	2 U	1.9 U	1.8 U	1.9 U	1.9 U	1.9 U	1.8 U	1.8 U
PCBs (ug/kg)														
Aroclor-1016	37 U	36 U	37 U	42 U	35 U	37 U	38 U	36 U	35 U	38 U	36 U	37 U	36 U	36 U
Aroclor-1221	75 U	74 U	75 U	86 U	71 U	74 U	77 U	74 U	72 U	76 U	73 U	75 U	72 U	72 U
Aroclor-1232	37 U	36 U	37 U	42 U	35 U	37 U	38 U	36 U	35 U	38 U	36 U	37 U	36 U	36 U
Aroclor-1242	37 U	36 U	37 U	42 U	35 U	37 U	38 U	36 U	35 U	38 U	36 U	37 U	36 U	36 U
Aroclor-1248	37 U	36 U	37 U	42 U	35 U	37 U	38 U	36 U	35 U	38 U	36 U	37 U	36 U	36 U
Aroclor-1254	37 U	36 U	37 U	42 U	35 U	37 U	38 U	36 U	35 U	38 U	36 U	37 U	36 U	36 U
Aroclor-1260	37 U	36 U	37 U	42 U	35 U	37 U	38 U	36 U	35 U	38 U	36 U	37 U	36 U	36 U
Conventional (mg/kg)														
Total Organic Carbon	6680	5200	8060	7332	NA	3019	3537	4282	3013	2967	2324	2665	4088	4010

Notes:
NA - not analyzed
B - Analyte not detected above the level reported i
J - Analyte present, value may or may not be accu
U - The material was analyzed for, but not detecte
UL - Analyte not detected, quantitation limit is prob
UJ - Analyte not detected, quantitation limit may b
µg/kg - Micrograms per kilogram

Table A-6
WPNSTA Yorktown Subsurface Soil Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Sample ID	BGSB04-01	BGSB04-01D	BGSB04-07	BGSB04-09	BGSB05-01	BGSB05-02	BGSB05-10	BGSB06-05	BGSB06-05D	BGSB06-11	BGSB07-04	BGSB07-11	BGSB07-16	BGSB08-07	BGGW08A-01	BGGW08A-01D
Date sampled	08/08/94	08/08/94	08/08/94	08/08/94	07/19/94	07/19/94	07/19/94	07/26/94	07/26/94	07/26/94	08/09/94	08/09/94	08/09/94	08/04/94	08/04/94	08/04/94
Depth	1-3 '	1-3 '	13-15 '	17-19 '	1-3 '	3-5 '	19-21 '	9-11 '	9-11 '	21-23 '	7-9 '	21-23 '	31-33 '	13-15 '	1-3 '	1-3 '
Inorganics (mg/kg)																
Aluminum	6270.0 J	6560.0 J	9270.0 J	14600.0 J	6840.0	14500.0	6940.0	18100.0	28200.0	17400.0	7010.0	4700.0	2710.0	10900.0	4550.0	4580.0
Antimony	8.1 R	8.1 R	8.5 L	10.5 R	8.9 UL	8.7 UL	9.2 UL	9.6 UL	9.5 UL	9.2 UL	8.9 UL	31.3 L	9.5 UL	9.6 UL	8.4 UL	8.2 UL
Arsenic	1.1 L	0.7 L	11.2 L	26.2 L	1.2 L	6.5	10.5	10.3	2.2 J	2.2 J	1.2 J	42.7	13.8	3.4	0.4 J	0.2 J
Barium	39.4 J	42.1 J	16.9 J	22.7 J	47.8 J	15.2 J	13.4 J	43.8 J	66.9	26.7 J	10.6 J	49.5 J	36.5 J	25.7 J	20.2 J	21.0 J
Beryllium	0.6 J	0.5 J	0.6 J	1.5	0.5 J	0.5 J	0.3 J	0.3 J	0.4 J	0.7 J	0.2 U	9.8	0.4 J	0.3 K	0.2 UL	0.2 UL
Cadmium	1.1 U	1.1 U	1.1 U	1.4 U	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 UL	1.5 UL	1.3 UL	1.3 U	1.1 U	1.1 U
Calcium	363.0 J	353.0 J	949.0 J	14000.0 J	378.0 J	182.0 J	174.0 J	44.1 J	53.4 J	133.0 J	28.9 J	20400.0	233000.0	91.2 J	165.0 J	168.0 J
Chromium	5.4	6.0	22.9	33.5	7.5	33.2	14.3	14.8	22.8	29.1	9.6	17.4	24.5	28.6 L	5.4 L	5.2 L
Cobalt	2.9 J	3.1 J	5.1 J	13.7 J	2.2 J	1.9 J	1.1 J	1.0 U	1.7 J	4.2 J	1.0 U	156.0	2.4 J	1.0 U	0.9 U	1.0 J
Copper	2.0 J	2.2 J	4.3 J	9.0	2.4 J	8.0 J	3.2 J	8.1	15.0	7.0	2.8 J	8.0	3.2 J	12.0 J	5.0 J	3.5 J
Iron	3810.0 J	4030.0 J	26100.0 J	51100.0 J	6130.0	33200.0	8730.0	11800.0	21700.0	31500.0	7400.0	NA	20100.0	22700.0	3850.0	3820.0
Lead	5.6 L	3.6 L	6.8 L	13.9 L	13.7 J	9.1 J	7.8 J	25.5 L	24.6 L	22.6 L	5.1	11.5	4.2	9.1	18.3	17.6
Magnesium	466.0 J	512.0 J	960.0 J	2870.0	462.0 J	791.0 J	729.0 J	446.0 J	704.0 J	1580.0	136.0 J	1890.0	2010.0	309.0 J	229.0 J	221.0 J
Manganese	284.0 J	254.0 J	94.5 J	353.0 J	85.6 J	17.7 J	5.6 J	11.1	15.3	78.3	3.5 J	2940.0	68.9	6.4	23.0	20.5
Mercury	0.1 UL	0.1 UL	0.1 UL	0.1 UL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UL	0.1 UL	0.1 UL
Nickel	6.2 K	6.7 K	8.3 K	24.1	3.8 U	7.5 J	5.0 J	5.0 J	10.5	15.0	3.8 U	145.0	4.2 J	4.4 K	3.6 U	4.5 K
Potassium	344.0 U	399.0 J	1210.0	2300.0	392.0 J	1320.0	1570.0	1480.0	1540.0	2560.0	532.0 J	1790.0	1730.0	1260.0 J	356.0 U	350.0 U
Selenium	0.3 L	0.2 UL	0.3 L	0.6 L	0.4 J	0.8 L	0.3 J	0.4 J	0.3 UL	0.5 J	0.6 L	0.4 L	0.3 UL	0.3 UL	0.2 UL	0.2 UL
Silver	0.9 U	0.9 U	0.9 U	1.1 U	1.1 J	2.1 J	1.5 J	1.0 U	1.0 U	1.1 J	1.0 U	2.4 J	1.0 U	1.0 U	0.9 U	0.9 U
Sodium	101.0 J	117.0 J	81.4 J	213.0 J	58.5 J	40.1 J	91.6 J	42.1 J	56.2 J	39.9 J	10.8 U	98.4 J	2180.0	76.9 J	22.0 J	17.2 J
Thallium	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	0.3 U	0.3 U	0.4 K	0.3 U	0.2 U	0.3 U	2.6 UL	0.3 U	0.2 U	0.2 U
Vanadium	7.8 J	8.6 J	35.5	54.4	12.9	35.0	17.5	44.3	44.9	55.0	16.0	1.2 U	15.4 K	70.3 L	9.5 L	9.2 L
Zinc	14.3	12.6	26.7	55.1	11.1	17.9	7.2	12.3	19.6	39.5	3.6 J	330.0	25.5	9.5	10.5	7.9
Cyanide	0.5 U	0.5 U	0.6 U	0.7 U	0.6 U	0.6 U	0.6 U	0.7 U	0.7 U	0.6 U	0.6 K	0.8 U	0.6 U	0.7 U	0.6 U	0.6 U

Notes:
NA - not analyzed
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
R - Unreliable Result
U - The material was analyzed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
mg/kg - Milograms per kilogram

Table A-7
Cornwallis Cave Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKL-GW01-CC		YBKL-GW02-CC	YBKG-GW01-CC		YBKG-GW03A-CC	YBKG-GW05A-CC	YBKG-GW06A-CC	YBKG-GW07A-CC	YBKG-GW07-CC	YBKG-GW08A-CC	YBKG-GW10-CC
Sample ID	YBKL-GW01-CC-0809	YBKL-GW01P-CC-0809	YBKL-GW02-CC-0809	YBKG-GW01-CC-0809	YBKG-GW01P-CC-0809	YBKG-GW03A-CC-0809	YBKG-GW05A-CC-0809	YBKG-GW06A-CC-0809	YBKG-GW07A-CC-0809	YBKG-GW07-CC-0809	YBKG-GW08A-CC-0809	YBKG-GW10-CC-0809
Sample Date	08/19/09	08/19/09	08/20/09	08/14/09	08/14/09	08/17/09	08/18/09	08/14/09	08/13/09	08/13/09	08/17/09	08/19/09
Volatile Organic Compounds (µg/L)												
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.29 J
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	4.8 B	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.1 B	5 R
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	0.24 J	0.35 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.23 J	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	0.31 B	0.33 B	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.41 B
Chloromethane	1 U	1 U	0.59 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	6.4
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon-12)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.41 B	1 U	1 U
Isopropylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl-tert-butyl ether (MTBE)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.26 J
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.21 B	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.52 B
Trichlorofluoromethane(Freon-11)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene, total	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table A-7
Cornwallis Cave Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKL-GW01-CC		YBKL-GW02-CC	YBKG-GW01-CC		YBKG-GW03A-CC	YBKG-GW05A-CC	YBKG-GW06A-CC	YBKG-GW07A-CC	YBKG-GW07-CC	YBKG-GW08A-CC	YBKG-GW10-CC
Sample ID	YBKL-GW01-CC-0809	YBKL-GW01P-CC-0809	YBKL-GW02-CC-0809	YBKG-GW01-CC-0809	YBKG-GW01P-CC-0809	YBKG-GW03A-CC-0809	YBKG-GW05A-CC-0809	YBKG-GW06A-CC-0809	YBKG-GW07A-CC-0809	YBKG-GW07-CC-0809	YBKG-GW08A-CC-0809	YBKG-GW10-CC-0809
Sample Date	08/19/09	08/19/09	08/20/09	08/14/09	08/14/09	08/17/09	08/18/09	08/14/09	08/13/09	08/13/09	08/17/09	08/19/09
Semivolatile Organic Compounds (µg/L)												
1,1-Biphenyl	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2,2'-Oxybis(1-chloropropane)	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2,4,5-Trichlorophenol	24 U	24 U	24 U	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
2,4,6-Trichlorophenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2,4-Dichlorophenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2,4-Dimethylphenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2,4-Dinitrophenol	24 UL	24 UL	24 UL	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
2,4-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Chloronaphthalene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2-Chlorophenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2-Methylnaphthalene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2-Methylphenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
2-Nitroaniline	24 U	24 U	24 U	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
2-Nitrophenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
3,3'-Dichlorobenzidine	9.4 U	9.4 U	9.4 R	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
3-Nitroaniline	24 U	24 U	24 U	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
4,6-Dinitro-2-methylphenol	24 UL	24 UL	24 UL	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
4-Bromophenyl-phenylether	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
4-Chloro-3-methylphenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
4-Chloroaniline	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
4-Chlorophenyl-phenylether	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
4-Methylphenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
4-Nitroaniline	24 U	24 U	24 U	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
4-Nitrophenol	24 U	24 U	24 U	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
Acenaphthene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Acenaphthylene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Acetophenone	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Anthracene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Atrazine	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Benzaldehyde	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Benzo(a)anthracene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Benzo(a)pyrene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Benzo(b)fluoranthene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Benzo(g,h,i)perylene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Benzo(k)fluoranthene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
bis(2-Chloroethoxy)methane	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
bis(2-Chloroethyl)ether	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
bis(2-Ethylhexyl)phthalate	1.2 J	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	1.1 J	10 U	9.6 U	9.4 U
Butylbenzylphthalate	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Caprolactam	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Carbazole	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Chrysene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Dibenz(a,h)anthracene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Dibenzofuran	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Diethylphthalate	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Dimethyl phthalate	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Di-n-butylphthalate	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Di-n-octylphthalate	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Fluoranthene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Fluorene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Hexachlorobenzene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Hexachlorobutadiene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Hexachlorocyclopentadiene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Hexachloroethane	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Indeno(1,2,3-cd)pyrene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Isophorone	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Naphthalene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
n-Nitroso-di-n-propylamine	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
n-Nitrosodiphenylamine	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Nitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pentachlorophenol	24 U	24 U	24 U	24 U	24 U	24 U	24 U	26 U	24 U	25 U	24 U	24 U
Phenanthrene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Phenol	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U
Pyrene	9.4 U	9.4 U	9.4 U	9.5 U	9.7 U	9.6 U	9.5 U	10 U	9.4 U	10 U	9.6 U	9.4 U

Table A-7
Cornwallis Cave Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKL-GW01-CC		YBKL-GW02-CC	YBKG-GW01-CC		YBKG-GW03A-CC	YBKG-GW05A-CC	YBKG-GW06A-CC	YBKG-GW07A-CC	YBKG-GW07-CC	YBKG-GW08A-CC	YBKG-GW10-CC
Sample ID	YBKL-GW01-CC-0809	YBKL-GW01P-CC-0809	YBKL-GW02-CC-0809	YBKG-GW01-CC-0809	YBKG-GW01P-CC-0809	YBKG-GW03A-CC-0809	YBKG-GW05A-CC-0809	YBKG-GW06A-CC-0809	YBKG-GW07A-CC-0809	YBKG-GW07-CC-0809	YBKG-GW08A-CC-0809	YBKG-GW10-CC-0809
Sample Date	08/19/09	08/19/09	08/20/09	08/14/09	08/14/09	08/17/09	08/18/09	08/14/09	08/13/09	08/13/09	08/17/09	08/19/09
Pesticide/Polychlorinated Biphenyls (µg/L)												
4,4'-DDD	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
4,4'-DDE	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
4,4'-DDT	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
Aldrin	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
alpha-BHC	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
alpha-Chlordane	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.013 J	0.052 U	0.048 U	0.049 U
Aroclor-1016	0.47 UJ	0.47 U	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
Aroclor-1221	0.47 UJ	0.47 U	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
Aroclor-1232	0.47 UJ	0.47 U	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
Aroclor-1242	0.47 UJ	0.47 U	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
Aroclor-1248	0.47 UJ	0.47 U	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
Aroclor-1254	0.47 UJ	0.47 U	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
Aroclor-1260	0.47 UJ	0.47 U	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
beta-BHC	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
Chlordane	0.47 UJ	0.47 UJ	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
delta-BHC	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
Dieldrin	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
Endosulfan I	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
Endosulfan II	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
Endosulfan sulfate	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
Endrin	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
Endrin aldehyde	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
Endrin ketone	0.094 UJ	0.094 UJ	0.094 U	0.095 U	0.098 U	0.098 U	0.096 U	0.1 U	0.094 U	0.1 U	0.096 U	0.098 U
gamma-BHC (Lindane)	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
gamma-Chlordane	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
Heptachlor	0.047 UJ	0.052 J	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
Heptachlor epoxide	0.047 UJ	0.047 UJ	0.047 U	0.048 U	0.049 U	0.049 U	0.048 U	0.052 U	0.047 U	0.052 U	0.048 U	0.049 U
Methoxychlor	0.47 UJ	0.47 UJ	0.47 U	0.48 U	0.49 U	0.49 U	0.48 U	0.52 U	0.47 U	0.52 U	0.48 U	0.49 U
Toxaphene	4.7 UJ	4.7 UJ	4.7 U	4.8 U	4.9 U	4.9 U	4.8 U	5.2 U	4.7 U	5.2 U	4.8 U	4.9 U
Explosives (µg/L)												
1,3,5-Trinitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.31 J	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
HMX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.45 J	0.25 U	0.25 U	0.25 U
Tetryl	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Table A-7
Cornwallis Cave Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKL-GW01-CC		YBKL-GW02-CC	YBKG-GW01-CC		YBKG-GW03A-CC	YBKG-GW05A-CC	YBKG-GW06A-CC	YBKG-GW07A-CC	YBKG-GW07-CC	YBKG-GW08A-CC	YBKG-GW10-CC
Sample ID	YBKL-GW01-CC-0809	YBKL-GW01P-CC-0809	YBKL-GW02-CC-0809	YBKG-GW01-CC-0809	YBKG-GW01P-CC-0809	YBKG-GW03A-CC-0809	YBKG-GW05A-CC-0809	YBKG-GW06A-CC-0809	YBKG-GW07A-CC-0809	YBKG-GW07-CC-0809	YBKG-GW08A-CC-0809	YBKG-GW10-CC-0809
Sample Date	08/19/09	08/19/09	08/20/09	08/14/09	08/14/09	08/17/09	08/18/09	08/14/09	08/13/09	08/13/09	08/17/09	08/19/09
Total Inorganics (µg/L)												
Aluminum	12,300	11,600	200 U	613	238	94 K	2,080 K	577 K	247	8,140	1,070 K	2,650 K
Antimony	2.2 B	1.4 B	0.44 B	0.44 B	0.35 B	0.87 B	0.98 B	1.6 B	18.8 J	0.62 B	2.1 B	1.6 B
Arsenic	17.2	17.8	0.47 J	0.92 J	0.66 J	0.38 J	2.5	1.6 J	0.33 J	8.9	4.3	1.9 J
Barium	131 J	130 J	47 J	28.6 J	27.5 J	80.5 J	38.8 J	47 J	231	59 J	43.8 J	42.8 J
Beryllium	1.2 J	1.2 J	5 U	5 U	5 U	5 U	0.23 J	5 U	5 U	0.57 J	5 U	0.24 J
Cadmium	0.68 J	0.75 J	0.2 J	0.15 J	2 U	2 U	2 U	0.16 J	0.28 J	0.28 J	0.19 J	0.17 J
Calcium	3,490 J	3,390 J	174,000	114,000	97,800	98,800	69,900	34,400	117,000	175,000	113,000	95,900
Chromium	70.6	68.7	1.4 J	65.2	103	1 J	14	22.3	1.9 J	35.1	6.5 J	9 J
Cobalt	15.3 J	14.6 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	2.6 J	0.73 J	1.4 J
Copper	12 J	11.9 J	25 U	25 U	25 U	25 U	25 U	25 U	40.2 B	3.4 B	25 U	1.9 B
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Iron	29,900	28,300	55 J	2,110	1,140	1,650 K	4,950 K	901 K	1,130	20,100	2,880 K	5,870 K
Lead	11.6	11.6	10 U	10 U	10 U	10 U	2.6 B	3.1 B	3.2 B	6.9 B	2.8 B	4.5 B
Magnesium	1,550 J	1,470 J	1,710 J	1,440 J	1,160 J	2,130 J	1,470 J	709 J	3,240 J	4,180 J	1,970 J	3,870 J
Manganese	55.8	53.9	15 U	24.5	25.4	36.6	39.1	7.4 B	36.3	104	57	126
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	38.3 J	37.1 J	40 U	28.1 J	45.6	40 U	40 U	9.9 J	40 U	9.3 J	2.7 J	3.6 J
Potassium	3,210 J	3,010 J	387 J	1,160 J	908 J	1,510 J	1,360 J	1,980 J	19,000	3,100 J	1,460 J	1,940 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 U	10 U	10 U	10 U	10 U	10 UL	10 UL	10 UL	10 U	10 U	10 UL	10 UL
Sodium	4,060 J	3,980 J	8,630	8,020	7,980	5,850	5,060	5,280	23,300	5,720	7,560	35,800
Thallium	0.4 B	0.42 B	0.13 B	0.15 B	0.14 B	0.18 B	0.2 B	0.19 B	0.14 B	0.23 B	0.21 B	0.22 B
Vanadium	39.2 J	36.2 J	1.7 J	2.1 J	1.2 J	50 U	7.7 J	3.3 J	50 U	32.4 J	4.4 J	7 J
Zinc	85.4 B	84.9 B	2.3 B	11.4 B	3.6 B	2.8 B	13.4 B	7.2 B	34	37.2	7.8 B	19.3 B
Dissolved Inorganics (µg/L)												
Aluminum	62.8 J	200 U	200 U	200 U	200 U	200 U	200 U	82.4 K	200 U	86.8 J	200 U	200 U
Antimony	0.8 B	0.64 B	1 B	0.45 B	0.32 B	0.86 B	0.91 B	1.4 B	9.7 J	0.33 B	1.4 B	1.2 B
Arsenic	0.17 J	2 U	0.5 J	0.28 J	0.3 J	0.31 J	0.41 J	1.3 J	0.28 J	0.49 J	2.5	0.45 J
Barium	92.5 J	109 J	43.1 J	23.8 J	20.1 J	82.4 J	25.9 J	55.4 J	101 J	29.2 J	39.9 J	33.8 J
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.33 J	0.38 J	0.19 J	2 U	2 U	2 U	2 U	2 U	0.15 J	2 U	2 U	0.16 J
Calcium	3,750 J	3,180 J	175,000	87,200	85,900	96,400	55,100	36,500	85,600	123,000	81,400	91,600
Chromium	1.2 J	1.2 J	1.1 J	1.9 J	3.1 J	10 U	5.8 J	10 U	10 U	1.2 J	10 U	0.9 J
Cobalt	8.4 J	8.1 J	50 U	50 U	50 U	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	25 U	25 U	25 U	25 U	25 U
Iron	301	273	200 U	200 U	200 U	1,510 K	200 U	200 U	260	334	192 K	154 K
Lead	1.9 J	10 U	10 U	10 U	1.5 B	2.4 B	10 U	10 U	10 U	10 U	10 U	2.5 B
Magnesium	476 J	324 J	1,740 J	1,060 J	1,060 J	2,170 J	944 J	729 J	2,930 J	2,200 J	1,560 J	3,460 J
Manganese	34.9	34.4	15 U	14.7 J	10.6 J	32.4	2.2 J	1.7 J	29.9	6.4 J	38.3	77.2
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	18.9 J	19.1 J	40 U	13.8 J	12.2 J	40 U	40 U	40 U	40 U	40 U	40 U	40 U
Potassium	951 J	808 J	452 J	876 J	821 J	1,450 J	775 J	1,940 J	17,800	951 J	1,160 J	1,300 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 U	10 U	10 U	10 U	10 U	10 UL	10 UL	10 UL	10 U	10 U	10 UL	10 UL
Sodium	4,220 J	4,100 J	8,310	7,740	7,660	5,970	4,660 J	5,560	22,500	5,540	7,900	31,700
Thallium	0.19 B	0.19 B	0.14 B	0.14 B	0.14 B	0.18 B	0.18 B	0.18 B	0.14 B	0.15 B	0.18 B	0.19 B
Vanadium	50 U	50 U	1.3 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	37.3 B	36.8 B	20 U	2.7 B	2.4 B	3.7 B	5.6 B	20 U	7.2 B	6.3 B	6.6 B	6.8 B

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
R - Unreliable Result
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
µg/L - Micrograms per liter

Station ID	YBKG-GW11-3-CC	YBKG-GW12-3-CC	YBKG-GW13-3-CC	YBKG-GW14-3-CC	YBKG-GW15-3-CC	
Sample ID	YBKG-GW11-3-CC-0809	YBKG-GW12-3-CC-0809	YBKG-GW13-3-CC-0809	YBKG-GW14-3-CC-0809	YBKG-GW15-3-CC-0809	YBKG-GW15P-3-CC-0809
Sample Date	08/03/09	08/11/09	08/10/09	08/13/09	08/12/09	08/12/09
Volatile Organic Compounds (µg/L)						
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	1 U	1 U	1 U	1 U	0.27 B	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	1 U	1 U	0.25 B	1 U	0.67 J	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon-12)	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	1 U	1 U	1 U	1 U	1 U	1 U
Methyl-tert-butyl ether (MTBE)	1 U	1 U	0.6 B	1 U	1 U	1 U
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane(Freon-11)	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Xylene, total	1 U	1 U	1 U	1 U	1 U	1 U

Station ID	YBKG-GW11-3-CC	YBKG-GW12-3-CC	YBKG-GW13-3-CC	YBKG-GW14-3-CC	YBKG-GW15-3-CC	
Sample ID	YBKG-GW11-3-CC-0809	YBKG-GW12-3-CC-0809	YBKG-GW13-3-CC-0809	YBKG-GW14-3-CC-0809	YBKG-GW15-3-CC-0809	YBKG-GW15P-3-CC-0809
Sample Date	08/03/09	08/11/09	08/10/09	08/13/09	08/12/09	08/12/09
Semivolatile Organic Compounds (µg/L)						
1,1-Biphenyl	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2,2'-Oxybis(1-chloropropane)	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2,4,5-Trichlorophenol	24 U	27 U	26 U	24 U	24 U	24 U
2,4,6-Trichlorophenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2,4-Dichlorophenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2,4-Dimethylphenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2,4-Dinitrophenol	24 U	27 U	26 U	24 U	24 U	24 U
2,4-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Chloronaphthalene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2-Chlorophenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2-Methylnaphthalene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2-Methylphenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
2-Nitroaniline	24 U	27 U	26 U	24 U	24 U	24 U
2-Nitrophenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
3,3'-Dichlorobenzidine	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
3-Nitroaniline	24 U	27 U	26 U	24 U	24 U	24 U
4,6-Dinitro-2-methylphenol	24 U	27 U	26 U	24 U	24 U	24 U
4-Bromophenyl-phenylether	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
4-Chloro-3-methylphenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
4-Chloroaniline	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
4-Chlorophenyl-phenylether	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
4-Methylphenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
4-Nitroaniline	24 U	27 U	26 U	24 U	24 U	24 U
4-Nitrophenol	24 U	27 U	26 U	24 U	24 U	24 U
Acenaphthene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Acenaphthylene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Acetophenone	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Anthracene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Atrazine	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Benzaldehyde	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Benzo(a)anthracene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Benzo(a)pyrene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Benzo(b)fluoranthene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Benzo(g,h,i)perylene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Benzo(k)fluoranthene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
bis(2-Chloroethoxy)methane	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
bis(2-Chloroethyl)ether	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
bis(2-Ethylhexyl)phthalate	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Butylbenzylphthalate	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Caprolactam	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Carbazole	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Chrysene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Dibenz(a,h)anthracene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Dibenzofuran	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Diethylphthalate	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Dimethyl phthalate	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Di-n-butylphthalate	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Di-n-octylphthalate	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Fluoranthene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Fluorene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Hexachlorobenzene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Hexachlorobutadiene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Hexachlorocyclopentadiene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Hexachloroethane	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Indeno(1,2,3-cd)pyrene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Isophorone	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Naphthalene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
n-Nitroso-di-n-propylamine	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
n-Nitrosodiphenylamine	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Nitrobenzene	9.2 J	0.25 U	2.4 J	0.25 U	0.25 U	0.25 U
Pentachlorophenol	24 U	27 U	26 U	24 U	24 U	24 U
Phenanthrene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Phenol	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U
Pyrene	9.5 U	11 U	10 U	9.8 U	9.5 U	9.4 U

Station ID	YBKG-GW11-3-CC	YBKG-GW12-3-CC	YBKG-GW13-3-CC	YBKG-GW14-3-CC	YBKG-GW15-3-CC	
Sample ID	YBKG-GW11-3-CC-0809	YBKG-GW12-3-CC-0809	YBKG-GW13-3-CC-0809	YBKG-GW14-3-CC-0809	YBKG-GW15-3-CC-0809	YBKG-GW15P-3-CC-0809
Sample Date	08/03/09	08/11/09	08/10/09	08/13/09	08/12/09	08/12/09
Pesticide/Polychlorinated Biphenyls (µg/L)						
4,4'-DDD	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
4,4'-DDE	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
4,4'-DDT	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
Aldrin	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
alpha-BHC	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
alpha-Chlordane	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
Aroclor-1016	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
Aroclor-1221	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
Aroclor-1232	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
Aroclor-1242	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
Aroclor-1248	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
Aroclor-1254	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
Aroclor-1260	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
beta-BHC	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
Chlordane	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
delta-BHC	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
Dieldrin	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
Endosulfan I	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
Endosulfan II	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
Endosulfan sulfate	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
Endrin	0.096 U	0.099 UL	0.1 UL	0.1 U	0.098 U	0.098 U
Endrin aldehyde	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
Endrin ketone	0.096 U	0.099 U	0.1 U	0.1 U	0.098 U	0.098 U
gamma-BHC (Lindane)	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
gamma-Chlordane	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
Heptachlor	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
Heptachlor epoxide	0.048 U	0.05 U	0.052 U	0.051 U	0.049 U	0.049 U
Methoxychlor	0.48 U	0.5 U	0.52 U	0.51 U	0.49 U	0.49 U
Toxaphene	4.8 U	5 U	5.2 U	5.1 U	4.9 U	4.9 U
Explosives (µg/L)						
1,3,5-Trinitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
HMX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetryl	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Station ID	YBKG-GW11-3-CC	YBKG-GW12-3-CC	YBKG-GW13-3-CC	YBKG-GW14-3-CC	YBKG-GW15-3-CC	
Sample ID	YBKG-GW11-3-CC-0809	YBKG-GW12-3-CC-0809	YBKG-GW13-3-CC-0809	YBKG-GW14-3-CC-0809	YBKG-GW15-3-CC-0809	YBKG-GW15P-3-CC-0809
Sample Date	08/03/09	08/11/09	08/10/09	08/13/09	08/12/09	08/12/09
Total Inorganics (µg/L)						
Aluminum	200 U	292 K	200 U	200 U	4,220	1,720
Antimony	1.9 B	2.7 B	20 U	0.94 B	0.56 B	0.32 B
Arsenic	0.61 J	0.59 J	0.33 J	0.74 J	1.5 J	0.96 J
Barium	36.9 J	28 J	47.4 J	63.8 J	69.7 J	62.6 J
Beryllium	5 U	5 U	5 U	5 U	0.27 J	5 U
Cadmium	2 U	2 U	2 U	2 U	0.28 J	0.18 J
Calcium	75,100	89,400	100,000	91,600	126,000	124,000
Chromium	10 U	1.7 B	10 U	10 U	10.4	8.1 J
Cobalt	50 U	50 U	50 U	50 U	50 U	50 U
Copper	25 U	12.2 J	3.2 J	25 U	16 B	6 B
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U
Iron	198 J	345 K	1,060 K	877	4,990	2,160
Lead	0.51 J	10 U	2 B	10 U	6.2 B	3.5 B
Magnesium	1,620 J	1,410 J	2,180 J	1,550 J	2,270 J	1,830 J
Manganese	23.8	2.4 B	46.1	35.4	31.9	24.6
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 U	0.2 U	0.2 U
Nickel	40 U	40 U	40 U	40 U	4 J	3 J
Potassium	880 J	1,400 J	1,100 J	1,200 J	1,830 J	1,280 J
Selenium	35 U	35 U	35 U	35 U	35 U	35 U
Silver	10 U	10 UL	10 UL	10 U	10 U	10 U
Sodium	5,860	4,630 J	8,290	24,500	5,770	5,730
Thallium	2 U	0.19 B	0.18 B	0.15 B	0.15 B	0.14 B
Vanadium	50 U	50 U	50 U	50 U	8.6 J	3.2 J
Zinc	3.7 B	2.4 J	3.9 J	3.9 B	18.9 B	12.2 B
Dissolved Inorganics (µg/L)						
Aluminum	200 U	200 U	200 U	200 U	200 U	100 J
Antimony	0.87 B	2.1 B	20 U	0.47 B	0.38 B	0.3 B
Arsenic	0.58 J	0.46 J	0.27 J	0.56 J	0.91 J	0.88 J
Barium	33.4 J	26 J	50.3 J	60.4 J	52.2 J	53.4 J
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	2 U	2 U	2 U	2 U	0.16 J	2 U
Calcium	74,100	88,000	102,000	90,600	120,000	118,000
Chromium	10 U	1.1 J	10 U	10 U	10 U	10 U
Cobalt	0.7 J	50 U	50 U	50 U	50 U	50 U
Copper	25 U	25 U	25 U	25 U	25 U	25 U
Iron	118 J	200 U	899 K	468	79.2 J	207
Lead	2 U	2.1 B	10 U	10 U	10 U	10 U
Magnesium	1,620 J	1,370 J	2,190 J	1,600 J	1,570 J	1,500 J
Manganese	16.4	15 U	44.8	33.9	19.5	18.7
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 U	0.2 U	0.2 U
Nickel	40 U	40 U	40 U	40 U	40 U	40 U
Potassium	922 J	1,310 J	1,130 J	1,230 J	1,070 J	971 J
Selenium	35 U	35 U	35 U	35 U	35 U	35 U
Silver	10 U	10 UL	10 UL	10 U	10 U	10 U
Sodium	5,800	4,610 J	8,350	24,200	5,690	5,540
Thallium	2 U	0.18 B	0.18 B	0.14 B	0.14 B	0.14 B
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	3.3 B	20 U	5.2 B	3.8 B	4.4 B	4 B

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 lov
R - Unreliable Result
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
µg/L - Micrograms per liter

Table A-8
Yorktown-Eastover Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKG-GW01A-YE	YBKG-GW09A-YE	YBKG-GW10A-YE	YBKG-GW11-1-YE	YBKG-GW11-2-YE	YBKG-GW12-1-YE	YBKG-GW12-2-YE	YBKG-GW13-1-YE	YBKG-GW13-2-YE	YBKG-GW14-1-YE	
Sample ID	YBKG-GW01A-YE-0809	YBKG-GW09A-YE-0809	YBKG-GW10A-YE-0809	YBKG-GW11-1-YE-0809	YBKG-GW11-2-YE-0809	YBKG-GW12-1-YE-0809	YBKG-GW12-2-YE-0809	YBKG-GW13-1-YE-0809	YBKG-GW13-2-YE-0809	YBKG-GW14-1-YE-0809	YBKG-GW14P-1-YE-0809
Sample Date	08/14/09	08/22/09	08/24/09	08/10/09	08/10/09	08/11/09	08/11/09	08/08/09	08/08/09	08/12/09	08/12/09
Volatile Organic Compounds (µg/L)											
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	5 B	3.9 B	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	0.46 J	1 U	0.26 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	3.8	0.23 J	0.31 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U	0.3 B	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon-12)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl-tert-butyl ether (MTBE)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.39 J	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	0.24 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane(Freon-11)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene, total	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table A-8
Yorktown-Eastover Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKG-GW01A-YE	YBKG-GW09A-YE	YBKG-GW10A-YE	YBKG-GW11-1-YE	YBKG-GW11-2-YE	YBKG-GW12-1-YE	YBKG-GW12-2-YE	YBKG-GW13-1-YE	YBKG-GW13-2-YE	YBKG-GW14-1-YE	
Sample ID	YBKG-GW01A-YE-0809	YBKG-GW09A-YE-0809	YBKG-GW10A-YE-0809	YBKG-GW11-1-YE-0809	YBKG-GW11-2-YE-0809	YBKG-GW12-1-YE-0809	YBKG-GW12-2-YE-0809	YBKG-GW13-1-YE-0809	YBKG-GW13-2-YE-0809	YBKG-GW14-1-YE-0809	YBKG-GW14P-1-YE-0809
Sample Date	08/14/09	08/22/09	08/24/09	08/10/09	08/10/09	08/11/09	08/11/09	08/08/09	08/08/09	08/12/09	08/12/09
Semivolatile Organic Compounds (µg/L)											
1,1-Biphenyl	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2,4,5-Trichlorophenol	25 U	24 U	24 U	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
2,4,6-Trichlorophenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2,4-Dichlorophenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2,4-Dimethylphenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2,4-Dinitrophenol	25 U	24 U	24 U	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
2,4-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Chloronaphthalene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2-Chlorophenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2-Methylnaphthalene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2-Methylphenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
2-Nitroaniline	25 U	24 U	24 U	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
2-Nitrophenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
3,3'-Dichlorobenzidine	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
3-Nitroaniline	25 U	24 U	24 UL	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
4,6-Dinitro-2-methylphenol	25 U	24 U	24 U	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
4-Bromophenyl-phenylether	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
4-Chloro-3-methylphenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
4-Chloroaniline	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
4-Chlorophenyl-phenylether	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
4-Methylphenol	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
4-Nitroaniline	25 U	24 U	24 U	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
4-Nitrophenol	25 U	24 U	24 U	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
Acenaphthene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Acenaphthylene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Acetophenone	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Anthracene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Atrazine	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Benzaldehyde	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Benzo(a)anthracene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Benzo(a)pyrene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Benzo(b)fluoranthene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Benzo(g,h,i)perylene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Benzo(k)fluoranthene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
bis(2-Chloroethoxy)methane	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
bis(2-Chloroethyl)ether	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
bis(2-Ethylhexyl)phthalate	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Butylbenzylphthalate	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Caprolactam	10 U	9.4 U	0.85 J	0.96 B	0.71 B	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Carbazole	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Chrysene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Dibenz(a,h)anthracene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Dibenzofuran	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Diethylphthalate	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Dimethyl phthalate	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Di-n-butylphthalate	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Di-n-octylphthalate	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Fluoranthene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Fluorene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Hexachlorobenzene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Hexachlorobutadiene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Hexachlorocyclopentadiene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Hexachloroethane	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Isophorone	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Naphthalene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
n-Nitroso-di-n-propylamine	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
n-Nitrosodiphenylamine	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Nitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pentachlorophenol	25 U	24 U	24 U	24 U	26 U	26 U	26 U	24 U	24 U	26 U	25 U
Phenanthrene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Phenol	10 U	9.4 U	1.5 J	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U
Pyrene	10 U	9.4 U	9.4 U	9.4 U	10 U	10 U	10 U	9.6 U	9.4 U	11 U	10 U

Table A-8
Yorktown-Eastover Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKG-GW01A-YE	YBKG-GW09A-YE	YBKG-GW10A-YE	YBKG-GW11-1-YE	YBKG-GW11-2-YE	YBKG-GW12-1-YE	YBKG-GW12-2-YE	YBKG-GW13-1-YE	YBKG-GW13-2-YE	YBKG-GW14-1-YE	
Sample ID	YBKG-GW01A-YE-0809	YBKG-GW09A-YE-0809	YBKG-GW10A-YE-0809	YBKG-GW11-1-YE-0809	YBKG-GW11-2-YE-0809	YBKG-GW12-1-YE-0809	YBKG-GW12-2-YE-0809	YBKG-GW13-1-YE-0809	YBKG-GW13-2-YE-0809	YBKG-GW14-1-YE-0809	YBKG-GW14P-1-YE-0809
Sample Date	08/14/09	08/22/09	08/24/09	08/10/09	08/10/09	08/11/09	08/11/09	08/08/09	08/08/09	08/12/09	08/12/09
Pesticide/Polychlorinated Biphenyls (µg/L)											
4,4'-DDD	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
4,4'-DDE	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
4,4'-DDT	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
Aldrin	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
alpha-BHC	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
alpha-Chlordane	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
Aroclor-1016	0.51 UJ	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Aroclor-1221	0.51 UJ	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Aroclor-1232	0.51 UJ	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Aroclor-1242	0.51 UJ	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Aroclor-1248	0.51 UJ	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Aroclor-1254	0.51 UJ	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Aroclor-1260	0.51 UJ	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Aroclor-1262	NA	0.47 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1268	NA	0.47 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
beta-BHC	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
Chlordane	0.51 UJ	0.47 UJ	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
delta-BHC	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
Dieldrin	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
Endosulfan I	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
Endosulfan II	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
Endosulfan sulfate	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
Endrin	0.1 UJ	0.094 UJ	0.094 U	0.096 UL	0.1 UL	0.097 UL	0.1 UL	0.095 UL	0.094 UL	0.11 U	0.1 U
Endrin aldehyde	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
Endrin ketone	0.1 UJ	0.094 UJ	0.094 U	0.096 U	0.1 U	0.097 U	0.1 U	0.095 U	0.094 U	0.11 U	0.1 U
gamma-BHC (Lindane)	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
gamma-Chlordane	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
Heptachlor	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
Heptachlor epoxide	0.051 UJ	0.047 UJ	0.047 U	0.048 U	0.05 U	0.048 U	0.05 U	0.048 U	0.047 U	0.054 U	0.052 U
Methoxychlor	0.51 UJ	0.47 UJ	0.47 U	0.48 U	0.5 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U	0.52 U
Toxaphene	5.1 UJ	4.7 UJ	4.7 U	4.8 U	5 U	4.8 U	5 U	4.8 U	4.7 U	5.4 U	5.2 U
Explosives (µg/L)											
1,3,5-Trinitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UL	0.25 UL	0.25 U	0.25 U
2-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
HMX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UL	0.25 UL	0.25 U	0.25 U
RDX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetryl	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Table A-8
Yorktown-Eastover Aquifer Raw Analytical Data
Background Study Report
Cheatham Annex and Naval Weapons Station Yorktown
York County, Virginia

Station ID	YBKG-GW01A-YE	YBKG-GW09A-YE	YBKG-GW10A-YE	YBKG-GW11-1-YE	YBKG-GW11-2-YE	YBKG-GW12-1-YE	YBKG-GW12-2-YE	YBKG-GW13-1-YE	YBKG-GW13-2-YE	YBKG-GW14-1-YE	
Sample ID	YBKG-GW01A-YE-0809	YBKG-GW09A-YE-0809	YBKG-GW10A-YE-0809	YBKG-GW11-1-YE-0809	YBKG-GW11-2-YE-0809	YBKG-GW12-1-YE-0809	YBKG-GW12-2-YE-0809	YBKG-GW13-1-YE-0809	YBKG-GW13-2-YE-0809	YBKG-GW14-1-YE-0809	YBKG-GW14P-1-YE-0809
Sample Date	08/14/09	08/22/09	08/24/09	08/10/09	08/10/09	08/11/09	08/11/09	08/08/09	08/08/09	08/12/09	08/12/09
Total Inorganics (µg/L)											
Aluminum	30,700 K	1,640	155 J	447 K	141 K	162 K	200 U	203 K	200 U	108 J	122 J
Antimony	1.6 B	1.3 B	0.88 B	1.2 B	0.69 B	2.2 B	4.3 B	0.51 B	20 U	0.28 B	0.25 B
Arsenic	15.4	7.8	0.92 J	0.72 J	0.57 J	0.39 J	0.8 J	0.91 J	0.48 J	0.93 J	0.85 J
Barium	178 J	21.5 J	35.6 J	104 J	52.5 J	27.4 J	34.5 J	31.4 J	41.7 J	97.6 J	95.9 J
Beryllium	2.4 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.27 J	5 U
Cadmium	0.72 J	0.27 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Calcium	146,000	35,400	56,500	45,800	65,700	39,400	58,100	42,500	70,800	72,300	74,100
Chromium	96.8	23.5	10.3	2.7 B	12.7	1.2 B	10 U	1.9 B	10 U	1.5 B	0.9 J
Cobalt	16.9 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Copper	15.7 B	25 U	25 U	25 U	1.9 J	25 U	25 U	25 U	25 U	117	25 U
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Iron	62,100 K	2,810	402	495 K	415 K	215 K	114 K	753 K	294 K	255	292
Lead	21.3	10 U	10 U	2.6 B	1.9 B	2 B	4.9 B	2.2 B	2.2 B	2.6 B	3.1 B
Magnesium	6,280	963 J	3,290 J	8,770	3,270 J	6,940	2,330 J	5,200	1,850 J	6,930	7,080
Manganese	279	18.7	15.5 B	13.4 J	40.6	15.8	18.6	28	27.1	36.7	36.2
Mercury	0.2 U	0.2 U	0.2 U	0.081 L	0.2 UL	0.2 UL	0.2 UL	0.078 L	0.2 UL	0.2 U	0.2 U
Nickel	43.9	2.2 J	40 U	40 U	40 U	40 U	40 U	40 U	40 U	2.4 J	40 U
Potassium	5,970	3,680 J	18,200	7,030	1,800 J	8,680	2,380 J	6,280	2,130 J	7,010	7,140
Selenium	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 U	10 U	10 UL	10 UL	10 UJ	10 UL	10 UL	10 UL	10 U	10 U
Sodium	5,740	11,600	27,800	35,900	8,900	52,600	7,120	39,300	9,640	32,000	32,500
Thallium	0.63 B	0.17 B	0.13 B	0.19 B	0.19 B	0.19 B	0.19 B	0.19 B	0.18 B	0.14 B	0.14 B
Vanadium	83.9	8.8 J	1.2 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	146	8.2 B	3 B	4.9 B	4.3 J	3 J	2.8 J	4 J	2.4 J	12.8 B	7.8 B
Dissolved Inorganics (µg/L)											
Aluminum	869 K	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Antimony	1.1 B	1.1 B	0.72 B	0.44 B	0.53 B	3.7 B	2.4 B	20 U	20 U	0.25 B	20 U
Arsenic	1.1 J	6.2	0.72 J	0.7 J	0.49 J	0.36 J	0.68 J	0.77 J	0.43 J	0.84 J	0.88 J
Barium	44 J	16.3 J	33.9 J	94.7 J	48.6 J	23.2 J	31.9 J	28.2 J	42.5 J	94.7 J	90.3 J
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.16 J	2 U
Calcium	61,500	26,100	50,800	45,200	65,300	37,900	58,700	41,800	71,900	81,800	71,600
Chromium	3.6 J	27.8	2.2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	50 U	50 U	50 U	50 U	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	25 U	25 U	3 J	25 U
Iron	1,670 K	200 U	65 J	200 U	200 U	200 U	200 U	35.7 K	130 K	200 U	200 U
Lead	2.5 B	10 U	1.7 J	10 U	10 U	10 U	1.6 B	10 U	10 U	10 U	2.5 B
Magnesium	1,280 J	438 B	3,210 J	8,380	3,210 J	6,700	2,370 J	4,950 J	1,850 J	7,060	6,900
Manganese	8.6 J	1.4 B	12.5 B	10.7 J	34.7	6.1 J	9.3 J	22	24.9	26.2	17.4
Mercury	0.2 U	0.2 U	0.2 U	0.072 L	0.2 UL	0.2 UL	0.2 UL	0.1 L	0.14 L	0.2 U	0.2 U
Nickel	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
Potassium	1,140 J	4,280 J	19,100	6,670	1,690 J	8,420	2,460 J	6,440	2,090 J	7,250	6,950
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	7.7 J	9.1 J	35 U
Silver	10 UL	10 U	10 U	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL	10 U	10 U
Sodium	5,240	12,200	28,000	33,400	8,940	51,100	7,200	39,400	9,710	36,000	32,000
Thallium	0.2 B	0.13 B	0.13 B	0.19 B	0.19 B	0.19 B	0.19 B	0.18 B	0.18 B	0.14 B	0.14 B
Vanadium	2.5 J	4.3 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	5.8 B	28 B	19.6 B	3.3 B	3.1 B	2 B	1.8 B	3.6 B	2.3 B	20 B	4.4 B

Notes:
NA - Not analyzed
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
R - Unreliable Result
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
µg/L - Micrograms per liter

Station ID	YBKG-GW14-2-YE	YBKG-GW15-1-YE	YBKG-GW15-2-YE
Sample ID	YBKG-GW14-2-YE-0809	YBKG-GW15-1-YE-0809	YBKG-GW15-2-YE-0809
Sample Date	08/13/09	08/12/09	08/12/09
Volatile Organic Compounds (µg/L)			
1,1,1-Trichloroethane	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U
2-Butanone	5 R	5 R	5 R
2-Hexanone	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U
Acetone	5 U	5 U	5 U
Benzene	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U
Carbon disulfide	1 U	0.23 J	1 U
Carbon tetrachloride	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U
Chloromethane	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U
Dichlorodifluoromethane (Freon-12)	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U
Isopropylbenzene	1 U	1 U	1 U
Methylene chloride	1 U	1 U	1 U
Methyl-tert-butyl ether (MTBE)	1 U	1 U	1 U
o-Xylene	1 U	1 U	1 U
Styrene	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U
Toluene	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U
Trichlorofluoromethane(Freon-11)	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U
Xylene, total	1 U	1 U	1 U

Station ID	YBKG-GW14-2-YE	YBKG-GW15-1-YE	YBKG-GW15-2-YE
Sample ID	YBKG-GW14-2-YE-0809	YBKG-GW15-1-YE-0809	YBKG-GW15-2-YE-0809
Sample Date	08/13/09	08/12/09	08/12/09
Semivolatile Organic Compounds (µg/L)			
1,1-Biphenyl	10 U	9.8 U	11 U
2,2'-Oxybis(1-chloropropane)	10 U	9.8 U	11 U
2,4,5-Trichlorophenol	26 U	24 U	26 U
2,4,6-Trichlorophenol	10 U	9.8 U	11 U
2,4-Dichlorophenol	10 U	9.8 U	11 U
2,4-Dimethylphenol	10 U	9.8 U	11 U
2,4-Dinitrophenol	26 U	24 U	26 U
2,4-Dinitrotoluene	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	0.25 U	0.25 U	0.25 U
2-Chloronaphthalene	10 U	9.8 U	11 U
2-Chlorophenol	10 U	9.8 U	11 U
2-Methylnaphthalene	10 U	9.8 U	11 U
2-Methylphenol	10 U	9.8 U	11 U
2-Nitroaniline	26 U	24 U	26 U
2-Nitrophenol	10 U	9.8 U	11 U
3,3'-Dichlorobenzidine	10 U	9.8 U	11 U
3-Nitroaniline	26 U	24 U	26 U
4,6-Dinitro-2-methylphenol	26 U	24 U	26 U
4-Bromophenyl-phenylether	10 U	9.8 U	11 U
4-Chloro-3-methylphenol	10 U	9.8 U	11 U
4-Chloroaniline	10 U	9.8 U	11 U
4-Chlorophenyl-phenylether	10 U	9.8 U	11 U
4-Methylphenol	10 U	9.8 U	11 U
4-Nitroaniline	26 U	24 U	26 U
4-Nitrophenol	26 U	24 U	26 U
Acenaphthene	10 U	9.8 U	11 U
Acenaphthylene	10 U	9.8 U	11 U
Acetophenone	10 U	9.8 U	11 U
Anthracene	10 U	9.8 U	11 U
Atrazine	10 U	9.8 U	11 U
Benzaldehyde	10 U	9.8 U	11 U
Benzo(a)anthracene	10 U	9.8 U	11 U
Benzo(a)pyrene	10 U	9.8 U	11 U
Benzo(b)fluoranthene	10 U	9.8 U	11 U
Benzo(g,h,i)perylene	10 U	9.8 U	11 U
Benzo(k)fluoranthene	10 U	9.8 U	11 U
bis(2-Chloroethoxy)methane	10 U	9.8 U	11 U
bis(2-Chloroethyl)ether	10 U	9.8 U	11 U
bis(2-Ethylhexyl)phthalate	10 U	9.8 U	11 U
Butylbenzylphthalate	10 U	9.8 U	11 U
Caprolactam	10 U	9.8 U	11 U
Carbazole	10 U	9.8 U	11 U
Chrysene	10 U	9.8 U	11 U
Dibenz(a,h)anthracene	10 U	9.8 U	11 U
Dibenzofuran	10 U	9.8 U	11 U
Diethylphthalate	10 U	9.8 U	11 U
Dimethyl phthalate	10 U	9.8 U	11 U
Di-n-butylphthalate	10 U	9.8 U	11 U
Di-n-octylphthalate	10 U	9.8 U	11 U
Fluoranthene	10 U	9.8 U	11 U
Fluorene	10 U	9.8 U	11 U
Hexachlorobenzene	10 U	9.8 U	11 U
Hexachlorobutadiene	10 U	9.8 U	11 U
Hexachlorocyclopentadiene	10 U	9.8 U	11 U
Hexachloroethane	10 U	9.8 U	11 U
Indeno(1,2,3-cd)pyrene	10 U	9.8 U	11 U
Isophorone	10 U	9.8 U	11 U
Naphthalene	10 U	9.8 U	11 U
n-Nitroso-di-n-propylamine	10 U	9.8 U	11 U
n-Nitrosodiphenylamine	10 U	9.8 U	11 U
Nitrobenzene	0.25 U	0.25 U	0.25 U
Pentachlorophenol	26 U	24 U	26 U
Phenanthrene	10 U	9.8 U	11 U
Phenol	10 U	9.8 U	11 U
Pyrene	10 U	9.8 U	11 U

Station ID	YBKG-GW14-2-YE	YBKG-GW15-1-YE	YBKG-GW15-2-YE
Sample ID	YBKG-GW14-2-YE-0809	YBKG-GW15-1-YE-0809	YBKG-GW15-2-YE-0809
Sample Date	08/13/09	08/12/09	08/12/09
Pesticide/Polychlorinated Biphenyls (µg/L)			
4,4'-DDD	0.098 UJ	0.11 U	0.095 U
4,4'-DDE	0.098 UJ	0.11 U	0.095 U
4,4'-DDT	0.098 UJ	0.11 U	0.095 U
Aldrin	0.049 UJ	0.053 U	0.048 U
alpha-BHC	0.049 UJ	0.053 U	0.048 U
alpha-Chlordane	0.049 UJ	0.053 U	0.048 U
Aroclor-1016	0.49 U	0.53 U	0.48 U
Aroclor-1221	0.49 U	0.53 U	0.48 U
Aroclor-1232	0.49 U	0.53 U	0.48 U
Aroclor-1242	0.49 U	0.53 U	0.48 U
Aroclor-1248	0.49 U	0.53 U	0.48 U
Aroclor-1254	0.49 U	0.53 U	0.48 U
Aroclor-1260	0.49 U	0.53 U	0.48 U
Aroclor-1262	NA	NA	NA
Aroclor-1268	NA	NA	NA
beta-BHC	0.049 UJ	0.053 U	0.048 U
Chlordane	0.49 UJ	0.53 U	0.48 U
delta-BHC	0.049 UJ	0.053 U	0.048 U
Dieldrin	0.098 UJ	0.11 U	0.095 U
Endosulfan I	0.049 UJ	0.053 U	0.048 U
Endosulfan II	0.098 UJ	0.11 U	0.095 U
Endosulfan sulfate	0.098 UJ	0.11 U	0.095 U
Endrin	0.098 UJ	0.11 U	0.095 U
Endrin aldehyde	0.098 UJ	0.11 U	0.095 U
Endrin ketone	0.098 UJ	0.11 U	0.095 U
gamma-BHC (Lindane)	0.049 UJ	0.053 U	0.048 U
gamma-Chlordane	0.049 UJ	0.053 U	0.048 U
Heptachlor	0.049 UJ	0.053 U	0.048 U
Heptachlor epoxide	0.049 UJ	0.053 U	0.048 U
Methoxychlor	0.49 UJ	0.53 U	0.48 U
Toxaphene	4.9 UJ	5.3 U	4.8 U
Explosives (µg/L)			
1,3,5-Trinitrobenzene	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	0.25 U	0.25 U	0.25 U
HMX	0.25 U	0.25 U	0.25 U
RDX	0.25 U	0.25 U	0.25 U
Tetryl	0.25 U	0.25 U	0.25 U

Station ID	YBKG-GW14-2-YE	YBKG-GW15-1-YE	YBKG-GW15-2-YE
Sample ID	YBKG-GW14-2-YE-0809	YBKG-GW15-1-YE-0809	YBKG-GW15-2-YE-0809
Sample Date	08/13/09	08/12/09	08/12/09
Total Inorganics (µg/L)			
Aluminum	407	208	200 U
Antimony	0.37 B	0.92 B	0.29 B
Arsenic	1.4 J	1.7 J	0.31 J
Barium	103 J	35.8 J	59.5 J
Beryllium	5 U	5 U	5 U
Cadmium	0.17 J	2 U	0.18 J
Calcium	94,800	44,100	92,900
Chromium	8.6 J	2.8 J	10 U
Cobalt	50 U	50 U	50 U
Copper	25 U	3.5 B	25 U
Cyanide	10 U	10 U	10 U
Iron	1,380	305	118 J
Lead	3.4 B	10 U	1.6 B
Magnesium	2,000 J	7,780	4,320 J
Manganese	29.1	18.8	77.2
Mercury	0.2 U	0.2 U	0.2 U
Nickel	4.2 J	40 U	40 U
Potassium	1,970 J	9,260	1,570 J
Selenium	35 U	35 U	35 U
Silver	10 U	10 U	10 U
Sodium	14,600	84,200	6,460
Thallium	0.15 B	0.14 B	0.14 B
Vanadium	1.5 J	1.3 J	50 U
Zinc	6.8 B	3.6 B	4.1 B
Dissolved Inorganics (µg/L)			
Aluminum	200 U	200 U	200 U
Antimony	0.49 B	0.49 B	0.31 B
Arsenic	0.71 J	1.6 J	0.39 J
Barium	97.5 J	39.1 J	83.2 J
Beryllium	5 U	5 U	5 U
Cadmium	2 U	0.17 J	0.17 J
Calcium	93,800	44,200	92,100
Chromium	10 U	10 U	1.3 J
Cobalt	50 U	50 U	50 U
Copper	25 U	25 U	25 U
Iron	163 J	31.6 J	234
Lead	10 U	10 U	10 U
Magnesium	1,890 J	7,870	4,210 J
Manganese	19.6	17	79.7
Mercury	0.2 U	0.2 U	0.2 U
Nickel	40 U	40 U	40 U
Potassium	1,880 J	9,360	1,740 J
Selenium	35 U	35 U	35 U
Silver	10 U	10 U	10 U
Sodium	15,300	85,100	6,760
Thallium	0.14 B	0.14 B	0.14 B
Vanadium	50 U	50 U	50 U
Zinc	3.5 B	4.1 B	3.6 B

Notes:
NA - Not analyzed
B - Analyte not detected above the level reported in bla
J - Analyte present, value may or may not be accurate
K - Analyte present, value may be biased high, actual v
L - Analyte present, value may be biased low, actual va
R - Unreliable Result
U - The material was analyzed for, but not detected
UJ - Analyte not detected, quantitation limit may be ina
UL - Analyte not detected, quantitation limit is probably
µg/L - Micrograms per liter

Appendix B
IDW Manifests

WASTE MANAGEMENT

MIDDLE PENNINSULA LANDFILL
3714 WASTE MANAGEMENT WAY
GLENNS, VA, 23149
Ph: (804) 693-5884

Original
Ticket# 637718

Customer Name Capitol Environmental Capitol
Ticket Date 11/20/2009
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 0
Destination
PO
Profile 3539MP (Soil from Monitor Well Installation)
Generator 185-NAVFAC MIDPLANT NAVFAC MidPlant

Carrier PENSKE
Vehicle# 505901
Container
Driver
Check#
Billing # 0000965
Gen EPA ID
Grid

Volume

	Time	Scale	Operator	Inbound		
In	11/20/2009 10:10:31	Outbound	BLeidig		Gross	19200 lb
Out	11/20/2009 10:27:43	Outbound	BLeidig		Tare	18480 lb
					Net	720 lb
					Tons	0.36

Comments

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Each-	100	2	Each				VA
2	FUEL-Fuel Surcharg	100		%				VA
3	P6ENV-Environmenta	100		%				VA

Total Tax
Total Ticket

In accordance with Virginia law, I certify that the contents of this load is free of any substances not authorized for acceptance at Waste Management.

Driver's Signature

403WM

50590

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: N/A
2. Page 1 of 1
3. Emergency Response Phone: 757-887-4881
4. Waste Tracking Number:

5. Generator's Name and Mailing Address
NAVFAC MIDLANT Bldg N-26
Rm 3208, 9742 Maryland Ave., Norfolk, VA 23511
Generator's Phone: 757 445-6618 Attn: Tom Kowalski

Generator's Site Address (if different than mailing address)
NAVFAC MIDLANT
Naval Weapons Station Yorktown
Yorktown, VA 23691

6. Transporter 1 Company Name: LCM Corporation
U.S. EPA ID Number: N/A

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
WM Middle Peninsula Landfill
3714 Waste Management Way
Facility's Phone: 800-553-7771 Glenns, VA 23149
U.S. EPA ID Number: N/A

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Nonhazardous, Non DOT regulated soil	2	DM	1200lbs	P	None
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1.3539MP soil from monitor well
CESI Job#: ROAN-TFORT-2985-17559

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: THOMAS KOWALSKI
Signature:
Month 11 Day 17 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kevin Childs
Signature:
Month 11 Day 19 Year 09
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

MP 8.3

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: B. Leidy
Signature: B. Leidy
Month 1 Day 20 Year 09

GENERATOR
INT'L
TRANSPORTER
DESIGNATED FACILITY

169-BLS-C 6 10497 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

MIDDLE PENNINSULA LANDFILL
3714 WASTE MANAGEMENT WAY
GLENNS, VA, 23149
Ph: (804) 693-5884

Original
Ticket# 637697

Customer Name Capitol Environmental Capitol
Ticket Date 11/20/2009
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 0
Destination
PO
Profile 3537MP (Water from Monitor Well Installation)
Generator 185-NAVFAC MIDPLANT CHEATHAM NAVFAC MidPlant-Cheatham Annex

Carrier PENSKE
Vehicle# 505901
Container
Driver
Check#
Billing # 0000965
Gen EPA ID
Grid

Volume

	Time	Scale	Operator	Inbound		
In	11/20/2009 08:55:39	Inbound	BLeidig		Gross	32300 lb
Out	11/20/2009 09:12:46	Outbound	BLeidig		Tare	32280 lb
					Net	20 lb
					Tons	0.01

Comments

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Each-	100	1	Each				VA
2	P6ENV-Environmenta	100		%				VA
3	FUEL-Fuel Surcharg	100		%				VA

Total Tax
Total Ticket

In accordance with Virginia law, I certify that the contents of this load is free of any substances not authorized for acceptance at Waste Management.

Driver's Signature

403WM

505901

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: N/A
2. Page 1 of 1
3. Emergency Response Phone: 757-887-4881
4. Waste Tracking Number:

5. Generator's Name and Mailing Address
NAVFAC MIDLANT Bldg N-26
Rm 3208, 9742 Maryland Ave., Norfolk, VA 23511
Generator's Phone: 757 445-6680 Attn: Christopher Murray

Generator's Site Address (if different than mailing address)
NAVFAC MIDLANT
Cheatham Annex 108 Sandia Drive
Williamsburg, VA 23185

6. Transporter 1 Company Name: LCM Corporation
U.S. EPA ID Number: N/A

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
WM Middle Peninsula Landfill
3714 Waste Management Way
Facility's Phone: 800-553-7771 Glenns, VA 23149
U.S. EPA ID Number: N/A

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Nonhazardous, Non DOT regulated water	1	DM	10	G	None
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
1.3537MP water from monitor well
CESI Job# ROAN-TFORT-2985-17559

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: THOMAS KOWALSKI
Signature:
Month 11 Day 17 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kevin Childs
Signature:
Month 11 Day 19 Year 09
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: B. Zeidig
Signature:
Month 1 Day 20 Year 09

169-BLS-C 6 10497 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

MIDDLE PENNINSULA LANDFILL
3714 WASTE MANAGEMENT WAY
GLENNS, VA, 23149
Ph: (804) 693-5884

Original
Ticket# 637603

Customer Name Capitol Environmental Capitol Carrier LCM
Ticket Date 11/19/2009 Vehicle# 2 Volume
Payment Type Credit Account Container
Manual Ticket# Driver
Hauling Ticket# Check#
Route Billing # 0000965
State Waste Code Gen EPA ID
Manifest 3536
Destination Grid
PO
Profile 3536MP (Mud From Monitor Well Installation)
Generator 185-NAVFAC MIDPLANT NAVFAC MidPlant

	Time	Scale	Operator	Inbound		
In	11/19/2009 13:36:09	Inbound	Beth		Gross	48660 lb
Out	11/19/2009 14:07:11	Outbound	Beth		Tare	35800 lb
					Net	12860 lb
					Tons	6.43

Comments

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Tons-	100	6.43	Tons				VA
2	P6ENV-Environmenta	100		%				VA
3	FUEL-Fuel Surcharg	100		%				VA

Total Tax
Total Ticket

In accordance with Virginia law, I certify that the contents of this load is free of any substances not authorized for acceptance at Waste Management.

Driver's Signature

403WM

Published by J. J. KELLER & ASSOCIATES, INC., Neenah, WI • USA • (800) 327-6868 • www.jjkeller.com • Printed in the United States

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: N/A
2. Page 1 of 1
3. Emergency Response Phone: 757-887-4831
4. Waste Tracking Number:

5. Generator's Name and Mailing Address
NAVFAC MIDLANT Bldg N-26
Rm 3208, 9742 Maryland Ave., Norfolk, VA 23511
Generator's Phone: 757 445-6618 Attn: Tom Kowalski

Generator's Site Address (if different than mailing address)
NAVFAC MIDLANT
Naval Weapons Station Yorktown
Yorktown, VA 23691

6. Transporter 1 Company Name: LCM Corporation
U.S. EPA ID Number: N/A

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
WM Middle Peninsula Landfill
3714 Waste Management Way
Glenns, VA 23149
Facility's Phone: 800-553-7771
U.S. EPA ID Number: N/A

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Nonhazardous, Non DOT regulated water	1	TT	1800	G	None
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1.3536MP water from monitor well
CESI Job#: ROAN-TFORT-2985-17559

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: THOMAS KOWALSKI
Signature:
Month 11 Day 17 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: James Mountford
Signature:
Month Day Year
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Beth Grimm
Signature: Beth Grimm
Month 11 Day 19 Year 09

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

MIDDLE PENNINSULA LANDFILL
3714 WASTE MANAGEMENT WAY
GLENNS, VA, 23149
Ph: (804) 693-5884

Original
Ticket# 637699

Customer Name Capitol Environmental Capitol
Ticket Date 11/20/2009
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 0
Destination
PO
Profile 3538MP (Mud from Monitor Well Installation)
Generator 185-NAVFAC MIDPLANT NAVFAC MidPlant

Carrier PENSKE
Vehicle# 505901
Container
Driver
Check#
Billing # 0000965
Gen EPA ID
Grid

Volume

	Time	Scale	Operator	Inbound		
In	11/20/2009 09:14:14	Inbound	BLeidig		Gross	62340 lb
Out	11/20/2009 10:09:50	Outbound	BLeidig		Tare	19200 lb
					Net	43140 lb
					Tons	21.57

Comments

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Each-	100	24	Each				VA
2	P6ENV-Environmenta	100		%				VA
3	FUEL-Fuel Surcharg	100		%				VA

Total Tax
Total Ticket

In accordance with Virginia law, I certify that the contents of this load is free of any substances not authorized for acceptance at Waste Management.

Driver's Signature

403WM

50598

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: N/A
2. Page 1 of 1
3. Emergency Response Phone: 757-887-4781
4. Waste Tracking Number:

5. Generator's Name and Mailing Address
NAVFAC MIDLANT Bldg N-26
Rm 3208, 9742 Maryland Ave., Norfolk, VA 23511
Generator's Phone: 757 445-6618 Attn: Tom Kowalski

Generator's Site Address (if different than mailing address)
NAVFAC MIDLANT
Naval Weapons Station Yorktown
Yorktown, VA 23691

6. Transporter 1 Company Name: LCM Corporation
U.S. EPA ID Number: N/A

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
WM Middle Peninsula Landfill
3714 Waste Management Way
Facility's Phone: 800-553-7771 Glenns, VA 23149
U.S. EPA ID Number: N/A

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Nonhazardous, Non DOT regulated mud	24	DM	15,000	P	None
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1.3538MR mud from monitor well
CESI Job#: ROAN-TFORT-2985-17559

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: THOMAS KOWALSKI
Signature:
Month 11 Day 17 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kevin Childs
Signature:
Month 11 Day 19 Year 09
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: B Reiding
Signature:
Month 1 Day 20 Year 09

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLS-C 6 10497 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

Appendix C
Soil Boring and Monitoring Well Installation Logs

PROJECT NUMBER	BORING NUMBER
357098.SI.FQ	SB-BGGW09A SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Cheatham Annex & Yorktown NWS Background Study — LOCATION : Yorktown NWS (Indian Fields Road)

TOC ELEVATION : NA — DRILLING CONTRACTOR : Parratt-Wolff, Hillsborough, NC

DRILLING METHOD AND EQUIPMENT USED : Ingersol Rand A300, 6-inch mud rotary drill bit, 4-foot acetate liners (MC) and 2"x24" steel split spoon (SS), 6-inch surface casing

WATER LEVELS : 23.29 ft btoc — START : 8/14/2009 — END : 8/19/2009 — LOGGER : Toby Stewart/BTR

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	SOIL 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 (ppm):)
	1.5		HA-1	0-1.5': Organic soil (OL) black to very dark brown (10YR 2/1-2/2), moist to wet in places, root mat, roots	
	4		HA-1	1.5-5': Poorly graded sand with pebble gravel (SP), moist, very pale brown to yellow (10YR 7/4-7/6), very loose, fine-coarse grain, fine to coarse pebbles, sub-rounded	
5	6.5	30"	MC-1	4-6.5': Silty sand (SM-SW), yellow (10YR 8/6-8/8), wet, very loose to loose, fine to coarse grain, large roots @ 5.5', pebbles	0.00 ppm
	8			6.5-8': No Recovery	
10	12			8-12': Not Sampled	
	12.5	6"	MC-2	12-12.5': Silty sand (SM), pale yellow (2.5Y 8/4), mottled strong brown (7.5YR 5/8), transition to silt/fine sand	
	14	18"	MC-2	12.5-14': Silty and (SM-SP), strong brown (7.5YR 5/8), wet, fine gravel, 10-15% fine to medium shell fragments	0.00 ppm
	14.2	2.4"	MC-2	14-14.2': Silty sand with shell gravel (SM), greenish gray (GLEY1 5/10GY), fine gravel, medium dense, fine to medium shell fragments	
15	16			14.2-16': No Recovery	
20	20			16-20': Not Sampled	
	24	48"	MC-3	20-24': Clayey sand with shell gravel (SC), greenish gray (GLEY 1 6/10G4), moist to wet in places, med dense, low plastic fines, ~30% shell fragments (fine to coarse fragments)	0.00 ppm
25	28	48"	MC-4	24-28': Sandy clay with shell gravel (CL), greenish gray (GLEY 1 6/10GY), moist, stiff, low plasticity, fine grain sands, medium to coarse shell fragments	0.00 ppm
30	32	48"	MC-5	28-32': Silty clay (CL), greenish gray (GLEY 1 5/5G), moist, stiff, high to med plasticity, laminated dark greenish gray with silt (ML) stringers throughout	0.00 ppm
35	36	48"	MC-6	32-36': Silty clay (CL), greenish gray (GLEY 1 5/5G), dry to moist, stiff, high to med plasticity, laminated dark greenish gray with silt (ML) stringers throughout with fine to med grain shell fragments	0.00 ppm
40	44			36-44': Not Sampled	
45	46	24"	SS-1	44-46': Clay with sand (CL), light greenish gray (GLEY1 7/10GY), dry to moist, soft, none to low plastic fines, very fine sand, 15-20% coarse to med white shell fragments, trace grayish green (GLEY1 4/5G)	0.00 ppm
50				46-59': Not Sampled	
55	59				
60	61	24"	SS-2	59-61': Silty sand with shell gravel (SM), dark greenish gray (GLEY1 4/10Y), wet, loose very fine-med grain, well graded shell fragments (fine-coarse), very silty, saturated	0.00 ppm

PROJECT NUMBER	BORING NUMBER
357098.SI.FQ	SB-BGGW09A SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Cheatham Annex & Yorktown NWS Background Study — LOCATION : Yorktown NWS (Indian Fields Road)

TOC ELEVATION : NA — DRILLING CONTRACTOR : Parratt-Wolff, Hillsborough, NC

DRILLING METHOD AND EQUIPMENT USED : Ingersol Rand A300, 6-inch mud rotary drill bit, 4-foot acetate liners (MC) and 2"x24" steel split spoon (SS), 6-inch surface casing

WATER LEVELS : 23.29 ft btoc — START : 8/14/2009 — END : 8/19/2009 — LOGGER : Toby Stewart/BTR

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	SOIL 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 (ppm):
65					
	69				
70	71	24"	SS-3	69-71': Silty sand (SM), dark greenish gray (GLEY1 4/10Y), wet, very loose to loose, fine-med, 5-10% large white shell fragments	0.00 ppm
75				71-76': Not Sampled	
				END OF BORING	

PROJECT NUMBER	BORING NUMBER
357098.SI.FQ	SB-BGGW10/10A SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Cheatham Annex & Yorktown NWS Background Study — LOCATION : Yorktown NWS (Main & Shops Rd)

TOC ELEVATION : NA — DRILLING CONTRACTOR : Parratt-Wolff, Hillsborough, NC

DRILLING METHOD AND EQUIPMENT USED : Ingersol Rand A300, 6-inch mud rotary drill bit, 2"x24" steel split spoon, 6-inch surface casing

WATER LEVELS : 39.79 ft btoc — START : 8/11/2009 — END : 8/11/2009 LOGGER : Toby Stewart/BTR

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	SOIL 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 (ppm):
	0-1.5'	18"	HA-1	0-1.5': Organic Soil (OL), very dark brown (7.5YR 2.5/3), dry, loose, roots/organics	0.00 ppm
	1.5-2.5'	12"	HA-2	1.5-2.5': Silty Clay with Shell Gravel (CL), brown (7.5YR 4/3), medium-stiff, dry, non to low plasticity, whole shells up to 2" in size	0.00 ppm
	2.5-3.5'	12"	HA-3	2.5-3.5': Clayey Sand (SC), light yellowish brown (2.5Y 6/4), dry, med. Dense, very fine grain	0.00 ppm
5	3.5-5'	18"	HA-4	3.5'-5': Clayey Sand (SC), pale yellow (5Y 8/3) and light yellowish brown (2.5Y 6/4), mottled reddish yellow (7.5 YR 6/8), fine grain, laminated	0.00 ppm
	7	24"	SS-1	5-7': Clayey Sand (SC), pale yellow (5Y 8/3), dry, dense, very fine to fine grains, mottled yellowish red to strong brown 30%, non-plastic	0.00 ppm
	8			7-8': Not Sampled, spilt spoon every 5'	
10	10	24"	SS-2	8-10': Sand (SM-SP), pale yellow (5Y 8/3), wet, loose, mottled 30-40% yellowish red (5YR 5/8), trace very fine to fine black particles, medium Sands	0.00 ppm
	13			10-13': Not Sampled	
15	15	12"	SS-3	13-15': Sand (SM-SP), mottled brownish yellow and pale yellow, (10YR 6/8 and 5Y 8/3), wet, loose, sub-angular, fine-medium sands	0.00 ppm
	18			15-18': Not Sampled	
20	20	12"	SS-4	18-20': Sand (SP), very pale brwon (10YR 7/4), wet, loose, medium sands, laminated red and yellowish red, trace rounded pebbles (3/8")	0.00 ppm
	23			20-23': Not Sampled	
25	25	24"	SS-5	23-25: Sandy Clay (CL), light brownish gray (2.5Y 6/2), moist, medium stiff, reddish yellow (7.5YR 6/8) sand stringers throughout, fine to medium sands, low plasticity	0.00 ppm
	28			25-28': Not Sampled	
30	30	24"	SS-6	28-30': Silty Clay (CL), dark greenish gray to dark bluish gray (GLEY 2 4/10-4/5B), moist, medium to stiff, high plasticity, organic odor, bottom 4" is dark reddish brown to reddish brown (5YR 3/4-5/4) Clay (CL) with up to 40% fine to medium, white, angular shell fragments	0.00 ppm
	33			30-33': Not Sampled	
35	35	24"	SS-7	33-35': Poorly graded shell gravel with silt (GP-GM), wet, loose to medium, dark reddish brown (5YR 3/4), medium shell fragments, trace whole shells greater than 1/4", few dark bluish gray (GLEY 2 4/5B) clay stringers containing 20% white shell fragments	0.00 ppm
	38			35-38': Not Sampled	
40	40	24"	SS-8	38-40': Silty shell gravel (GM), greenish gray (GLEY 2 5/5BG), wet, loose to medium, fine gravel of shell fragments, 5-10% fine to medium black particles, trace whole shells/fragments greater than 3/8"	0.00 ppm
45	48			40-48': Not Sampled	
50	50	24"	SS-9	48-50': Well graded sand with gravel (SW), greenish gray (GLEY 2 5/5BG), wet, loose, very fine to fine sand, 10-15% fine black particles, gravel is fine-medium shell fragments, 5-10% whole shells and fragments greater than 3/8"	0.00 ppm

PROJECT NUMBER	BORING NUMBER
357098.SI.FQ	SB-BGGW10/10A SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Cheatham Annex & Yorktown NWS Background Study — LOCATION : Yorktown NWS (Main & Shops Rd)

TOC ELEVATION : NA — DRILLING CONTRACTOR : Parratt-Wolff, Hillsborough, NC

DRILLING METHOD AND EQUIPMENT USED : Ingersol Rand A300, 6-inch mud rotary drill bit, 2"x24" steel split spoon, 6-inch surface casing

WATER LEVELS : 39.79 ft btoc — START : 8/11/2009 — END : 8/11/2009 — LOGGER : Toby Stewart/BTR

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	SOIL 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 (ppm):)
	53			50-53': Not Sampled	
55	55	24"	SS-10	53-55': Well graded sand with gravel (SW), greenish gray (GLEY 2 5/5BG), wet, loose, very fine to fine sand, 10-15% fine black particles, gravel is fine-med shell fragments, 5-10% whole shells and fragments less than 3/8"	0.00 ppm
	57	24"	SS-11	55-57': Well graded sand with gravel (SW), greenish gray (GLEY 2 5/5BG), wet, loose, very fine to medium sand, 10-15% fine black particles, gravel is fine-med shell fragments, 5-10% whole shells and fragments less than 3/8"	0.00 ppm
	59	24"	SS-12	57-59': Poorly graded sand with shell gravel (SP-SM), dark greenish gray (GLEY 2 4/5BG), wet, loose to med dense, very fine-fine gravel, few clay stringers, shell is fine gravel-sized white angular fragments, silty clay (CL) layer at bottom of sample ~58.8-59.0'	0.00 ppm
60	60 61	24"	SS-13	59-61': Sand with shell gravel (SP-SM), at 60-61' Silty clay (CL), dark greenish gray (GLEY 2 4/5BG), moist, stiff, high plasticity, very fine-fine gravel shell particles	0.00 ppm
	63	24"	SS-14	61-63': Silty clay (CL), dark greenish gray (GLEY 2 4/5BG), moist, stiff, high plasticity, trace silt (ML), very fine sand stringers with shell fragments less than 1" thick	1.25-1.5 tsf 0.00 ppm
65	65	24"	SS-15	63-65': Silty clay (CL), dark greenish gray (GLEY 2 4/5BG), moist, stiff, high plasticity, trace very fine sand (SP-SM) stringers with shell fragments less than 1" thick	0.00 ppm
70	74			65-74': Not Sampled	
75	76	24"	SS-16	74-76': Clay with sand (CL), greenish gray (GLEY1 5/10GY), dry to moist, soft to medium, very fine to fine grain, 3-7% large (up to 1") shell fragments, medium plasticity	0.00 ppm
80					
85				76-104': Not Sampled	
90					
95					
100					

PROJECT NUMBER	BORING NUMBER
357098.SI.FQ	SB-BGGW10/10A SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Cheatham Annex & Yorktown NWS Background Study — LOCATION : Yorktown NWS (Main & Shops Rd)

TOC ELEVATION : NA — DRILLING CONTRACTOR : Parratt-Wolff, Hillsborough, NC

DRILLING METHOD AND EQUIPMENT USED : Ingersol Rand A300, 6-inch mud rotary drill bit, 2"x24" steel split spoon, 6-inch surface casing

WATER LEVELS : 39.79 ft btoc — START : 8/11/2009 — END : 8/11/2009 LOGGER : Toby Stewart/BTR

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	SOIL 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 (ppm):)
	104				
105	106	24"	SS-17	104-106': Silty sand (SM), dark greenish gray (GLEY1 4/10GY), wet, loose, very fine to medium grain, no shell fragments presents	0.00 ppm
110				106-117': Not Sampled	
115	117				
	119	24"	SS-18	117-119': Silty sand (SM), dark greenish gray (GLEY1 4/10GY), wet, loose, fine to medium grain, >1" shell fragments, low plastic fines, trace clay stringers	0.00 ppm
120				END OF BORING	

PROJECT NUMBER	WELL NUMBER	
357098.SI.FQ	YBKG-BGGW10	SHEET 1 OF 1

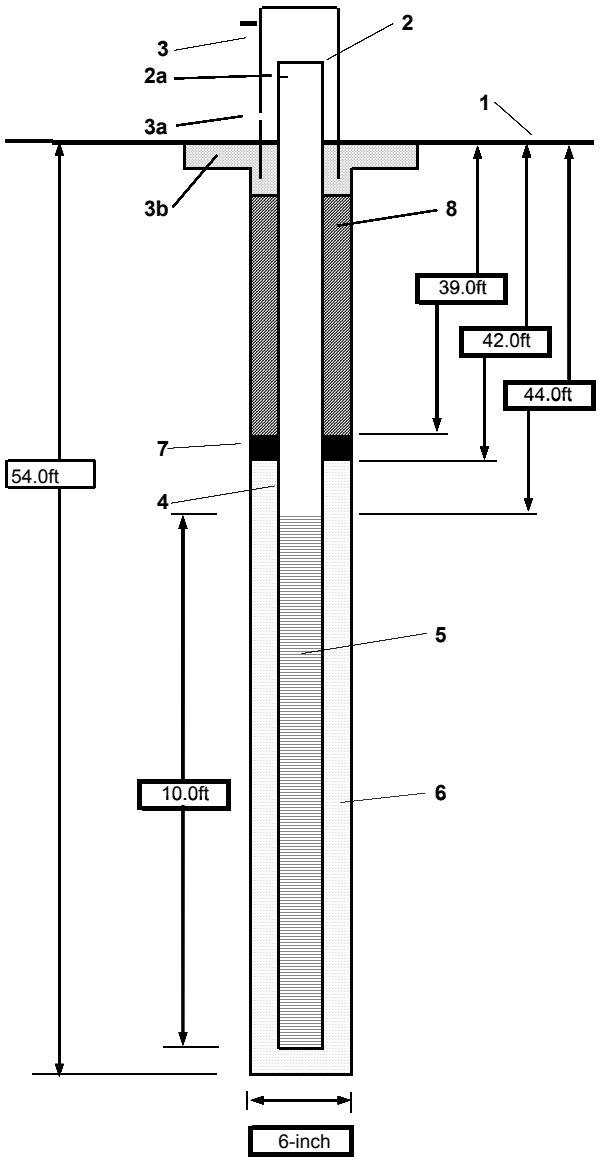
WELL COMPLETION DIAGRAM

PROJECT : Cheatham Annexx & Yorktown NWS Background Study LOCATION : Yorktown NWS (Main & Shops Rd)

DRILLING CONTRACTOR : Parratt-Wolff Drilling/Josh Ellingerworth

DRILLING METHOD AND EQUIPMENT USED: Ingersol Rand A300, 8-inch & 6-inch mud rotary drill bit, 2"x24" steel split spoon

WATER LEVELS : 39.79ft btoc START : 08/11/2009 END : 08/12/2009 LOGGER : Toby Stewart/BTR



1- Ground elevation at well: NA

2- Top of casing elevation: NA
a) vent hole?: no

3- Wellhead protection cover type: 4-inch square, steel casing
a) weep hole?: yes
b) concrete pad dimensions: 3ft x 3ft x 4-inch

4- Dia./type of well casing: 2-inch/PVC

5- Type/slot size of screen: PVC/0.01

6- Type screen filter: No. 1 Sand Pack
a) Quantity used: ~3.0 - 50lb bags

7- Type of seal: bentonite 3/8-inch medium chip
a) Quantity used: 0.5 - 501lb bag

8- Grout
a) Grout mix used: Portland Type I/II
b) Method of placement: tremie
c) Vol. of well casing grout: ~85 gallons

Development method: submersible pump (Proactive Hurricane)

Development time: 1.25hrs

Estimated purge volume: ~22.5 gallons

Comments: 550-600 gallons of drilling fluid lost to formation during drilling

PROJECT NUMBER	WELL NUMBER
357098.SI.FQ	YBKG-BGGW10A SHEET 1 OF 1

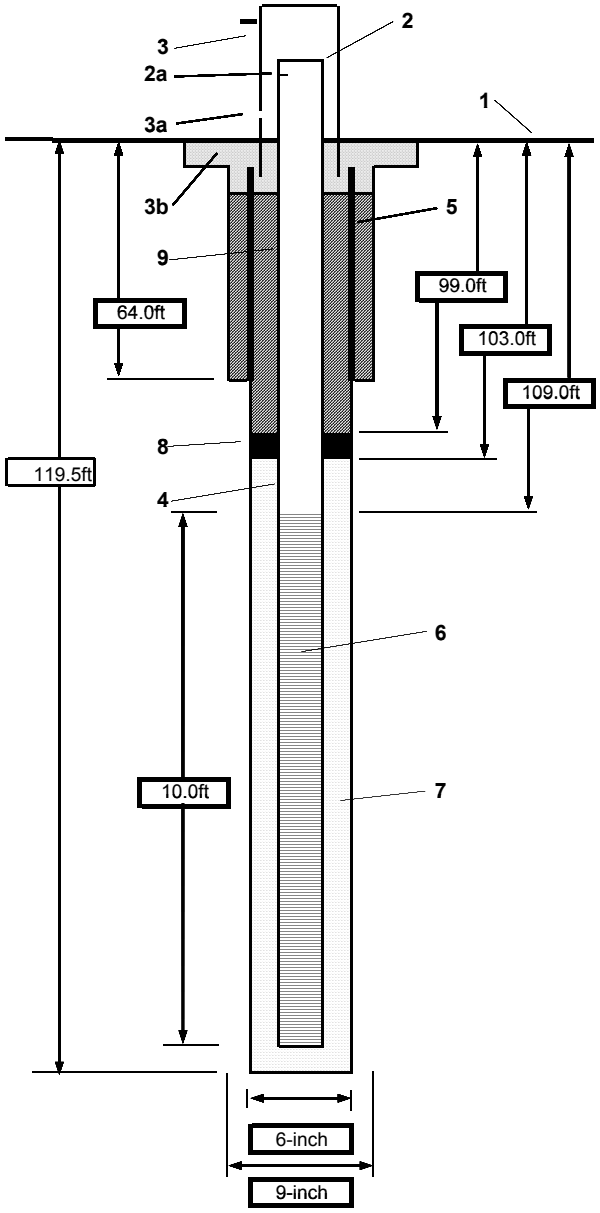
WELL COMPLETION DIAGRAM

PROJECT : Cheatham Annexx & Yorktown NWS Background Study LOCATION : Yorktown NWS (Main & Shops Rd)

DRILLING CONTRACTOR : Parratt-Wolff Drilling/Gary Ellingerworth

DRILLING METHOD AND EQUIPMENT USED : Ingersol Rand A300, 8-inch & 6-inch mud rotary drill bit, 2"x24" steel split spoon, 6-inch surface casing

WATER LEVELS : 40.99ft btoc START : 8/12/2009 END : 08/18/2009 LOGGER : Toby Stewart/BTR



1- Ground elevation at well	NA
2- Top of casing elevation	NA
a) vent hole?	no
3- Wellhead protection cover	4-inch square, steel casing
a) weep hole?	yes
b) concrete pad dimensions	3ft x 3ft x 4-inch
4- Dia./type of well casing	2-inch/PVC
5- Dia./type of surface casing	6-inch/steel casing to 64ft bgs
6- Type/slot size of screen	PVC/0.01
7- Type screen filter	No. 1 Sand Pack
a) Quantity used	~4.5 - 50lb bags
8- Type of seal	bentonite 3/8-inch medium chip
a) Quantity used	0.5 - 501lb bag
9- Grout	
a) Grout mix used	Portland Type I/II
b) Method of placement	tremie
c) Vol. of surface casing grout	~97 gallons
d) Vol. of well casing grout	~75 gallons
Development method	submersible pump (Proactive Hurricane)
Development time	1.5hrs
Estimated purge volume	32.0 gallons

Comments

PROJECT NUMBER	WELL NUMBER
357098.SI.FQ	YBKG-BGGW09A SHEET 1 OF 1

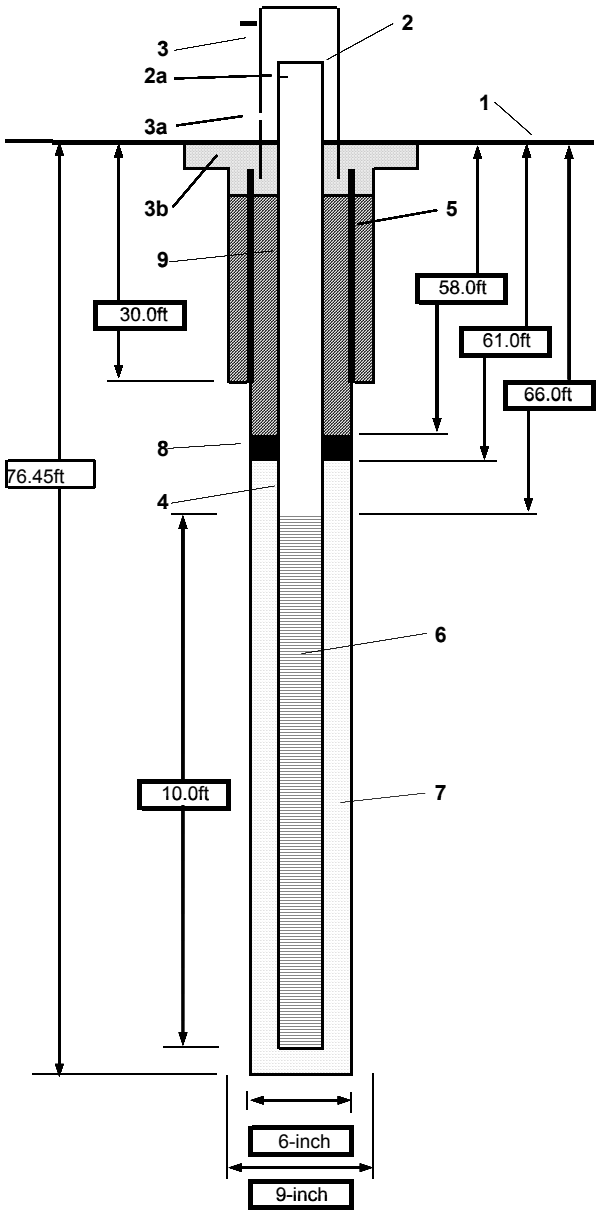
WELL COMPLETION DIAGRAM

PROJECT : Cheatham Annexx & Yorktown NWS Background Study LOCATION : Yorktown NWS (Indian Fields Road)

DRILLING CONTRACTOR : Parratt-Wolff Drilling/Josh Ellingerworth

DRILLING METHOD AND EQUIPMENT USED: Ingersol Rand A300, 8-inch & 6-inch mud rotary drill bit, 2"x24" steel split spoon, 6-inch surface casing

WATER LEVELS : 23.29ft btoc START : 08/14/2009 END : 08/19/2009 LOGGER : Toby Stewart/BTR



1- Ground elevation at well	NA
2- Top of casing elevation	NA
a) vent hole?	no
3- Wellhead protection cover type	4-inch square, steel casing
a) weep hole?	yes
b) concrete pad dimensions	3ft x 3ft x 4-inch
4- Dia./type of well casing	2-inch/PVC
5- Dia./type of surface casing	6-inch/steel casing from surface to 64ft bgs
6- Type/slot size of screen	PVC/0.01
7- Type screen filter	No. 1 Sand Pack
a) Quantity used	~4.5 - 50lb bags
8- Type of seal	bentonite 3/8-inch medium chip
a) Quantity used	0.5 - 501lb bag
9- Grout	
a) Grout mix used	Portland Type I/II
b) Method of placement	tremie
c) Vol. of surface casing grout	~35 gallons
d) Vol. of well casing grout	~65-70 gallons
Development method	submersible pump (Proactive Hurricane)
Development time	2.75hrs
Estimated purge volume	~88 gallons

Comments achieved consistent water level at 0.5 gal/min flow during well development, purge water turbidity value reached <15NTU

Appendix D
Data Validation Report

ENVIRONMENTAL
Data Services, Inc.

EXPLOSIVES

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK24

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-3-CC-8809	802689	Water
1MS	YBKG-GW11-3-CC-0809MS	802689MS	Water
1MSD	YBKG-GW11-3-CC-0809MSD	802689MSD	Water
2	YBKG-EB01-080309	802691	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-080309	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - EDS sample ID #1 exhibited a %D of 41% for nitrobenzene and has been qualified as estimated (J).

1

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW113CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 06AUG091033-R811

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/05/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/06/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/09/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	9.2	J 2C
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

hw
11/10/09

2

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

EB01-080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 06AUG091033-R821

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/05/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/06/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/09/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

hw
11/10/09

ENVIRONMENTAL
Data Services, Inc.

METALS & CYANIDE
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK24

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-3-CC-0809	802689	Water
1MS	YBKG-GW11-3-CC-0809MS	802689MS	Water
1MSD	YBKG-GW11-3-CC-0809MSD	802689MSD	Water
1F	YBKG-GW11-3-CC-0809F	802690	Water
1FMS	YBKG-GW11-3-CC-0809FMS	802690MS	Water
1FMSD	YBKG-GW11-3-CC-0809FMSD	802690MSD	Water
2	YBKG-EB01-080309	802691	Water
2F	YBKG-EB01-080309F	802692	Water

The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

Holding Times - All samples were prepared and analyzed within 14 days for cyanide, 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration except the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Mercury	0.118	0.59	None	All ND
Zinc	3.136	15.68	None	See EB01 & EB01F
Antimony	1.018	5.39	B	1, 1F

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-080309	Antimony	0.78	3.9	None	See MBLK
	Chromium	2.0	10	None	All ND
	Manganese	0.54	2.7	None	All >5X
	Sodium	180	900		
	Zinc	3.7	18.5	B	1
YBKG-EB01-080309F	Antimony	0.75	3.75	None	See MBLK
	Sodium	125	625	None	All >5X
	Zinc	2.8	14	B	1F

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike/Duplicate - The matrix spike/duplicate sample exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	%R	Qualifier	Affected Samples
1	Mercury	83.6%	J/UJ	All Samples

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Quantitation - No discrepancies were identified.

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW11-3-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK24

Matrix (soil/water): WATER Lab Sample ID: 802689

Level (low/med): LOW Date Received: 08/05/2009

% 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	1.9	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.61	J		MS	
7440-39-3	Barium	36.9	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	75100			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	198	J		P	
7439-92-1	Lead	0.51	J		MS	
7439-95-4	Magnesium	1620	J		P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7439-96-5	Manganese	23.8			P	
7440-23-5	Sodium	5860			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	2.0	U		MS	
7440-09-7	Potassium	880	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.7	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/10/09

1f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW11-3-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK24

Matrix (soil/water): FILTRATE Lab Sample ID: 802690

Level (low/med): LOW Date Received: 08/05/2009

% 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	0.87	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.58	J		MS	
7440-39-3	Barium	33.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	74100			P	
7440-48-4	Cobalt	0.70	J		P	
7440-47-3	Chromium	10.0	U		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	118	J		P	
7439-92-1	Lead	2.0	U		MS	
7439-95-4	Magnesium	1620	J		P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7439-96-5	Manganese	16.4			P	
7440-23-5	Sodium	5800			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	2.0	U		MS	
7440-09-7	Potassium	922	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.3	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

 MW 11/10/09

2

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-EB01-080309

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK24

Matrix (soil/water): WATER Lab Sample ID: 802691

Level (low/med): LOW Date Received: 08/05/2009

% 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	0.78	J		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	2.0	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	200	U		P
7439-92-1	Lead	2.0	U		MS
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV MSL
7439-96-5	Manganese	0.54	J		P
7440-23-5	Sodium	180	J		P
7440-02-0	Nickel	40.0	U		P
7440-28-0	Thallium	2.0	U		MS
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	3.7	J		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN UW 11/10/09

2f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-EB01-080309F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK24

Matrix (soil/water): FILTRATE Lab Sample ID: 802692

Level (low/med): LOW Date Received: 08/05/2009

% 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	0.75	J		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	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	200	U		P
7439-92-1	Lead	2.0	U		MS
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	125	J		P
7440-02-0	Nickel	40.0	U		P
7440-28-0	Thallium	2.0	U		MS
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	2.8	J		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

ENVIRONMENTAL
Data Services, Inc.

PESTICIDES/PCBs

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK24

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-3-CC-0809	802689	Water
1MS	YBKG-GW11-3-CC-0809MS	802689MS	Water
1MSD	YBKG-GW11-3-CC-0809MSD	802689MSD	Water
2	YBKG-EB01-080309	802691	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Instrument performance - All 4,4'-DDT/endrin % breakdown, resolution check mixture and PEMs were within criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

MS/MSD Sample ID	Compound	MS/MSD %R/RPD	Qualifier
1	Dieldrin	Ok/Ok/31	None for RPD alone
	4,4'-DDE	Ok/Ok/33	
	Endrin	Ok/Ok/34	

MS/MSD Sample ID	Compound	MS/MSD %R/RPD	Qualifier
1 (cont.)	Endosulfan II	Ok/Ok/31	None for RPD alone
	4,4'-DDD	Ok/Ok/34	
	Endosulfan sulfate	Ok/Ok/31	
	4,4'-DDT	Ok/Ok/35	

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-080309	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

113CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 21AUG091728-R031

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/05/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/06/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.096	U
72-55-9	4,4'-DDE	0.096	U
72-20-8	Endrin	0.096	U
33213-65-9	Endosulfan II	0.096	U
72-54-8	4,4'-DDD	0.096	U
1031-07-8	Endosulfan sulfate	0.096	U
50-29-3	4,4'-DDT	0.096	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.096	U
7421-93-4	Endrin aldehyde	0.096	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

hw
11/10/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 1035 (g/mL) ML Lab File ID: 21AUG091728-R041

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/05/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/06/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.097	U
72-55-9	4,4'-DDE	0.097	U
72-20-8	Endrin	0.097	U
33213-65-9	Endosulfan II	0.097	U
72-54-8	4,4'-DDD	0.097	U
1031-07-8	Endosulfan sulfate	0.097	U
50-29-3	4,4'-DDT	0.097	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.097	U
7421-93-4	Endrin aldehyde	0.097	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

FORM I OTHER

WW
11/10/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

113CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 26AUG091641-R061

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/05/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/06/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

FORM I OTHER

MW
11/10/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 1035 (g/mL) ML Lab File ID: 26AUG091641-R091

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/05/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/06/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	0.48	U
11104-28-2------	Aroclor-1221	0.48	U
11141-16-5------	Aroclor-1232	0.48	U
53469-21-9------	Aroclor-1242	0.48	U
12672-29-6------	Aroclor-1248	0.48	U
11097-69-1------	Aroclor-1254	0.48	U
11096-82-5------	Aroclor-1260	0.48	U

FORM I OTHER

lw
11/10/09

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK24

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-3-CC-0809	802689	Water
1MS	YBKG-GW11-3-CC-0809MS	802689MS	Water
1MSD	YBKG-GW11-3-CC-0809MSD	802689MSD	Water
2	YBKG-EB01-080309	802691	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
A080609LCS	n-Nitrosodiphenylamine	126%	None	All ND
	Butylbenzylphthalate	142%		
	Benzo(g,h,i)perylene	146%		

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-080309	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - No discrepancies were identified.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

113CC8809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 802689

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/06/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/11/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.5	U
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
98-86-2	Acetophenone	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitroso-di-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	9.5	U
87-68-3	Hexachlorobutadiene	9.5	U
105-60-2	Caprolactam	9.5	U
59-50-7	4-Chloro-3-Methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.5	U
92-52-4	1,1'-Biphenyl	9.5	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.5	U
208-96-8	Acenaphthylene	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.5	U

FORM I SV

lw
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

113CC8809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 802689

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/06/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/11/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.5	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.5	U
86-73-7	Fluorene	9.5	U
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl-phenylether	9.5	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.5	U
101-55-3	4-Bromophenyl-phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
1912-24-9	Atrazine	9.5	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butylphthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
56-55-3	Benzo(a)anthracene	9.5	U
91-94-1	3,3'-Dichlorobenzidine	9.5	U
218-01-9	Chrysene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
117-84-0	Di-n-octylphthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW
11/10/09

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
113CC8809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK24

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 802689

Sample wt/vol: 1050 (g/mL) mL Lab File ID: 802689

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/05/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/06/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/11/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	4.10	8.1	~~NJAB~~ R
02		Unknown phenol derivative	13.13	8.2	~~J~~ J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796(2)	Total Alkanes	N/A		

(2) EPA-designated Registry Number.

SOM01.2

NW
11/10/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 802691

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/06/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/11/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.5	U
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
98-86-2	Acetophenone	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitroso-di-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	9.5	U
87-68-3	Hexachlorobutadiene	9.5	U
105-60-2	Caprolactam	9.5	U
59-50-7	4-Chloro-3-Methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.5	U
92-52-4	1,1'-Biphenyl	9.5	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.5	U
208-96-8	Acenaphthylene	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.5	U

FORM I SV

lw
11/10/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 802691

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/06/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/11/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.5	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.5	U
86-73-7	Fluorene	9.5	U
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl-phenylether	9.5	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.5	U
101-55-3	4-Bromophenyl-phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
1912-24-9	Atrazine	9.5	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butylphthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
56-55-3	Benzo(a)anthracene	9.5	U
91-94-1	3,3'-Dichlorobenzidine	9.5	U
218-01-9	Chrysene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
117-84-0	Di-n-octylphthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW
11/10/09

2

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
KGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK24

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 802691

Sample wt/vol: 1050 (g/mL) mL Lab File ID: 802691

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/05/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/06/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/11/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS:(ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	4.09	4.6	~~NJAB~~ R
02		Unknown	14.31	3.9	~~J~~ J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796(2)	Total Alkanes	N/A		

(2)EPA-designated Registry Number.

SOM01.2

lw
4/10/09

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK24

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-3-CC-0809	802689	Water
1MS	YBKG-GW11-3-CC-0809MS	802689MS	Water
1MSD	YBKG-GW11-3-CC-0809MSD	802689MSD	Water
2	YBKG-EB01-080309	802691	Water
3	YBKG-TB01-080309	802693	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values except the following.

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
08/05/09	2-Butanone	0.022	L/R	All samples

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/10/09	2-Butanone	0.022	None	See ICAL

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks exhibited the following contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MBLK081009MA	Carbon disulfide	0.22	1.1	None	All ND

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-TB01-080309	All non-detect	--	--	--	--
YBKG-EB01-080309	Methyl-t-butyl ether	0.30	1.50	None	All ND
	Chloroform	0.48	2.4		

Field Duplicates - Field duplicate samples were not included in this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - All criteria were met.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW113CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802689

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

lw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW113CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802689

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

NW
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW113CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802689

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802689

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

NW
11/10/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802691

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	0.30	J
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	0.48	J
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

hw
1/10/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802691

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/10/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGEB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802691

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802691

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 287-92-3	CYCLOPENTANE	5.49	0.73	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

11/10/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802693

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802693

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

MW
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802693

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802693

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/10/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGTB01080309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK24

Matrix: (soil/water) WATER Lab Sample ID: 802693

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 802693

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

LW
11/10/09

ENVIRONMENTAL
Data Services, Inc.

EXPLOSIVES

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK25

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-1-YE-0809	803269	Water
2	YBKG-GW11-2-YE-0809	803271	Water
3	YBKG-GW13-3-CC-0809	803273	Water
4	YBKG-EB01-081009	803275	Water
4MS	YBKG-EB01-081009MS	803275MS	Water
4MSD	YBKG-EB01-081009MSD	803275MSD	Water
5	YBKG-GW13-1-YE-0809	803277	Water
5RE	YBKG-GW13-1-YE-0809RE	803277RE	Water
6	YBKG-GW13-2-YE-0809	803279	Water
6RE	YBKG-GW13-2-YE-0809RE	803279RE	Water
7	YBKG-GW12-2-YE-0809	803434	Water
8	YBKG-GW12-1-YE-0809	803436	Water
8MS	YBKG-GW12-1-YE-0809MS	803436MS	Water
8MSD	YBKG-GW12-1-YE-0809MSD	803436MSD	Water
9	YBKG-GW12-3-CC-0809	803438	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days except the following. Several samples were re-extracted due to LCS deficiencies. Use original Form Is for reporting purposes.

Sample	Date Sampled	Date Analyzed	# of Days	Qualifier
5RE	08/08/09	08/17/09	9	J/UJ
6RE	08/08/09	08/17/09	9	J/UJ

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
B081409LCS	HMX	72%	L/UL	5, 6
	2-Amino-4,6-dinitrotoluene	68%		

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-080309	None - ND	-	-	-	-
YBKG-EB01-081009	None - ND	-	-	-	-
YBKG-FB01-081309	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - EDS sample ID #3 exhibited a %D >25% for nitrobenzene and has been qualified as estimated (J).

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW11-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269R1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R591

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/19/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

LW
11/10/09

2

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW11-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271R1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R601

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/19/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

kw
11/10/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 3

GW13-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273R1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R611

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/19/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	2.4	J QC
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

NW
11/10/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 4

EB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275R1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R621

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/19/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

NW
11/10/09

5

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW13-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 14AUG091331-R711

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/17/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
2691-41-0	HMX	0.25	~~U~~ UL	BSL
121-82-4	RDX	0.25	U	
99-35-4	1,3,5-Trinitrobenzene	0.25	U	
99-65-0	1,3-Dinitrobenzene	0.25	U	
98-95-3	Nitrobenzene	0.25	U	
479-45-8	Tetryl	0.25	U	
118-96-7	2,4,6-Trinitrotoluene	0.25	U	
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U	
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	~~U~~ UL	BSL
606-20-2	2,6-Dinitrotoluene	0.25	U	
121-14-2	2,4-Dinitrotoluene	0.25	U	
88-72-2	2-Nitrotoluene	0.25	U	
99-99-0	4-Nitrotoluene	0.25	U	
99-08-1	3-Nitrotoluene	0.25	U	

NW
11/10/09

5RE

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW13-1-YERE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277R1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R641

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/19/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

Use original

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U UJ HT
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

WW
11/10/09

6

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW13-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 14AUG091331-R721

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/17/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
2691-41-0	HMX	0.25	~~U~~ UL	BSL
121-82-4	RDX	0.25	U	
99-35-4	1,3,5-Trinitrobenzene	0.25	U	
99-65-0	1,3-Dinitrobenzene	0.25	U	
98-95-3	Nitrobenzene	0.25	U	
479-45-8	Tetryl	0.25	U	
118-96-7	2,4,6-Trinitrotoluene	0.25	U	
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U	
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	~~U~~ UL	BSL
606-20-2	2,6-Dinitrotoluene	0.25	U	
121-14-2	2,4-Dinitrotoluene	0.25	U	
88-72-2	2-Nitrotoluene	0.25	U	
99-99-0	4-Nitrotoluene	0.25	U	
99-08-1	3-Nitrotoluene	0.25	U	

FORM I EXPLOSIVES

WW
11/10/09

389

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW13-2-YERE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279R1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R651

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/19/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

use original

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U UJ
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

HT

FORM I EXPLOSIVES

NW
11/10/09

7

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW12-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R191

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

lw 11/10/09

8

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW12-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R201

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

WW
11/10/09

9

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW12-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R211

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

nw
11/10/09

ENVIRONMENTAL
Data Services, Inc.

METALS & CYANIDE
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK25

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-1-YE-0809	803269	Water
1F	YBKG-GW11-1-YE-0809F	803270	Water
2	YBKG-GW11-2-YE-0809	803271	Water
2F	YBKG-GW11-2-YE-0809F	803272	Water
3	YBKG-GW13-3-CC-0809	803273	Water
3F	YBKG-GW13-3-CC-0809F	803274	Water
4	YBKG-EB01-081009	803275	Water
4F	YBKG-EB01-081009F	803276	Water
5	YBKG-GW13-1-YE-0809	803277	Water
5F	YBKG-GW13-1-YE-0809F	803278	Water
6	YBKG-GW13-2-YE-0809	803279	Water
6F	YBKG-GW13-2-YE-0809F	803280	Water
7	YBKG-GW12-2-YE-0809	803434	Water
7F	YBKG-GW12-2-YE-0809F	803435	Water
8	YBKG-GW12-1-YE-0809	803436	Water
8MS	YBKG-GW12-1-YE-0809MS	803436MS	Water
8MSD	YBKG-GW12-1-YE-0809MSD	803436MSD	Water
8F	YBKG-GW12-1-YE-0809F	803437	Water
8FMS	YBKG-GW12-1-YE-0809FMS	803436FMS	Water
8FMSD	YBKG-GW12-1-YE-0809FMSD	803436FMSD	Water
9	YBKG-GW12-3-CC-0809	803438	Water
9F	YBKG-GW12-3-CC-0809F	803439	Water

The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

Holding Times - All samples were prepared and analyzed within 14 days for cyanide, 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values except the following.

Compound	%R - High/Low	Qualifier	Affected Samples
Aluminum	171%	K	1, 2, 5, 8, 9
Silver	65.3%	L/UL	1-3, 1F-3F, 5-9, 5F-9F
Iron	144.7%	K	1-3, 3F, 5, 5F, 6-9, 6F

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration except the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Antimony	2.918	14.59	B	1, 1F, 2, 2F, 5, 7-9, 7F-9F
Thallium	0.187	0.935	B	1-3, 1F-3F, 5-9, 5F-9F

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKE-EB01-080309	Antimony	0.78	3.9	None	Already qualified
	Chromium	2.0	10	B	1, 5, 8, 9
	Manganese	0.54	2.7	B	9
	Sodium	180	900	None	All >5X
	Zinc	3.7	18.5	B	1
YBKG-EB01-081309F	Antinomy	0.75	3.75	None	Already qualified
	Sodium	125	625	None	All >5X
	Zinc	2.8	14	B	1F-8F
YBKG-FB01-081309	Thallium	0.14	0.70	None	All >5X
	Lead	2.1	10.5	B	1, 2-8, 7F, 9F
	Zinc	2.6	13	None	See EB01/EB01F

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike/Duplicate - The matrix spike/duplicate sample exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	%R	Qualifier	Affected Samples
8F	Mercury	84.7%	L/UL	All samples

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Quantitation - No discrepancies were identified.

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW11-1-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803269

Level (low/med): LOW Date Received: 08/12/2009

% 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	~~J~~	UL	P	OT
7429-90-5	Aluminum	447		K	P	OT
7440-36-0	Antimony	1.2	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.72	J		MS	
7440-39-3	Barium	104	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	45800			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	2.7	~~J~~	B	P	EBL
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	495		K	P	OT
7439-95-4	Magnesium	8770			P	
7439-96-5	Manganese	13.4	J		P	
7439-97-6	Mercury	0.081	~~J~~	L ~~N~~	CV	MSL
7440-23-5	Sodium	35900			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	2.6	~~J~~	B	P	FBL
7440-09-7	Potassium	7030			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.9	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN hw 11/10/09

1F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW11-1-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803270

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	UT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	0.44	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.70	J		MS	
7440-39-3	Barium	94.7	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	45200			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	200	U		P	
7439-95-4	Magnesium	8380			P	
7439-96-5	Manganese	10.7	J		P	
7439-97-6	Mercury	0.072	~~J~~	L ~~N~~	CV	MSL
7440-23-5	Sodium	33400			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	6670			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.3	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

2

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW11-2-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803271

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	141	~~J~~	K	P	OT
7440-36-0	Antimony	0.69	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.57	J		MS	
7440-39-3	Barium	52.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	65700			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	12.7			P	
7440-50-8	Copper	1.9	J		P	
7439-89-6	Iron	415		K	P	OT
7439-95-4	Magnesium	3270	J		P	
7439-96-5	Manganese	40.6			P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	8900			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	1.9	~~J~~	B	P	FBL
7440-09-7	Potassium	1800	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.3	J		P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

2F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW11-2-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803272

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	DT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	0.53	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.49	J		MS	
7440-39-3	Barium	48.6	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	65300			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	200	U		P	
7439-95-4	Magnesium	3210	J		P	
7439-96-5	Manganese	34.7			P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	8940			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1690	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.1	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

3

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW13-3-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803273

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	20.0	U		MS	
7440-38-2	Arsenic	0.33	J		MS	
7440-39-3	Barium	47.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	100000			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	1060		K	P	OT
7439-95-4	Magnesium	2180	J		P	
7439-96-5	Manganese	46.1			P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	8290			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~U~~	B	MS	MBL
7439-92-1	Lead	2.0	~~U~~	B	P	FBL
7440-09-7	Potassium	1100	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.9	J		P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

3f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW13-3-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803274

Level (low/med): LOW Date Received: 08/12/2009

% 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	~~B~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	20.0	U		MS	
7440-38-2	Arsenic	0.27	J		MS	
7440-39-3	Barium	50.3	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	102000			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	899		K	P	OT
7439-95-4	Magnesium	2190	J		P	
7439-96-5	Manganese	44.8			P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~B~~	CV	MSL
7440-23-5	Sodium	8350			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1130	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	5.2	~~U~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/10/09

4

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-EB01-081009

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803275

Level (low/med): LOW Date Received: 08/12/2009

% 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	20.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	13.0	J		P
7439-89-6	Iron	200	U		P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	2.8	J		P
7439-97-6	Mercury	0.070	~~J~~	L ~~N~~	CV MSL
7440-23-5	Sodium	5000	U		P
7440-02-0	Nickel	40.0	U		P
7440-28-0	Thallium	0.18	J		MS
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	4.7	J		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN LW 11/10/09

4F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-EB01-081009F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803276

Level (low/med): LOW Date Received: 08/12/2009

% 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	20.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	558	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	200	U		P
7439-95-4	Magnesium	135	J		P
7439-96-5	Manganese	15.0	U		P
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV MSL
7440-23-5	Sodium	464	J		P
7440-02-0	Nickel	40.0	U		P
7440-28-0	Thallium	0.18	~~U~~ J		MS
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	4.8	J		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN HW 11/10/09

5

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW13-1-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803277

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	203		K	P	OT
7440-36-0	Antimony	0.51	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.91	J		MS	
7440-39-3	Barium	31.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	42500			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.9	~~J~~	B	P	EBL
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	753		K	P	OT
7439-95-4	Magnesium	5200			P	
7439-96-5	Manganese	28.0			P	
7439-97-6	Mercury	0.078	~~J~~	L ~~N~~	CV	MSL
7440-23-5	Sodium	39300			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	2.2	~~J~~	B	P	FBL
7440-09-7	Potassium	6280			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.0	J		P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

11/10/09

5F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW13-1-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803278

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	20.0	U		MS	
7440-38-2	Arsenic	0.77	J		MS	
7440-39-3	Barium	28.2	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	41800			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	35.7	~~J~~	K	P	OT
7439-95-4	Magnesium	4950	J		P	
7439-96-5	Manganese	22.0			P	
7439-97-6	Mercury	0.10	~~J~~	L ~~N~~	CV	MSL
7440-23-5	Sodium	39400			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	6440			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.6	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

6

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW13-2-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803279

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	20.0	U		MS	
7440-38-2	Arsenic	0.48	J		MS	
7440-39-3	Barium	41.7	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	70800			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	294		K	P	OT
7439-95-4	Magnesium	1850	J		P	
7439-96-5	Manganese	27.1			P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	9640			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	MBL
7439-92-1	Lead	2.2	~~J~~	B	P	PBL
7440-09-7	Potassium	2130	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.4	J		P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN LW 11/10/09

6F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW13-2-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803280

Level (low/med): LOW Date Received: 08/12/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	20.0	U		MS	
7440-38-2	Arsenic	0.43	J		MS	
7440-39-3	Barium	42.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	71900			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	130	~~J~~	K	P	OT
7439-95-4	Magnesium	1850	J		P	
7439-96-5	Manganese	24.9			P	
7439-97-6	Mercury	0.14	~~J~~	L ~~N~~	CV	MSL
7440-23-5	Sodium	9710			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	2090	J		P	
7782-49-2	Selenium	7.7	J		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.3	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN LW 11/10/09

7

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW12-2-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803434

Level (low/med): LOW Date Received: 08/13/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	4.3	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.80	J		MS	
7440-39-3	Barium	34.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	58100			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	114	~~J~~	K	P	OT
7439-95-4	Magnesium	2330	J		P	
7439-96-5	Manganese	18.6			P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	7120			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	4.9	~~J~~	B	P	PBL
7440-09-7	Potassium	2380	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.8	J		P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

7F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW12-2-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803435

Level (low/med): LOW Date Received: 08/13/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	2.4	~~U~~	B	MS	MBL
7440-38-2	Arsenic	0.68	J		MS	
7440-39-3	Barium	31.9	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	58700			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	200	U		P	
7439-95-4	Magnesium	2370	J		P	
7439-96-5	Manganese	9.3	J		P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	7200			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~U~~	B	MS	MBL
7439-92-1	Lead	1.6	~~J~~	B	P	FBL
7440-09-7	Potassium	2460	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	1.8	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW12-1-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803436

Level (low/med): LOW Date Received: 08/13/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	162	~~J~~	K	P	OT
7440-36-0	Antimony	2.2	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.39	J		MS	
7440-39-3	Barium	27.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	39400			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.2	~~J~~	B	P	EBL
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	215		K	P	OT
7439-95-4	Magnesium	6940			P	
7439-96-5	Manganese	15.8			P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	52600			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	2.0	~~J~~	B	P	FBL
7440-09-7	Potassium	8680			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.0	J		P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MJ 11/10/09

8F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW12-1-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803437

Level (low/med): LOW Date Received: 08/13/2009

% 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~~	UL	P	OY
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	3.7	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.36	J		MS	
7440-39-3	Barium	23.2	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	37900			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	200	U		P	
7439-95-4	Magnesium	6700			P	
7439-96-5	Manganese	6.1	J		P	
7439-97-6	Mercury	0.20	~~U~~	UL N	CV	MSL
7440-23-5	Sodium	51100			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	8420			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.0	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/10/09

9

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW12-3-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): WATER Lab Sample ID: 803438

Level (low/med): LOW Date Received: 08/13/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	292		K	P	OT
7440-36-0	Antimony	2.7	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.59	J		MS	
7440-39-3	Barium	28.0	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	89400			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.7	~~J~~	B	P	EBL
7440-50-8	Copper	12.2	J		P	
7439-89-6	Iron	345		K	P	OT
7439-95-4	Magnesium	1410	J		P	
7439-96-5	Manganese	2.4	~~J~~	B	P	EBL
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	4630	J		P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1400	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.4	J		P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

 MW 11/10/09

9F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW12-3-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK25

Matrix (soil/water): FILTRATE Lab Sample ID: 803439

Level (low/med): LOW Date Received: 08/13/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	2.1	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.46	J		MS	
7440-39-3	Barium	26.0	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	88000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.1	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	200	U		P	
7439-95-4	Magnesium	1370	J		P	
7439-96-5	Manganese	15.0	U		P	
7439-97-6	Mercury	0.20	~~U~~	UL ~~N~~	CV	MSL
7440-23-5	Sodium	4610	J		P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	MBL
7439-92-1	Lead	2.1	~~J~~	B	P	FBL
7440-09-7	Potassium	1310	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	20.0	U		P	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

 NW 11/10/09

ENVIRONMENTAL
Data Services, Inc.

PESTICIDES/PCBs
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK25

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-1-YE-0809	803269	Water
2	YBKG-GW11-2-YE-0809	803271	Water
3	YBKG-GW13-3-CC-0809	803273	Water
4	YBKG-EB01-081009	803275	Water
5	YBKG-GW13-1-YE-0809	803277	Water
6	YBKG-GW13-2-YE-0809	803279	Water
7	YBKG-GW12-2-YE-0809	803434	Water
8	YBKG-GW12-1-YE-0809	803436	Water
8MS	YBKG-GW12-1-YE-0809MS	803436MS	Water
8MSD	YBKG-GW12-1-YE-0809MSD	803436MSD	Water
9	YBKG-GW12-3-CC-0809	803438	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Instrument performance - All 4,4'-DDT/endrin % breakdown, resolution check mixture and PEMs were within criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
7	TCX1/TCX2/DCB1/DCB2	128%/133%/Ok/Ok	None - All ND

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
A081409LCS	Endrin	55%	L/UL	All samples

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-080309	None - ND	-	-	-	-
YBKG-EB01-081009	None - ND	-	-	-	-
YBKG-FB01-081309	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 21AUG091728-R091

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
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	
76-44-8	Heptachlor	0.048	U	
309-00-2	Aldrin	0.048	U	
1024-57-3	Heptachlor epoxide	0.048	U	
959-98-8	Endosulfan I	0.048	U	
60-57-1	Dieldrin	0.096	U	
72-55-9	4,4'-DDE	0.096	U	
72-20-8	Endrin	0.096	~~U~~ UL	BSL
33213-65-9	Endosulfan II	0.096	U	
72-54-8	4,4'-DDD	0.096	U	
1031-07-8	Endosulfan sulfate	0.096	U	
50-29-3	4,4'-DDT	0.096	U	
72-43-5	Methoxychlor	0.48	U	
53494-70-5	Endrin ketone	0.096	U	
7421-93-4	Endrin aldehyde	0.096	U	
57-74-9	Chlordane	0.48	U	
8001-35-2	Toxaphene	4.8	U	
5103-74-2	gamma-Chlordane	0.048	U	
5103-71-9	alpha-Chlordane	0.048	U	

FORM I OTHER

hw 11/10/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 995.0 (g/mL) ML Lab File ID: 21AUG091728-R101

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	~~U~~ UL BSL
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.50	U
8001-35-2	Toxaphene	5.0	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U

FORM I OTHER

MW
11/10/09

3

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 21AUG091728-R131

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	~~U~~ UL BSL
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.52	U
8001-35-2	Toxaphene	5.2	U
5103-74-2	gamma-Chlordane	0.052	U
5103-71-9	alpha-Chlordane	0.052	U

NW
11/10/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 4

EB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 940.0 (g/mL) ML Lab File ID: 21AUG091728-R141

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.053	U
319-85-7	beta-BHC	0.053	U
319-86-8	delta-BHC	0.053	U
58-89-9	gamma-BHC (Lindane)	0.053	U
76-44-8	Heptachlor	0.053	U
309-00-2	Aldrin	0.053	U
1024-57-3	Heptachlor epoxide	0.053	U
959-98-8	Endosulfan I	0.053	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	~~U~~ UL BSL
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.53	U
53494-70-5	Endrin ketone	0.11	U
7421-93-4	Endrin aldehyde	0.11	U
57-74-9	Chlordane	0.53	U
8001-35-2	Toxaphene	5.3	U
5103-74-2	gamma-Chlordane	0.053	U
5103-71-9	alpha-Chlordane	0.053	U

NW
11/10/09

5

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 21AUG091728-R151

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.095	U
72-55-9	4,4'-DDE	0.095	U
72-20-8	Endrin	0.095	~~U~~ UL BSL
33213-65-9	Endosulfan II	0.095	U
72-54-8	4,4'-DDD	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
50-29-3	4,4'-DDT	0.095	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

FORM I OTHER

MW
11/10/09

6

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 21AUG091728-R161

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	~~J~~ UL BSL
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

NW
11/10/09

7

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 21AUG091728-R171

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	~~U~~ UL BSL
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.50	U
8001-35-2	Toxaphene	5.0	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U

LW
11/10/09

8

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 1035 (g/mL) ML Lab File ID: 21AUG091728-R181

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.097	U
72-55-9	4,4'-DDE	0.097	U
72-20-8	Endrin	0.097	~~U~~ UL BSL
33213-65-9	Endosulfan II	0.097	U
72-54-8	4,4'-DDD	0.097	U
1031-07-8	Endosulfan sulfate	0.097	U
50-29-3	4,4'-DDT	0.097	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.097	U
7421-93-4	Endrin aldehyde	0.097	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

LW
11/10/09

9

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 21AUG091728-R191

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.099	U
72-55-9	4,4'-DDE	0.099	U
72-20-8	Endrin	0.099	~~U~~ UL BSL
33213-65-9	Endosulfan II	0.099	U
72-54-8	4,4'-DDD	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
50-29-3	4,4'-DDT	0.099	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
57-74-9	Chlordane	0.50	U
8001-35-2	Toxaphene	5.0	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U

NW
11/10/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 25AUG091731-R211

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	0.48	U
11104-28-2------	Aroclor-1221	0.48	U
11141-16-5------	Aroclor-1232	0.48	U
53469-21-9------	Aroclor-1242	0.48	U
12672-29-6------	Aroclor-1248	0.48	U
11097-69-1------	Aroclor-1254	0.48	U
11096-82-5------	Aroclor-1260	0.48	U

FORM I OTHER

LW
11/10/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 995.0 (g/mL) ML Lab File ID: 25AUG091731-R231

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

MW
11/10/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 25AUG091731-R241

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	0.52	U
11096-82-5	Aroclor-1260	0.52	U

FORM I OTHER

MW
11/10/09

4

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGEB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 940.0 (g/mL) ML Lab File ID: 25AUG091731-R251

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	0.53	U
11096-82-5	Aroclor-1260	0.53	U

FORM I OTHER

LW
11/10/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 25AUG091731-R261

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	0.48	U
11104-28-2------	Aroclor-1221	0.48	U
11141-16-5------	Aroclor-1232	0.48	U
53469-21-9------	Aroclor-1242	0.48	U
12672-29-6------	Aroclor-1248	0.48	U
11097-69-1------	Aroclor-1254	0.48	U
11096-82-5------	Aroclor-1260	0.48	U

FORM I OTHER

aw
1/10/09

6

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 25AUG091731-R271

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/12/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	0.47	U
11104-28-2------	Aroclor-1221	0.47	U
11141-16-5------	Aroclor-1232	0.47	U
53469-21-9------	Aroclor-1242	0.47	U
12672-29-6------	Aroclor-1248	0.47	U
11097-69-1------	Aroclor-1254	0.47	U
11096-82-5------	Aroclor-1260	0.47	U

FORM I OTHER

MW
11/10/09

7

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 25AUG091731-R281

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM I OTHER

11/10/09

8

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 1035 (g/mL) ML Lab File ID: 25AUG091731-R291

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

FORM I OTHER

WW
11/10/09

9

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 1010 (g/mL) ML Lab File ID: 25AUG091731-R321

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/13/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM I OTHER

LW
11/10/09

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK25

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-1-YE-0809	803269	Water
2	YBKG-GW11-2-YE-0809	803271	Water
3	YBKG-GW13-3-CC-0809	803273	Water
4	YBKG-EB01-081009	803275	Water
5	YBKG-GW13-1-YE-0809	803277	Water
6	YBKG-GW13-2-YE-0809	803279	Water
7	YBKG-GW12-2-YE-0809	803434	Water
8	YBKG-GW12-1-YE-0809	803436	Water
8MS	YBKG-GW12-1-YE-0809MS	803436MS	Water
8MSD	YBKG-GW12-1-YE-0809MSD	803436MSD	Water
9	YBKG-GW12-3-CC-0809	803438	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/20/09	4-Nitrophenol	26.7%	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks exhibited the following contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MBLK081309B	Caprolactam	0.65	3.25	B	1, 2
MBLK081509A	Caprolactam	0.54	2.7	None	All ND

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	Naphthalene	0.64	3.2	None	Applies to samples in other data packages
	Caprolactam	1.1	5.5		
	Diethylphthalate	1.1	5.5		
	Di-n-butylphthalate	0.89	4.45		
	Butylbenzylphthalate	1.1	5.5		
YBKG-EB01-080309	None - ND	-	-	-	-
YBKG-FB01-081309	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - No discrepancies were identified.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803269

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	0.96	~~JB~~ B MBL
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

LW 11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803269

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.4	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.4	U
86-73-7	Fluorene	9.4	U
84-66-2	Diethylphthalate	9.4	U
7005-72-3	4-Chlorophenyl-phenylether	9.4	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.4	U
101-55-3	4-Bromophenyl-phenylether	9.4	U
118-74-1	Hexachlorobenzene	9.4	U
1912-24-9	Atrazine	9.4	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.4	U
120-12-7	Anthracene	9.4	U
86-74-8	Carbazole	9.4	U
84-74-2	Di-n-butylphthalate	9.4	U
206-44-0	Fluoranthene	9.4	U
129-00-0	Pyrene	9.4	U
85-68-7	Butylbenzylphthalate	9.4	U
56-55-3	Benzo(a)anthracene	9.4	U
91-94-1	3,3'-Dichlorobenzidine	9.4	U
218-01-9	Chrysene	9.4	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U
117-84-0	Di-n-octylphthalate	9.4	U
205-99-2	Benzo(b)fluoranthene	9.4	U
207-08-9	Benzo(k)fluoranthene	9.4	U
50-32-8	Benzo(a)pyrene	9.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U
53-70-3	Dibenz(a,h)anthracene	9.4	U
191-24-2	Benzo(g,h,i)perylene	9.4	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GGW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803269

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.85	25	~~NJAB~~ R
2.	UNKNOWN PHENOL DERIVATIVE	12.87	36	~~J~~ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

NW
11/10/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 803271

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
100-52-7	Benzaldehyde	10	U	
108-95-2	Phenol	10	U	
111-44-4	bis(2-Chloroethyl)ether	10	U	
95-57-8	2-Chlorophenol	10	U	
95-48-7	2-Methylphenol	10	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U	
98-86-2	Acetophenone	10	U	
106-44-5	4-Methylphenol	10	U	
621-64-7	N-Nitroso-di-n-propylamine	10	U	
67-72-1	Hexachloroethane	10	U	
98-95-3	Nitrobenzene	10	U	
78-59-1	Isophorone	10	U	
88-75-5	2-Nitrophenol	10	U	
105-67-9	2,4-Dimethylphenol	10	U	
111-91-1	bis(2-Chloroethoxy)methane	10	U	
120-83-2	2,4-Dichlorophenol	10	U	
91-20-3	Naphthalene	10	U	
106-47-8	4-Chloroaniline	10	U	
87-68-3	Hexachlorobutadiene	10	U	
105-60-2	Caprolactam	0.71	~~JB~~ B	MBL
59-50-7	4-Chloro-3-Methylphenol	10	U	
91-57-6	2-Methylnaphthalene	10	U	
77-47-4	Hexachlorocyclopentadiene	10	U	
88-06-2	2,4,6-Trichlorophenol	10	U	
95-95-4	2,4,5-Trichlorophenol	26	U	
91-58-7	2-Chloronaphthalene	10	U	
92-52-4	1,1'-Biphenyl	10	U	
88-74-4	2-Nitroaniline	26	U	
131-11-3	Dimethylphthalate	10	U	
208-96-8	Acenaphthylene	10	U	
606-20-2	2,6-Dinitrotoluene	10	U	
99-09-2	3-Nitroaniline	26	U	
83-32-9	Acenaphthene	10	U	

FORM I SV

kw
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 803271

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

LW
11/10/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GGW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 803271

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.85	21	~~NJAB~~ R
2.	UNKNOWN PHENOL DERIVATIVE	12.86	62	J ✓ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

lrW
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 803273

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

LW
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 803273

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

MW 11/10/09

3

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GGW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 803273

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.85	19	N ~~JAB~~ R
2.	UNKNOWN PHENOL DERIVATIVE	12.87	12	~~J~~ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

MW
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGEB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 803275

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	0.64	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	1.1	~~B~~ J
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

AW
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGEB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 803275

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	1.1	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.89	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	1.1	J
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

MW 11/10/09

4

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

KGEB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 803275

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.85	27	~~NJAB~~ R
2. 134-62-3	DIETHYLTOLUAMIDE	11.57	13	NJ NJ
3.	UNKNOWN PHENOL DERIVATIVE	12.87	4.7	~~J~~ J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

MW 11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 803277

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.6	U
108-95-2	Phenol	9.6	U
111-44-4	bis(2-Chloroethyl)ether	9.6	U
95-57-8	2-Chlorophenol	9.6	U
95-48-7	2-Methylphenol	9.6	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.6	U
98-86-2	Acetophenone	9.6	U
106-44-5	4-Methylphenol	9.6	U
621-64-7	N-Nitroso-di-n-propylamine	9.6	U
67-72-1	Hexachloroethane	9.6	U
98-95-3	Nitrobenzene	9.6	U
78-59-1	Isophorone	9.6	U
88-75-5	2-Nitrophenol	9.6	U
105-67-9	2,4-Dimethylphenol	9.6	U
111-91-1	bis(2-Chloroethoxy)methane	9.6	U
120-83-2	2,4-Dichlorophenol	9.6	U
91-20-3	Naphthalene	9.6	U
106-47-8	4-Chloroaniline	9.6	U
87-68-3	Hexachlorobutadiene	9.6	U
105-60-2	Caprolactam	9.6	U
59-50-7	4-Chloro-3-Methylphenol	9.6	U
91-57-6	2-Methylnaphthalene	9.6	U
77-47-4	Hexachlorocyclopentadiene	9.6	U
88-06-2	2,4,6-Trichlorophenol	9.6	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.6	U
92-52-4	1,1'-Biphenyl	9.6	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.6	U
208-96-8	Acenaphthylene	9.6	U
606-20-2	2,6-Dinitrotoluene	9.6	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.6	U

LW
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 803277

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.6	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.6	U
86-73-7	Fluorene	9.6	U
84-66-2	Diethylphthalate	9.6	U
7005-72-3	4-Chlorophenyl-phenylether	9.6	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.6	U
101-55-3	4-Bromophenyl-phenylether	9.6	U
118-74-1	Hexachlorobenzene	9.6	U
1912-24-9	Atrazine	9.6	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.6	U
120-12-7	Anthracene	9.6	U
86-74-8	Carbazole	9.6	U
84-74-2	Di-n-butylphthalate	9.6	U
206-44-0	Fluoranthene	9.6	U
129-00-0	Pyrene	9.6	U
85-68-7	Butylbenzylphthalate	9.6	U
56-55-3	Benzo(a)anthracene	9.6	U
91-94-1	3,3'-Dichlorobenzidine	9.6	U
218-01-9	Chrysene	9.6	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.6	U
117-84-0	Di-n-octylphthalate	9.6	U
205-99-2	Benzo(b)fluoranthene	9.6	U
207-08-9	Benzo(k)fluoranthene	9.6	U
50-32-8	Benzo(a)pyrene	9.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.6	U
53-70-3	Dibenz(a,h)anthracene	9.6	U
191-24-2	Benzo(g,h,i)perylene	9.6	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

LW
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GGW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 803277

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.84	29	~~NJAB~~ R
2. 134-62-3	DIETHYLTOLUAMIDE	11.57	4.2	~~NJ~~ NJ
3.	UNKNOWN PHENOL DERIVATIVE	12.87	18	~~J~~ J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW 11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 6

GGW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803279

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

MW 11/11/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803279

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.4	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.4	U
86-73-7	Fluorene	9.4	U
84-66-2	Diethylphthalate	9.4	U
7005-72-3	4-Chlorophenyl-phenylether	9.4	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.4	U
101-55-3	4-Bromophenyl-phenylether	9.4	U
118-74-1	Hexachlorobenzene	9.4	U
1912-24-9	Atrazine	9.4	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.4	U
120-12-7	Anthracene	9.4	U
86-74-8	Carbazole	9.4	U
84-74-2	Di-n-butylphthalate	9.4	U
206-44-0	Fluoranthene	9.4	U
129-00-0	Pyrene	9.4	U
85-68-7	Butylbenzylphthalate	9.4	U
56-55-3	Benzo(a)anthracene	9.4	U
91-94-1	3,3'-Dichlorobenzidine	9.4	U
218-01-9	Chrysene	9.4	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U
117-84-0	Di-n-octylphthalate	9.4	U
205-99-2	Benzo(b)fluoranthene	9.4	U
207-08-9	Benzo(k)fluoranthene	9.4	U
50-32-8	Benzo(a)pyrene	9.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U
53-70-3	Dibenz(a,h)anthracene	9.4	U
191-24-2	Benzo(g,h,i)perylene	9.4	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

lw 11/10/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GGW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803279

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.83	16	N~~JAB~~ R
2.	UNKNOWN PHENOL DERIVATIVE	12.86	17	~~J~~ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

MW
11/10/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 803434

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

FORM I SV

LW
4/10/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 803434

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

11/10/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GGW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 803434

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.81	3.8	~~NJAB~~ R
2.	UNKNOWN PHENOL DERIVATIVE	12.87	29	~~J~~ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

MW
11/10/09

8

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 965.0 (g/mL) ML Lab File ID: 803436

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

FORM I SV

dw
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 965.0 (g/mL) ML Lab File ID: 803436

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

LW
11/10/09

8

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 965.0 (g/mL) ML Lab File ID: 803436

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.82	4.3	~~NJAB~~ RJ
2.	UNKNOWN PHENOL DERIVATIVE	12.86	9.9	~~J~~
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

hw
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 910.0 (g/mL) ML Lab File ID: 803438

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	11	U
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
98-86-2	Acetophenone	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
105-60-2	Caprolactam	11	U
59-50-7	4-Chloro-3-Methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	27	U
91-58-7	2-Chloronaphthalene	11	U
92-52-4	1,1'-Biphenyl	11	U
88-74-4	2-Nitroaniline	27	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	27	U
83-32-9	Acenaphthene	11	U

FORM I SV

bw
11/10/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 910.0 (g/mL) ML Lab File ID: 803438

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	27	U
132-64-9	Dibenzofuran	11	U
100-02-7	4-Nitrophenol	27	U
121-14-2	2,4-Dinitrotoluene	11	U
86-73-7	Fluorene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
100-01-6	4-Nitroaniline	27	U
534-52-1	4,6-Dinitro-2-methylphenol	27	U
86-30-6	N-nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
1912-24-9	Atrazine	11	U
87-86-5	Pentachlorophenol	27	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
56-55-3	Benzo(a)anthracene	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

kw
11/10/09

9

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GGW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 910.0 (g/mL) ML Lab File ID: 803438

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/20/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.82	5.4	~~NJAB~~ R
2.	UNKNOWN PHENOL DERIVATIVE	12.52	9.5	~~J~~ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

LW 11/10/09

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK25

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 10, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW11-1-YE-0809	803269	Water
2	YBKG-GW11-2-YE-0809	803271	Water
3	YBKG-GW13-3-CC-0809	803273	Water
4	YBKG-EB01-081009	803275	Water
5	YBKG-GW13-1-YE-0809	803277	Water
6	YBKG-GW13-2-YE-0809	803279	Water
7	YBKG-TB01-081009	803281	Water
8	YBKG-GW12-2-YE-0809	803434	Water
9	YBKG-GW12-1-YE-0809	803436	Water
9MS	YBKG-GW12-1-YE-0809MS	803436MS	Water
9MSD	YBKG-GW12-1-YE-0809MSD	803436MSD	Water
10	YBKG-GW12-3-CC-0809	803438	Water
11	YBKG-TB01-081209	803440	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values except the following.

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
08/05/09	2-Butanone	0.022	L/R	All samples

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/14/09	2-Butanone	0.020	None	See ICAL
08/17/09	2-Butanone	0.024	None	See ICAL
08/18/09	2-Butanone	0.019	None	See ICAL

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
MA081409LCS	Trichlorofluoromethane	120%	None	All ND

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks exhibited the following contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MBLK081709MA	Carbon disulfide	0.27	1.35	B	3
MBLK081809MA	Carbon disulfide	0.21	1.05	None	All ND

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-TB01-081009	None - ND	-	-	-	-
YBKG-TB01-081209	None - ND	-	-	-	-
YBKG-EB01-080309	Methyl-t-butyl-ether	0.30	1.5	B	3
	Chloroform	0.48	2.4	None	All ND
YBKG-EB01-081009	Acetone	5.8	29	None	Applies to samples in other data packages
	Benzene	0.68	3.4		
	Toluene	3.5	17.5		
	Ethylbenzene	0.58	2.9		
	Xylene(m,p)	2.0	10		
	Xylene(o)	0.81	4.05		

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-FB01-081309	Chloroform	0.32	1.6	None	All ND
	Styrene	0.53	2.65		

Field Duplicates - Field duplicate samples were not included in this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - All criteria were met.

1

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803269

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803269

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

CW
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW111YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803269

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803269

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

MW
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803271

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

MW 11/10/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803271

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

lw 11/10/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW112YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803271

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803271

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

uw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803273

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	5.0	U	
75-15-0	Carbon Disulfide	0.25	~~JB~~ B	MBL
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	0.60	~~J~~ B	EBL
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~J~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	1.0	U	
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

 MW 11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803273

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

fw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW133CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803273

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803273

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

lw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGEB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803275

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.8	
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R IU
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	0.68	J
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	3.5	
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

lew 11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGEB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803275

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	0.58	J
1330-20-7	Xylene (m,p)	2.0	
95-47-6	Xylene (o)	0.81	J
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

lw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGEB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803275

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803275

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	18.62	0.56	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW 11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803277

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R IU
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	0.39	J
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

NW
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803277

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

WS 11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW131YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803277

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803277

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

lcs
11/10/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803279

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

LW 11/10/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803279

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

lw 11/10/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW132YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803279

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803279

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

LW
11/10/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803281

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803281

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

lew
11/10/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803281

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803281

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

LW 11/10/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGTB01081009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803281

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803281

Level: (low/med) LOW Date Received: 08/12/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803434

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	5.0	U	
75-15-0	Carbon Disulfide	1.0	U	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~U~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	1.0	U	
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

lw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803434

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

lw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW122YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803434

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803434

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

lw 11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803436I2

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/18/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R FU
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

HW
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803436I2

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/18/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

LW
11/10/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW121YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803436

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803436I2

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/18/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	13.45	0.69	J
2. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	18.63	0.88	~~NJ~~ NJ
3.	UNKNOWN	20.94	0.52	J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

NW
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803438

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

WW
11/10/09

10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803438

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

lw
11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW123CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803438

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803438

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/17/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

LWJ 11/10/09

11

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01081209

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803440

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803440

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JCL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

MW 11/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01081209

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803440

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803440

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

AW 11/10/09

11

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGTB01081209

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK25

Matrix: (soil/water) WATER Lab Sample ID: 803440

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803440

Level: (low/med) LOW Date Received: 08/13/09

% Moisture: not dec. _____ Date Analyzed: 08/14/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW
11/10/09

ENVIRONMENTAL
Data Services, Inc.

EXPLOSIVES

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK26

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW15-1-YE-0809	803616	Water
2	YBKG-GW15-3-CC-0809	803618	Water
3	YBKG-GW15P-3-CC-0809	803620	Water
4	YBKG-GW14-1-YE-0809	803622	Water
5	YBKG-GW14P-1-YE-0809	803624	Water
6	YBKG-GW15-2-YE-0809	803267	Water
7	YBKG-GW14-3-CC-0809	803701	Water
8	YBKG-GW07-CC-0809	803703	Water
9	YBKG-GW14-2-YE-0809	803705	Water
10	YBKG-FB-081309	803708	Water
11	YBKG-GW07A-CC-0809	803709	Water
12	YBKG-GW01-CC-0809	803711	Water
13	YBKG-GW01P-CC-0809	803713	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	None - ND	-	-	-	-
YBKG-EB01-080309	None - ND	-	-	-	-
YBKG-FB-081309	None - ND	-	-	-	-
YBKG-FB01-081709	None - ND	-	-	-	-

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKG-GW15-3-CC-0809 ug/L	YBKG-GW15P-3-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound	YBKG-GW14-1-YE-0809 ug/L	YBKG-GW14P-1-YE-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound	YBKG-GW01-CC-0809 ug/L	YBKG-GW01P-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - EDS sample ID #11 exhibited two high %D values greater than 25% and were qualified estimated (J) by the reviewer.

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R241

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

lw
11/11/09

2

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R251

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

NW
11/11/09

3

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15P-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R261

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

MW 11/11/09

4

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R271

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

LW 11/11/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 5

GW14P-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R281

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

lw 1/11/09

6

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R421

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

FORM I EXPLOSIVES

lw
11/11/09

7

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R431

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

RW
11/11/09

8

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R441

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

RW 11/11/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R451

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

lw 11/11/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R461

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

LW
11/11/09

11

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R471

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
2691-41-0	HMX	0.25	U	
121-82-4	RDX	0.45	J	2C
99-35-4	1,3,5-Trinitrobenzene	0.25	U	
99-65-0	1,3-Dinitrobenzene	0.25	U	
98-95-3	Nitrobenzene	0.25	U	
479-45-8	Tetryl	0.25	U	
118-96-7	2,4,6-Trinitrotoluene	0.25	U	
19406-51-0	4-Amino-2,6-dinitrotoluene	0.31	J	2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U	
606-20-2	2,6-Dinitrotoluene	0.25	U	
121-14-2	2,4-Dinitrotoluene	0.25	U	
88-72-2	2-Nitrotoluene	0.25	U	
99-99-0	4-Nitrotoluene	0.25	U	
99-08-1	3-Nitrotoluene	0.25	U	

FORM I EXPLOSIVES

lw
11/11/09

12

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 24AUG091346-R331

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/25/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

aw
11/11/09

13

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01P-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 17AUG091333-R491

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/17/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/18/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

MW
11/11/09

ENVIRONMENTAL
Data Services, Inc.

METALS & CYANIDE
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK26

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW15-1-YE-0809	803616	Water
1F	YBKG-GW15-1-YE-0809F	803617	Water
2	YBKG-GW15-3-CC-0809	803618	Water
2F	YBKG-GW15-3-CC-0809F	803619	Water
3	YBKG-GW15P-3-CC-0809	803620	Water
3F	YBKG-GW15P-3-CC-0809F	803621	Water
4	YBKG-GW14-1-YE-0809	803622	Water
4F	YBKG-GW14-1-YE-0809F	803623	Water
5	YBKG-GW14P-1-YE-0809	803624	Water
5F	YBKG-GW14P-1-YE-0809F	803625	Water
6	YBKG-GW15-2-YE-0809	803267	Water
6F	YBKG-GW15-2-YE-0809F	803268	Water
7	YBKG-GW14-3-CC-0809	803701	Water
7F	YBKG-GW14-3-CC-0809F	803702	Water
8	YBKG-GW07-CC-0809	803703	Water
8F	YBKG-GW07-CC-0809F	803704	Water
9	YBKG-GW14-2-YE-0809	803705	Water
9F	YBKG-GW14-2-YE-0809F	803706	Water
10	YBKG-FB-081309	803708	Water
11	YBKG-GW07A-CC-0809	803709	Water
11F	YBKG-GW07A-CC-0809F	803710	Water
12	YBKG-GW01-CC-0809	803711	Water
12F	YBKG-GW01-CC-0809F	803712	Water
13	YBKG-GW01P-CC-0809	803713	Water
13MS*	YBKG-GW01P-CC-0809MS	803713MS	Water
13MSD*	YBKG-GW01P-CC-0809MSD	803713MSD	Water
13F	YBKG-GW01P-CC-0809F	803714	Water
13FMS*	YBKG-GW01P-CC-0809FMS	803714MS	Water
13FMSD*	YBKG-GW01P-CC-0809FMSD	803714MSD	Water

* - *Mercury only*

The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

Holding Times - All samples were prepared and analyzed within 14 days for cyanide, 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration except the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Antimony	0.651	3.255	B	1-3, 1F-3F, 5-9, 6F-9F, 13, 13F
Thallium	0.137	0.685	None	See EBs and FB

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	Copper	13.0	65	B	1-3, 8, 11
	Manganese	2.8	14	None	All >5X
	Mercury	0.070	0.35	None	All ND
	Thallium	0.18	0.90	B	1-9, 11, 13
	Zinc	4.7	23.5	B	1-7, 9, 13
YBKG-EB01-081009F	Calcium	558	2790	None	All >5X
	Magnesium	135	675		
	Sodium	464	2320		
	Thallium	0.18	0.90	B	1F-9F, 11F, 13F
	Zinc	4.8	24		
YBKG-FB-081309	Thallium	0.14	0.70	None	See EBs
	Lead	2.1	10.5	B	2-6, 5F, 8, 9, 11, 13F
	Zinc	2.6	13.0	None	See EBs
YBKG-EB01-080309	Antimony	0.78	3.9	B	4
	Chromium	2.0	10.0		
	Manganese	0.54	2.7	None	All >5X
	Sodium	180	900		
	Zinc	3.7	18.5	B	4
YBKG-EB01-080309F	Antimony	0.75	3.75	B	4F
	Sodium	125	625	None	All >5X
	Zinc	2.8	14.0		
YBKG-FB01-081709	Antimony	0.74	3.7	B	12, 12F
	Thallium	0.18	0.90		

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-FB01-081709 (cont.)	Lead	1.8	9.0	None	All ND
	Zinc	2.5	12.5	B	12, 12F

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike/Duplicate - The matrix spike/duplicate sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKG-GW15-3-CC-0809 ug/L	YBKG-GW15P-3-CC-0809 ug/L	RPD	Qualifier
Aluminum	4220	1720	84%	None
Arsenic	1.5	0.96	44%	None
Barium	69.7	62.6	11%	None
Beryllium	0.27	5.0 U	NC	None
Cadmium	0.28	0.18	43%	None
Calcium	126000	124000	2%	None
Chromium	10.4	8.1	25%	None
Iron	4990	2160	79%	None
Magnesium	2270	1830	21%	None
Manganese	31.9	24.6	26%	None
Sodium	5770	5730	1%	None
Nickel	4.0	3.0	29%	None
Potassium	1830	1280	35%	None
Vanadium	8.6	3.2	92%	None

Compound	YBKG-GW15-3-CC-0809F ug/L	YBKG-GW15P-3-CC-0809F ug/L	RPD	Qualifier
Aluminum	200 U	100	NC	None
Arsenic	0.91	0.88	3%	None
Barium	52.2	53.4	2%	None
Cadmium	0.16	2.0 U	NC	None
Calcium	120000	118000	2%	None
Iron	79.2	207	89%	None
Magnesium	1570	1500	5%	None
Manganese	19.5	18.7	4%	None
Potassium	1070	971	10%	None
Sodium	5690	5540	3%	None

Compound	YBKG-GW14-1-YE-0809 ug/L	YBKG-GW14P-1-YE-0809 ug/L	RPD	Qualifier
Aluminum	108	122	12%	None
Arsenic	0.93	0.85	9%	None
Barium	97.6	95.9	2%	None
Beryllium	0.27	5.0 U	NC	None
Calcium	72300	74100	2%	None
Chromium	1.5	0.90	50%	None
Copper	117	25.0 U	NC	None
Iron	255	292	14%	None
Magnesium	6930	7080	2%	None
Manganese	36.7	36.2	1%	None
Nickel	2.4	40.0 U	NC	None
Potassium	7010	7140	2%	None
Sodium	32000	32500	2%	None

Compound	YBKG-GW14-1-YE-0809F ug/L	YBKG-GW14P-1-YE-0809F ug/L	RPD	Qualifier
Arsenic	0.84	0.88	5%	None
Barium	94.7	90.3	5%	None
Cadmium	0.16	2.0 U	NC	None
Calcium	81800	71600	13%	None
Copper	3.0	25.0 U	NC	None
Lead	10.0 U	2.5	NC	None
Magnesium	7060	6900	2%	None
Manganese	26.2	17.4	40%	None
Potassium	7250	6950	4%	None
Selenium	9.1	35.0 U	NC	None
Sodium	36000	32000	12%	None

Compound	YBKG-GW01-CC-0809 ug/L	YBKG-GW01P-CC-0809 ug/L	RPD	Qualifier
Aluminum	613	238	88%	None
Arsenic	0.92	0.66	33%	None
Barium	28.6	27.5	4%	None
Cadmium	0.15	2.0 U	NC	None
Calcium	114000	97800	15%	None
Chromium	65.2	103	45%	None
Iron	2110	1140	60%	None
Magnesium	1440	1160	22%	None
Manganese	24.5	25.4	4%	None
Nickel	28.1	45.6	47%	None
Potassium	1160	908	24%	None
Sodium	8020	7980	1%	None
Vanadium	2.1	1.2	55%	None

Compound	YBKG-GW01-CC-0809F ug/L	YBKG-GW01P-CC-0809F ug/L	RPD	Qualifier
Arsenic	0.28	0.30	7%	None
Barium	23.8	20.1	17%	None
Calcium	87200	85900	2%	None

Compound	YBKG-GW01-CC-0809F ug/L	YBKG-GW01P-CC-0809F ug/L	RPD	Qualifier
Chromium	1.9	3.1	48%	None
Lead	10.0 U	1.5	NC	None
Magnesium	1060	1060	0%	None
Manganese	14.7	10.6	32%	None
Nickel	0.14 B	12.2	NC	None
Potassium	876	821	6%	None
Sodium	7740	7660	1%	None

Compound Quantitation - No discrepancies were identified.

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15-1-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803616

Level (low/med): LOW Date Received: 08/14/2009

% 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	208			P	
7440-36-0	Antimony	0.92	~~J~~	B	MS	MBL
7440-38-2	Arsenic	1.7	J		MS	
7440-39-3	Barium	35.8	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	44100			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	2.8	J		P	
7440-50-8	Copper	3.5	~~J~~	B	P	EBL
7439-89-6	Iron	305			P	
7439-95-4	Magnesium	7780			P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	18.8			P	
7440-23-5	Sodium	84200			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	9260			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	1.3	J		P	
7440-66-6	Zinc	3.6	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN LW 11/10/09

1F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15-1-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803617

Level (low/med): LOW Date Received: 08/14/2009

% 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	0.49	~~J~~	B	MS	MBL
7440-38-2	Arsenic	1.6	J		MS	
7440-39-3	Barium	39.1	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.17	J		MS	
7440-70-2	Calcium	44200			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	31.6	J		P	
7439-95-4	Magnesium	7870			P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	17.0			P	
7440-23-5	Sodium	85100			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	9360			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.1	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN DLW 11/10/09

2

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15-3-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803618

Level (low/med): LOW Date Received: 08/14/2009

% 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	4220			P	
7440-36-0	Antimony	0.56	~~J~~	B	MS	MBL
7440-38-2	Arsenic	1.5	J		MS	
7440-39-3	Barium	69.7	J		P	
7440-41-7	Beryllium	0.27	J		P	
7440-43-9	Cadmium	0.28	J		MS	
7440-70-2	Calcium	126000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	10.4			P	
7440-50-8	Copper	16.0	~~J~~	B	P	EBL
7439-89-6	Iron	4990			P	
7439-95-4	Magnesium	2270	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	31.9			P	
7440-23-5	Sodium	5770			P	
7440-02-0	Nickel	4.0	J		P	
7440-28-0	Thallium	0.15	~~J~~	B	MS	EBL
7439-92-1	Lead	6.2	~~J~~	B	P	FBL
7440-09-7	Potassium	1830	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	8.6	J		P	
7440-66-6	Zinc	18.9	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN hw 11/10/09

2F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15-3-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803619

Level (low/med): LOW Date Received: 08/14/2009

% 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	0.38	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.91	J		MS	
7440-39-3	Barium	52.2	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.16	J		MS	
7440-70-2	Calcium	120000			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	79.2	J		P	
7439-95-4	Magnesium	1570	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	19.5			P	
7440-23-5	Sodium	5690			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1070	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.4	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN AW 11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15P-3-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803620

Level (low/med): LOW Date Received: 08/14/2009

% 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	1720			P	
7440-36-0	Antimony	0.32	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.96	J		MS	
7440-39-3	Barium	62.6	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.18	J		MS	
7440-70-2	Calcium	124000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	8.1	J		P	
7440-50-8	Copper	6.0	~~J~~	B	P	EBL
7439-89-6	Iron	2160			P	
7439-95-4	Magnesium	1830	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	24.6			P	
7440-23-5	Sodium	5730			P	
7440-02-0	Nickel	3.0	J		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	3.5	~~J~~	B	P	FBL
7440-09-7	Potassium	1280	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	3.2	J		P	
7440-66-6	Zinc	12.2	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN WW 1/11/09

37

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15P-3-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803621

Level (low/med): LOW Date Received: 08/14/2009

% 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	100	J		P	
7440-36-0	Antimony	0.30	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.88	J		MS	
7440-39-3	Barium	53.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	118000			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	207			P	
7439-95-4	Magnesium	1500	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	18.7			P	
7440-23-5	Sodium	5540			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	971	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.0	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

4

EPA SAMPLE NO.

YBKG-GW14-1-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803622

Level (low/med): LOW Date Received: 08/14/2009

% 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		P	
7440-36-0	Antimony	0.28	~~J~~	B	MS	EBL
7440-38-2	Arsenic	0.93	J		MS	
7440-39-3	Barium	97.6	J		P	
7440-41-7	Beryllium	0.27	J		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	72300			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.5	~~J~~	B	P	EBL
7440-50-8	Copper	117			P	
7439-89-6	Iron	255			P	
7439-95-4	Magnesium	6930			P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	36.7			P	
7440-23-5	Sodium	32000			P	
7440-02-0	Nickel	2.4	J		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	2.6	~~J~~	B	P	EBL
7440-09-7	Potassium	7010			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	12.8	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

 NW 11/10/09

4F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW14-1-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803623

Level (low/med): LOW Date Received: 08/14/2009

% 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	0.25	~~J~~	B	MS	EBL
7440-38-2	Arsenic	0.84	J		MS	
7440-39-3	Barium	94.7	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.16	J		MS	
7440-70-2	Calcium	81800			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	200	U		P	
7439-95-4	Magnesium	7060			P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	26.2			P	
7440-23-5	Sodium	36000			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	7250			P	
7782-49-2	Selenium	9.1	J		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	20.0		B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW14P-1-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803624

Level (low/med): LOW Date Received: 08/14/2009

% 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	122	J		P	
7440-36-0	Antimony	0.25	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.85	J		MS	
7440-39-3	Barium	95.9	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	74100			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	0.90	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	292			P	
7439-95-4	Magnesium	7080			P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	36.2			P	
7440-23-5	Sodium	32500			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	3.1	~~J~~	B	P	FBL
7440-09-7	Potassium	7140			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	7.8	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

5F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW14P-1-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803625

Level (low/med): LOW Date Received: 08/14/2009

% 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	20.0	U		MS	
7440-38-2	Arsenic	0.88	J		MS	
7440-39-3	Barium	90.3	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	71600			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	200	U		P	
7439-95-4	Magnesium	6900			P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	17.4			P	
7440-23-5	Sodium	32000			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	2.5	~~J~~	B	P	FBL
7440-09-7	Potassium	6950			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.4	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

UW 11/10/09

6

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15-2-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803627

Level (low/med): LOW Date Received: 08/14/2009

% 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	0.29	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.31	J		MS	
7440-39-3	Barium	59.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.18	J		MS	
7440-70-2	Calcium	92900			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	118	J		P	
7439-95-4	Magnesium	4320	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	77.2			P	
7440-23-5	Sodium	6460			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	1.6	~~J~~	B	P	FBL
7440-09-7	Potassium	1570	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	4.1	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

MW
11/11/09

6f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW15-2-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803628

Level (low/med): LOW Date Received: 08/14/2009

% 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	0.31	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.39	J		MS	
7440-39-3	Barium	83.2	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.17	J		MS	
7440-70-2	Calcium	92100			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.3	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	234			P	
7439-95-4	Magnesium	4210	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	79.7			P	
7440-23-5	Sodium	6760			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1740	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.6	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN WN 11/10/09

7

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW14-3-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803701

Level (low/med): LOW Date Received: 08/15/2009

% 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	0.94	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.74	J		MS	
7440-39-3	Barium	63.8	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	91600			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	877			P	
7439-95-4	Magnesium	1550	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	35.4			P	
7440-23-5	Sodium	24500			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.15	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1200	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.9	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/10/09

7F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW14-3-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803702

Level (low/med): LOW Date Received: 08/15/2009

% 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	0.47	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.56	J		MS	
7440-39-3	Barium	60.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	90600			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	468			P	
7439-95-4	Magnesium	1600	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	33.9			P	
7440-23-5	Sodium	24200			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1230	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.8	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW07-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803703

Level (low/med): LOW Date Received: 08/15/2009

% 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	8140			P	
7440-36-0	Antimony	0.62	~~J~~	B	MS	MBL
7440-38-2	Arsenic	8.9			MS	
7440-39-3	Barium	59.0	J		P	
7440-41-7	Beryllium	0.57	J		P	
7440-43-9	Cadmium	0.28	J		MS	
7440-70-2	Calcium	175000			P	
7440-48-4	Cobalt	2.6	J		P	
7440-47-3	Chromium	35.1			P	
7440-50-8	Copper	3.4	~~J~~	B	P	EBL
7439-89-6	Iron	20100			P	
7439-95-4	Magnesium	4180	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	104			P	
7440-23-5	Sodium	5720			P	
7440-02-0	Nickel	9.3	J		P	
7440-28-0	Thallium	0.23	~~J~~	B	MS	EBL
7439-92-1	Lead	6.9	~~J~~	B	P	FBL
7440-09-7	Potassium	3100	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	32.4	J		P	
7440-66-6	Zinc	37.2			P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: light yellow Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/10/09

8F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW07-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803704

Level (low/med): LOW Date Received: 08/15/2009

% 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	86.8	J		P	
7440-36-0	Antimony	0.33	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.49	J		MS	
7440-39-3	Barium	29.2	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	123000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.2	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	334			P	
7439-95-4	Magnesium	2200	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	6.4	J		P	
7440-23-5	Sodium	5540			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.15	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	951	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	6.3	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/14/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW14-2-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803705

Level (low/med): LOW Date Received: 08/15/2009

% 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	407			P	
7440-36-0	Antimony	0.37	~~J~~	B	MS	MBL
7440-38-2	Arsenic	1.4	J		MS	
7440-39-3	Barium	103	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.17	J		MS	
7440-70-2	Calcium	94800			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	8.6	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	1380			P	
7439-95-4	Magnesium	2000	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	29.1			P	
7440-23-5	Sodium	14600			P	
7440-02-0	Nickel	4.2	J		P	
7440-28-0	Thallium	0.15	~~J~~	B	MS	EBL
7439-92-1	Lead	3.4	~~J~~	B	P	FBL
7440-09-7	Potassium	1970	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	1.5	J		P	
7440-66-6	Zinc	6.8	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

MW
11/10/09

9F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW14-2-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803706

Level (low/med): LOW Date Received: 08/15/2009

% 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	0.49	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.71	J		MS	
7440-39-3	Barium	97.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	93800			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	163	J		P	
7439-95-4	Magnesium	1890	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	19.6			P	
7440-23-5	Sodium	15300			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1880	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.5	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN LW 11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-FB-081309

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803708

Level (low/med): LOW Date Received: 08/15/2009

% 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	20.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	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	200	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
7440-28-0	Thallium	0.14	J		MS
7439-92-1	Lead	2.1	J		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	2.6	J		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

KW
11/10/09

11

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW07A-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803709

Level (low/med): LOW Date Received: 08/15/2009

% 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	247			P	
7440-36-0	Antimony	18.8	J		MS	
7440-38-2	Arsenic	0.33	J		MS	
7440-39-3	Barium	231			P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.28	J		MS	
7440-70-2	Calcium	117000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.9	J		P	
7440-50-8	Copper	40.2		B	P	EBL
7439-89-6	Iron	1130			P	
7439-95-4	Magnesium	3240	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	36.3			P	
7440-23-5	Sodium	23300			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	3.2	~~J~~	B	P	FBL
7440-09-7	Potassium	19000			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	34.0			P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/10/09

11F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW07A-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803710

Level (low/med): LOW Date Received: 08/15/2009

% 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	9.7	J		MS	
7440-38-2	Arsenic	0.28	J		MS	
7440-39-3	Barium	101	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.15	J		MS	
7440-70-2	Calcium	85600			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	260			P	
7439-95-4	Magnesium	2930	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	29.9			P	
7440-23-5	Sodium	22500			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	17800			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	7.2	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

HW 11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW01-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803711

Level (low/med): LOW Date Received: 08/15/2009

% 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	613			P	
7440-36-0	Antimony	0.44	~~J~~	B	MS	FBL
7440-38-2	Arsenic	0.92	J		MS	
7440-39-3	Barium	28.6	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.15	J		MS	
7440-70-2	Calcium	114000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	65.2			P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	2110			P	
7439-95-4	Magnesium	1440	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	24.5			P	
7440-23-5	Sodium	8020			P	
7440-02-0	Nickel	28.1	J		P	
7440-28-0	Thallium	0.15	~~J~~	B	MS	FBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1160	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	2.1	J		P	
7440-66-6	Zinc	11.4	~~J~~	B	P	FBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

WW
11/10/09

12f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW01-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803712

Level (low/med): LOW Date Received: 08/15/2009

% 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	0.45	~~J~~	B	MS	FBL
7440-38-2	Arsenic	0.28	J		MS	
7440-39-3	Barium	23.8	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	87200			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	200	U		P	
7439-95-4	Magnesium	1060	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	14.7	J		P	
7440-23-5	Sodium	7740			P	
7440-02-0	Nickel	13.8	J		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	FBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	876	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.7	~~J~~	B	P	FBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

MW
11/10/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW01P-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): WATER Lab Sample ID: 803713

Level (low/med): LOW Date Received: 08/15/2009

% 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	238			P	
7440-36-0	Antimony	0.35	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.66	J		MS	
7440-39-3	Barium	27.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	97800			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	103			P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	1140			P	
7439-95-4	Magnesium	1160	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	25.4			P	
7440-23-5	Sodium	7980			P	
7440-02-0	Nickel	45.6			P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	908	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	1.2	J		P	
7440-66-6	Zinc	3.6	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN KW 11/10/09

13F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW01P-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK26

Matrix (soil/water): FILTRATE Lab Sample ID: 803714

Level (low/med): LOW Date Received: 08/15/2009

% 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	0.32	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.30	J		MS	
7440-39-3	Barium	20.1	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	85900			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	200	U		P	
7439-95-4	Magnesium	1060	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	10.6	J		P	
7440-23-5	Sodium	7660			P	
7440-02-0	Nickel	12.2	J		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	EBL
7439-92-1	Lead	1.5	~~J~~	B	P	FBL
7440-09-7	Potassium	821	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.4	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN WO 11/10/09

ENVIRONMENTAL
Data Services, Inc.

PESTICIDES/PCBs
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK26

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW15-1-YE-0809	803616	Water
2	YBKG-GW15-3-CC-0809	803618	Water
3	YBKG-GW15P-3-CC-0809	803620	Water
4	YBKG-GW14-1-YE-0809	803622	Water
5	YBKG-GW14P-1-YE-0809	803624	Water
6	YBKG-GW15-2-YE-0809	803267	Water
7	YBKG-GW14-3-CC-0809	803701	Water
8	YBKG-GW07-CC-0809	803703	Water
9	YBKG-GW14-2-YE-0809	803705	Water
10	YBKG-FB-081309	803708	Water
11	YBKG-GW07A-CC-0809	803709	Water
12	YBKG-GW01-CC-0809	803711	Water
13	YBKG-GW01P-CC-0809	803713	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Instrument performance - All 4,4'-DDT/endrin % breakdown, resolution check mixture and PEMs were within criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
9 Pest	TCX1/TCX2/DCB1/DCB2	Ok/Ok/38%/40%	J/UJ

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	None - ND	-	-	-	-
YBKG-EB01-080309	None - ND	-	-	-	-
YBKG-FB-081309	None - ND	-	-	-	-
YBKG-FB01-081709	None - ND	-	-	-	-

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKG-GW15-3-CC-0809 ug/L	YBKG-GW15P-3-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound	YBKG-GW14-1-YE-0809 ug/L	YBKG-GW14P-1-YE-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound	YBKG-GW01-CC-0809 ug/L	YBKG-GW01P-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - Several samples exhibited results with high %D values between columns and have been flagged (P) by the laboratory and further qualified (J).

1

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW151YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 935.0 (g/mL) ML Lab File ID: 22AUG091141-R061

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.053	U
319-85-7	beta-BHC	0.053	U
319-86-8	delta-BHC	0.053	U
58-89-9	gamma-BHC (Lindane)	0.053	U
76-44-8	Heptachlor	0.053	U
309-00-2	Aldrin	0.053	U
1024-57-3	Heptachlor epoxide	0.053	U
959-98-8	Endosulfan I	0.053	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.53	U
53494-70-5	Endrin ketone	0.11	U
7421-93-4	Endrin aldehyde	0.11	U
57-74-9	Chlordane	0.53	U
8001-35-2	Toxaphene	5.3	U
5103-74-2	gamma-Chlordane	0.053	U
5103-71-9	alpha-Chlordane	0.053	U

LW
11/11/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW153CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 22AUG091141-R071

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
76-44-8	Heptachlor	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
60-57-1	Dieldrin	0.098	U
72-55-9	4,4'-DDE	0.098	U
72-20-8	Endrin	0.098	U
33213-65-9	Endosulfan II	0.098	U
72-54-8	4,4'-DDD	0.098	U
1031-07-8	Endosulfan sulfate	0.098	U
50-29-3	4,4'-DDT	0.098	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin ketone	0.098	U
7421-93-4	Endrin aldehyde	0.098	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	4.9	U
5103-74-2	gamma-Chlordane	0.049	U
5103-71-9	alpha-Chlordane	0.049	U

NW
1/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15P3CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 22AUG091141-R081

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
76-44-8	Heptachlor	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
60-57-1	Dieldrin	0.098	U
72-55-9	4,4'-DDE	0.098	U
72-20-8	Endrin	0.098	U
33213-65-9	Endosulfan II	0.098	U
72-54-8	4,4'-DDD	0.098	U
1031-07-8	Endosulfan sulfate	0.098	U
50-29-3	4,4'-DDT	0.098	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin ketone	0.098	U
7421-93-4	Endrin aldehyde	0.098	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	4.9	U
5103-74-2	gamma-Chlordane	0.049	U
5103-71-9	alpha-Chlordane	0.049	U

NW
11/11/09

4

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW141YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 930.0 (g/mL) ML Lab File ID: 22AUG091141-R091

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.054	U
319-85-7	beta-BHC	0.054	U
319-86-8	delta-BHC	0.054	U
58-89-9	gamma-BHC (Lindane)	0.054	U
76-44-8	Heptachlor	0.054	U
309-00-2	Aldrin	0.054	U
1024-57-3	Heptachlor epoxide	0.054	U
959-98-8	Endosulfan I	0.054	U
60-57-1	Dieldrin	0.11	U
72-55-9	4,4'-DDE	0.11	U
72-20-8	Endrin	0.11	U
33213-65-9	Endosulfan II	0.11	U
72-54-8	4,4'-DDD	0.11	U
1031-07-8	Endosulfan sulfate	0.11	U
50-29-3	4,4'-DDT	0.11	U
72-43-5	Methoxychlor	0.54	U
53494-70-5	Endrin ketone	0.11	U
7421-93-4	Endrin aldehyde	0.11	U
57-74-9	Chlordane	0.54	U
8001-35-2	Toxaphene	5.4	U
5103-74-2	gamma-Chlordane	0.054	U
5103-71-9	alpha-Chlordane	0.054	U

hw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14P1YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 960.0 (g/mL) ML Lab File ID: 22AUG091141-R101

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.52	U
8001-35-2	Toxaphene	5.2	U
5103-74-2	gamma-Chlordane	0.052	U
5103-71-9	alpha-Chlordane	0.052	U

NW
11/11/09

6

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW152YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 22AUG091141-R111

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.095	U
72-55-9	4,4'-DDE	0.095	U
72-20-8	Endrin	0.095	U
33213-65-9	Endosulfan II	0.095	U
72-54-8	4,4'-DDD	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
50-29-3	4,4'-DDT	0.095	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

NW
11/11/09

7

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW143CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 22AUG091141-R121

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.051	U
319-85-7	beta-BHC	0.051	U
319-86-8	delta-BHC	0.051	U
58-89-9	gamma-BHC (Lindane)	0.051	U
76-44-8	Heptachlor	0.051	U
309-00-2	Aldrin	0.051	U
1024-57-3	Heptachlor epoxide	0.051	U
959-98-8	Endosulfan I	0.051	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.51	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.51	U
8001-35-2	Toxaphene	5.1	U
5103-74-2	gamma-Chlordane	0.051	U
5103-71-9	alpha-Chlordane	0.051	U

lw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 955.0 (g/mL) ML Lab File ID: 22AUG091141-R131

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.52	U
8001-35-2	Toxaphene	5.2	U
5103-74-2	gamma-Chlordane	0.052	U
5103-71-9	alpha-Chlordane	0.052	U

aw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW142YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 22AUG091141-R161

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.049	U UJ	SSL
319-85-7	beta-BHC	0.049	U	
319-86-8	delta-BHC	0.049	U	
58-89-9	gamma-BHC (Lindane)	0.049	U	
76-44-8	Heptachlor	0.049	U	
309-00-2	Aldrin	0.049	U	
1024-57-3	Heptachlor epoxide	0.049	U	
959-98-8	Endosulfan I	0.049	U	
60-57-1	Dieldrin	0.098	U	
72-55-9	4,4'-DDE	0.098	U	
72-20-8	Endrin	0.098	U	
33213-65-9	Endosulfan II	0.098	U	
72-54-8	4,4'-DDD	0.098	U	
1031-07-8	Endosulfan sulfate	0.098	U	
50-29-3	4,4'-DDT	0.098	U	
72-43-5	Methoxychlor	0.49	U	
53494-70-5	Endrin ketone	0.098	U	
7421-93-4	Endrin aldehyde	0.098	U	
57-74-9	Chlordane	0.49	U	
8001-35-2	Toxaphene	4.9	U	
5103-74-2	gamma-Chlordane	0.049	U	
5103-71-9	alpha-Chlordane	0.049	U	

lw 11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 22AUG091141-R171

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	U
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

lw
11/11/09

11

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 22AUG091141-R181

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	U
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.013	~~JP~~ J 2C

FORM I OTHER

MW
11/11/09

12

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 22AUG091141-R191

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.095	U
72-55-9	4,4'-DDE	0.095	U
72-20-8	Endrin	0.095	U
33213-65-9	Endosulfan II	0.095	U
72-54-8	4,4'-DDD	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
50-29-3	4,4'-DDT	0.095	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

FORM I OTHER

OW
11/11/09

13

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01PCC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 22AUG091141-R201

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
76-44-8	Heptachlor	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
60-57-1	Dieldrin	0.098	U
72-55-9	4,4'-DDE	0.098	U
72-20-8	Endrin	0.098	U
33213-65-9	Endosulfan II	0.098	U
72-54-8	4,4'-DDD	0.098	U
1031-07-8	Endosulfan sulfate	0.098	U
50-29-3	4,4'-DDT	0.098	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin ketone	0.098	U
7421-93-4	Endrin aldehyde	0.098	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	4.9	U
5103-74-2	gamma-Chlordane	0.049	U
5103-71-9	alpha-Chlordane	0.049	U

FORM I OTHER

lw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW151YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 935.0 (g/mL) ML Lab File ID: 25AUG091731-R031

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	0.53	U
11096-82-5	Aroclor-1260	0.53	U

FORM I OTHER

WW
11/11/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW153CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 25AUG091731-R041

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

FORM I OTHER

NW
11/11/09

3

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW15P3CC080

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 25AUG091731-R051

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

FORM I OTHER

MW
11/11/09

4

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW141YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 930.0 (g/mL) ML Lab File ID: 25AUG091731-R061

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.54	U
11104-28-2	Aroclor-1221	0.54	U
11141-16-5	Aroclor-1232	0.54	U
53469-21-9	Aroclor-1242	0.54	U
12672-29-6	Aroclor-1248	0.54	U
11097-69-1	Aroclor-1254	0.54	U
11096-82-5	Aroclor-1260	0.54	U

FORM I OTHER

MW
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW14P1YE080

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 960.0 (g/mL) ML Lab File ID: 25AUG091731-R071

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	0.52	U
11096-82-5	Aroclor-1260	0.52	U

NW
11/11/09

6

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW152YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 25AUG091731-R081

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/14/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

FORM I OTHER

hw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW143CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 25AUG091731-R091

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.51	U
11104-28-2	Aroclor-1221	0.51	U
11141-16-5	Aroclor-1232	0.51	U
53469-21-9	Aroclor-1242	0.51	U
12672-29-6	Aroclor-1248	0.51	U
11097-69-1	Aroclor-1254	0.51	U
11096-82-5	Aroclor-1260	0.51	U

KW
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW07CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 955.0 (g/mL) ML Lab File ID: 25AUG091731-R101

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	0.52	U
11096-82-5	Aroclor-1260	0.52	U

FORM I OTHER

NW
11/11/09

9

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW142YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 25AUG091731-R121

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

FORM I OTHER

MW
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGFB081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 25AUG091731-R131

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U

FORM I OTHER

11/11/09

11

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW07ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 25AUG091731-R141

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U

FORM I OTHER

gcw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW01CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 25AUG091731-R151

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

FORM I OTHER

MW
11/11/09

13

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW01PCC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 25AUG091731-R161

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/15/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

FORM I OTHER

11/11/09

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK26

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW15-1-YE-0809	803616	Water
2	YBKG-GW15-3-CC-0809	803618	Water
3	YBKG-GW15P-3-CC-0809	803620	Water
4	YBKG-GW14-1-YE-0809	803622	Water
5	YBKG-GW14P-1-YE-0809	803624	Water
6	YBKG-GW15-2-YE-0809	803267	Water
7	YBKG-GW14-3-CC-0809	803701	Water
8	YBKG-GW07-CC-0809	803703	Water
9	YBKG-GW14-2-YE-0809	803705	Water
10	YBKG-FB-081309	803708	Water
11	YBKG-GW07A-CC-0809	803709	Water
12	YBKG-GW01-CC-0809	803711	Water
13	YBKG-GW01P-CC-0809	803713	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/26/09	Pyrene	34.0%	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
5	1,2-dichlorobenzene-d4	54%	None for one out per fraction
	2,4,6-tribromophenol	47%	

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	Naphthalene	0.64	3.2	None	All ND
	Caprolactam	1.1	5.5		
	Diethylphthalate	1.1	5.5		
	di-n-butylphthalate	0.89	4.45		
	Butlybenzylphthalate	1.1	5.5		
YBKG-EB01-080309	None - ND	-	-	-	-
YBKG-FB-081309	None - ND	-	-	-	-
YBKG-FB01-081709	None - ND	-	-	-	-

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKG-GW15-3-CC-0809 ug/L	YBKG-GW15P-3-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound	YBKG-GW14-1-YE-0809 ug/L	YBKG-GW14P-1-YE-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound	YBKG-GW01-CC-0809 ug/L	YBKG-GW01P-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - No discrepancies were identified.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 803616

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.8	U
108-95-2	Phenol	9.8	U
111-44-4	bis(2-Chloroethyl)ether	9.8	U
95-57-8	2-Chlorophenol	9.8	U
95-48-7	2-Methylphenol	9.8	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.8	U
98-86-2	Acetophenone	9.8	U
106-44-5	4-Methylphenol	9.8	U
621-64-7	N-Nitroso-di-n-propylamine	9.8	U
67-72-1	Hexachloroethane	9.8	U
98-95-3	Nitrobenzene	9.8	U
78-59-1	Isophorone	9.8	U
88-75-5	2-Nitrophenol	9.8	U
105-67-9	2,4-Dimethylphenol	9.8	U
111-91-1	bis(2-Chloroethoxy)methane	9.8	U
120-83-2	2,4-Dichlorophenol	9.8	U
91-20-3	Naphthalene	9.8	U
106-47-8	4-Chloroaniline	9.8	U
87-68-3	Hexachlorobutadiene	9.8	U
105-60-2	Caprolactam	9.8	U
59-50-7	4-Chloro-3-Methylphenol	9.8	U
91-57-6	2-Methylnaphthalene	9.8	U
77-47-4	Hexachlorocyclopentadiene	9.8	U
88-06-2	2,4,6-Trichlorophenol	9.8	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.8	U
92-52-4	1,1'-Biphenyl	9.8	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.8	U
208-96-8	Acenaphthylene	9.8	U
606-20-2	2,6-Dinitrotoluene	9.8	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.8	U

FORM I SV

NW
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 803616

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.8	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.8	U
86-73-7	Fluorene	9.8	U
84-66-2	Diethylphthalate	9.8	U
7005-72-3	4-Chlorophenyl-phenylether	9.8	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.8	U
101-55-3	4-Bromophenyl-phenylether	9.8	U
118-74-1	Hexachlorobenzene	9.8	U
1912-24-9	Atrazine	9.8	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.8	U
120-12-7	Anthracene	9.8	U
86-74-8	Carbazole	9.8	U
84-74-2	Di-n-butylphthalate	9.8	U
206-44-0	Fluoranthene	9.8	U
129-00-0	Pyrene	9.8	U
85-68-7	Butylbenzylphthalate	9.8	U
56-55-3	Benzo(a)anthracene	9.8	U
91-94-1	3,3'-Dichlorobenzidine	9.8	U
218-01-9	Chrysene	9.8	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.8	U
117-84-0	Di-n-octylphthalate	9.8	U
205-99-2	Benzo(b)fluoranthene	9.8	U
207-08-9	Benzo(k)fluoranthene	9.8	U
50-32-8	Benzo(a)pyrene	9.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.8	U
53-70-3	Dibenz(a,h)anthracene	9.8	U
191-24-2	Benzo(g,h,i)perylene	9.8	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW15-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 803616

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 25154-52-3	PHENOL, NONYL-	12.73	35	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

NW
11/11/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 803618

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.5	U
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
98-86-2	Acetophenone	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitroso-di-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	9.5	U
87-68-3	Hexachlorobutadiene	9.5	U
105-60-2	Caprolactam	9.5	U
59-50-7	4-Chloro-3-Methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.5	U
92-52-4	1,1'-Biphenyl	9.5	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.5	U
208-96-8	Acenaphthylene	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.5	U

FORM I SV

NW
11/11/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 803618

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.5	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.5	U
86-73-7	Fluorene	9.5	U
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl-phenylether	9.5	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.5	U
101-55-3	4-Bromophenyl-phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
1912-24-9	Atrazine	9.5	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butylphthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
56-55-3	Benzo(a)anthracene	9.5	U
91-94-1	3,3'-Dichlorobenzidine	9.5	U
218-01-9	Chrysene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
117-84-0	Di-n-octylphthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/11/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW15-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 803618

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 25154-52-3	PHENOL, NONYL-	12.72	12	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

NW
11/11/09

3

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15P-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803620

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

WD
11/11/09

3

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15P-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803620

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.4	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.4	U
86-73-7	Fluorene	9.4	U
84-66-2	Diethylphthalate	9.4	U
7005-72-3	4-Chlorophenyl-phenylether	9.4	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.4	U
101-55-3	4-Bromophenyl-phenylether	9.4	U
118-74-1	Hexachlorobenzene	9.4	U
1912-24-9	Atrazine	9.4	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.4	U
120-12-7	Anthracene	9.4	U
86-74-8	Carbazole	9.4	U
84-74-2	Di-n-butylphthalate	9.4	U
206-44-0	Fluoranthene	9.4	U
129-00-0	Pyrene	9.4	U
85-68-7	Butylbenzylphthalate	9.4	U
56-55-3	Benzo(a)anthracene	9.4	U
91-94-1	3,3'-Dichlorobenzidine	9.4	U
218-01-9	Chrysene	9.4	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U
117-84-0	Di-n-octylphthalate	9.4	U
205-99-2	Benzo(b)fluoranthene	9.4	U
207-08-9	Benzo(k)fluoranthene	9.4	U
50-32-8	Benzo(a)pyrene	9.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U
53-70-3	Dibenz(a,h)anthracene	9.4	U
191-24-2	Benzo(g,h,i)perylene	9.4	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

HW
11/11/09

3

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW15P-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803620

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.68	2.5	~~NJAB~~ R
2. 25154-52-3	PHENOL, NONYL-	12.73	6.4	~~NJ~~ NJ
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

NW 11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 945.0 (g/mL) ML Lab File ID: 803622

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	11	U
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
98-86-2	Acetophenone	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
105-60-2	Caprolactam	11	U
59-50-7	4-Chloro-3-Methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	11	U
92-52-4	1,1'-Biphenyl	11	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	11	U

FORM I SV

WW
11/11/09

4

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 945.0 (g/mL) ML Lab File ID: 803622

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	11	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	11	U
86-73-7	Fluorene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
1912-24-9	Atrazine	11	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
56-55-3	Benzo(a)anthracene	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW
11/11/09

4

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW14-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 945.0 (g/mL) ML Lab File ID: 803622

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/23/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.68	3.1	~~NJAB~~ R
2. 25154-52-3	PHENOL, NONYL-	12.72	38	~~NJ~~ NJ
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

KW
11/11/09

5

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14P-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 990.0 (g/mL) ML Lab File ID: 803624

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

FORM I SV

LW 11/11/09

5

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14P-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 990.0 (g/mL) ML Lab File ID: 803624

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	25	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

WW
11/4/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW14P-1-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 990.0 (g/mL) ML Lab File ID: 803624

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.67	4.1	~~NJAB~~ R
2. 25154-52-3	PHENOL, NONYL-	12.71	33	~~NJ~~ NJ
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

LW
11/11/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 803627

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	11	U
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
98-86-2	Acetophenone	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
105-60-2	Caprolactam	11	U
59-50-7	4-Chloro-3-Methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	11	U
92-52-4	1,1'-Biphenyl	11	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	11	U

FORM I SV

NW
11/11/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW15-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 803627

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	11	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	11	U
86-73-7	Fluorene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
1912-24-9	Atrazine	11	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
56-55-3	Benzo(a)anthracene	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octylphthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

LW 11/11/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW15-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 803627

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/15/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.66	2.9	~~NJAB~~ R
2. 25154-52-3	PHENOL, NONYL-	12.71	15	~~NJ~~ NJ
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

LW
11/11/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 803701I2

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.8	U
108-95-2	Phenol	9.8	U
111-44-4	bis(2-Chloroethyl)ether	9.8	U
95-57-8	2-Chlorophenol	9.8	U
95-48-7	2-Methylphenol	9.8	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.8	U
98-86-2	Acetophenone	9.8	U
106-44-5	4-Methylphenol	9.8	U
621-64-7	N-Nitroso-di-n-propylamine	9.8	U
67-72-1	Hexachloroethane	9.8	U
98-95-3	Nitrobenzene	9.8	U
78-59-1	Isophorone	9.8	U
88-75-5	2-Nitrophenol	9.8	U
105-67-9	2,4-Dimethylphenol	9.8	U
111-91-1	bis(2-Chloroethoxy)methane	9.8	U
120-83-2	2,4-Dichlorophenol	9.8	U
91-20-3	Naphthalene	9.8	U
106-47-8	4-Chloroaniline	9.8	U
87-68-3	Hexachlorobutadiene	9.8	U
105-60-2	Caprolactam	9.8	U
59-50-7	4-Chloro-3-Methylphenol	9.8	U
91-57-6	2-Methylnaphthalene	9.8	U
77-47-4	Hexachlorocyclopentadiene	9.8	U
88-06-2	2,4,6-Trichlorophenol	9.8	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.8	U
92-52-4	1,1'-Biphenyl	9.8	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.8	U
208-96-8	Acenaphthylene	9.8	U
606-20-2	2,6-Dinitrotoluene	9.8	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.8	U

FORM I SV

MW 11/11/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 803701I2

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.8	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.8	U
86-73-7	Fluorene	9.8	U
84-66-2	Diethylphthalate	9.8	U
7005-72-3	4-Chlorophenyl-phenylether	9.8	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.8	U
101-55-3	4-Bromophenyl-phenylether	9.8	U
118-74-1	Hexachlorobenzene	9.8	U
1912-24-9	Atrazine	9.8	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.8	U
120-12-7	Anthracene	9.8	U
86-74-8	Carbazole	9.8	U
84-74-2	Di-n-butylphthalate	9.8	U
206-44-0	Fluoranthene	9.8	U
129-00-0	Pyrene	9.8	U
85-68-7	Butylbenzylphthalate	9.8	U
56-55-3	Benzo(a)anthracene	9.8	U
91-94-1	3,3'-Dichlorobenzidine	9.8	U
218-01-9	Chrysene	9.8	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.8	U
117-84-0	Di-n-octylphthalate	9.8	U
205-99-2	Benzo(b)fluoranthene	9.8	U
207-08-9	Benzo(k)fluoranthene	9.8	U
50-32-8	Benzo(a)pyrene	9.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.8	U
53-70-3	Dibenz(a,h)anthracene	9.8	U
191-24-2	Benzo(g,h,i)perylene	9.8	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/11/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW14-3-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 803701I2

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 25154-52-3	PHENOL, NONYL-	12.71	33	~~NJ~~	NJ
2.	UNKNOWN	13.27	2.3	~~J~~	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

KW
1/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 803703

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

FORM I SV

MW
11/11/09

8

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 803703

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	25	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW
11/11/09

8

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW07-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 803703

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 25154-52-3	PHENOL, NONYL-	12.71	8.4	~~NO~~ NJ
2.	UNKNOWN	13.27	2.1	~~J~~ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

MW
11/11/09

9

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 955.0 (g/mL) ML Lab File ID: 803705

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

FORM I SV

LW
11/11/09

9

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW14-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 955.0 (g/mL) ML Lab File ID: 803705

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

LW
11/11/09

9

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW14-2-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 955.0 (g/mL) ML Lab File ID: 803705

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 25154-52-3	PHENOL, NONYL-	12.71	26	~~NJ~~	NJ
2.	UNKNOWN	21.25	2.7	~~J~~	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

MW
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB-081309

10

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 1015 (g/mL) ML Lab File ID: 803708

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.9	U
108-95-2	Phenol	9.9	U
111-44-4	bis(2-Chloroethyl)ether	9.9	U
95-57-8	2-Chlorophenol	9.9	U
95-48-7	2-Methylphenol	9.9	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.9	U
98-86-2	Acetophenone	9.9	U
106-44-5	4-Methylphenol	9.9	U
621-64-7	N-Nitroso-di-n-propylamine	9.9	U
67-72-1	Hexachloroethane	9.9	U
98-95-3	Nitrobenzene	9.9	U
78-59-1	Isophorone	9.9	U
88-75-5	2-Nitrophenol	9.9	U
105-67-9	2,4-Dimethylphenol	9.9	U
111-91-1	bis(2-Chloroethoxy)methane	9.9	U
120-83-2	2,4-Dichlorophenol	9.9	U
91-20-3	Naphthalene	9.9	U
106-47-8	4-Chloroaniline	9.9	U
87-68-3	Hexachlorobutadiene	9.9	U
105-60-2	Caprolactam	9.9	U
59-50-7	4-Chloro-3-Methylphenol	9.9	U
91-57-6	2-Methylnaphthalene	9.9	U
77-47-4	Hexachlorocyclopentadiene	9.9	U
88-06-2	2,4,6-Trichlorophenol	9.9	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	9.9	U
92-52-4	1,1'-Biphenyl	9.9	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	9.9	U
208-96-8	Acenaphthylene	9.9	U
606-20-2	2,6-Dinitrotoluene	9.9	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	9.9	U

FORM I SV

MW
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 10

FB-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 1015 (g/mL) ML Lab File ID: 803708

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	9.9	U
100-02-7	4-Nitrophenol	25	U
121-14-2	2,4-Dinitrotoluene	9.9	U
86-73-7	Fluorene	9.9	U
84-66-2	Diethylphthalate	9.9	U
7005-72-3	4-Chlorophenyl-phenylether	9.9	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-nitrosodiphenylamine (1)	9.9	U
101-55-3	4-Bromophenyl-phenylether	9.9	U
118-74-1	Hexachlorobenzene	9.9	U
1912-24-9	Atrazine	9.9	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	9.9	U
120-12-7	Anthracene	9.9	U
86-74-8	Carbazole	9.9	U
84-74-2	Di-n-butylphthalate	9.9	U
206-44-0	Fluoranthene	9.9	U
129-00-0	Pyrene	9.9	U
85-68-7	Butylbenzylphthalate	9.9	U
56-55-3	Benzo(a)anthracene	9.9	U
91-94-1	3,3'-Dichlorobenzidine	9.9	U
218-01-9	Chrysene	9.9	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.9	U
117-84-0	Di-n-octylphthalate	9.9	U
205-99-2	Benzo(b)fluoranthene	9.9	U
207-08-9	Benzo(k)fluoranthene	9.9	U
50-32-8	Benzo(a)pyrene	9.9	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.9	U
53-70-3	Dibenz(a,h)anthracene	9.9	U
191-24-2	Benzo(g,h,i)perylene	9.9	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

LW
11/11/09

10

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

FB-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 1015 (g/mL) ML Lab File ID: 803708

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	13.27	2.9	~~J~~ J
2.	UNKNOWN	13.88	4.1	~~J~~ J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

LW
11/11/09

11

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803709

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

MW
11/4/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW07A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803709

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.4	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.4	U
86-73-7	Fluorene	9.4	U
84-66-2	Diethylphthalate	9.4	U
7005-72-3	4-Chlorophenyl-phenylether	9.4	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.4	U
101-55-3	4-Bromophenyl-phenylether	9.4	U
118-74-1	Hexachlorobenzene	9.4	U
1912-24-9	Atrazine	9.4	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.4	U
120-12-7	Anthracene	9.4	U
86-74-8	Carbazole	9.4	U
84-74-2	Di-n-butylphthalate	9.4	U
206-44-0	Fluoranthene	9.4	U
129-00-0	Pyrene	9.4	U
85-68-7	Butylbenzylphthalate	9.4	U
56-55-3	Benzo(a)anthracene	9.4	U
91-94-1	3,3'-Dichlorobenzidine	9.4	U
218-01-9	Chrysene	9.4	U
117-81-7	bis(2-Ethylhexyl)phthalate	1.1	J
117-84-0	Di-n-octylphthalate	9.4	U
205-99-2	Benzo(b)fluoranthene	9.4	U
207-08-9	Benzo(k)fluoranthene	9.4	U
50-32-8	Benzo(a)pyrene	9.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U
53-70-3	Dibenz(a,h)anthracene	9.4	U
191-24-2	Benzo(g,h,i)perylene	9.4	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

LW 11/11/09

11

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW07A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 803709

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 134-62-3	DIETHYLTOLUAMIDE	11.43	25	~~NJ~~	NJ
2. 104-40-5	4-NONYLPHENOL	12.06	3.6	~~NJ~~	↓
3. 25154-52-3	PHENOL, NONYL-	12.44	120	~~NJ~~	↓
4.	UNKNOWN	13.27	2.2	~~J~~	J
5. 26761-40-0	1,2-BENZENEDICARBOXYLIC ACID	18.64	1.9	~~NJ~~	NJ
6. 3648-21-3	1,2-BENZENEDICARBOXYLIC ACID	20.67	16	~~NJ~~	NJ
7.	UNKNOWN	21.31	230	~~J~~	J
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

MW
11/4/09

12

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 803711

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.5	U
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
98-86-2	Acetophenone	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitroso-di-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	9.5	U
87-68-3	Hexachlorobutadiene	9.5	U
105-60-2	Caprolactam	9.5	U
59-50-7	4-Chloro-3-Methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.5	U
92-52-4	1,1'-Biphenyl	9.5	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.5	U
208-96-8	Acenaphthylene	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.5	U

FORM I SV

GW
11/11/09

12

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 803711

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.5	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.5	U
86-73-7	Fluorene	9.5	U
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl-phenylether	9.5	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.5	U
101-55-3	4-Bromophenyl-phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
1912-24-9	Atrazine	9.5	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butylphthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
56-55-3	Benzo(a)anthracene	9.5	U
91-94-1	3,3'-Dichlorobenzidine	9.5	U
218-01-9	Chrysene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
117-84-0	Di-n-octylphthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/11/09

12

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW01-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 803711

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.59	17	~~NJA~~ R
2. 25154-52-3	PHENOL, NONYL-	12.62	18	~~NJ~~ NJ
3.	UNKNOWN	13.18	2.4	~~J~~ J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

hw
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 13

GW01P-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 1035 (g/mL) ML Lab File ID: 803713

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.7	U
108-95-2	Phenol	9.7	U
111-44-4	bis(2-Chloroethyl)ether	9.7	U
95-57-8	2-Chlorophenol	9.7	U
95-48-7	2-Methylphenol	9.7	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.7	U
98-86-2	Acetophenone	9.7	U
106-44-5	4-Methylphenol	9.7	U
621-64-7	N-Nitroso-di-n-propylamine	9.7	U
67-72-1	Hexachloroethane	9.7	U
98-95-3	Nitrobenzene	9.7	U
78-59-1	Isophorone	9.7	U
88-75-5	2-Nitrophenol	9.7	U
105-67-9	2,4-Dimethylphenol	9.7	U
111-91-1	bis(2-Chloroethoxy)methane	9.7	U
120-83-2	2,4-Dichlorophenol	9.7	U
91-20-3	Naphthalene	9.7	U
106-47-8	4-Chloroaniline	9.7	U
87-68-3	Hexachlorobutadiene	9.7	U
105-60-2	Caprolactam	9.7	U
59-50-7	4-Chloro-3-Methylphenol	9.7	U
91-57-6	2-Methylnaphthalene	9.7	U
77-47-4	Hexachlorocyclopentadiene	9.7	U
88-06-2	2,4,6-Trichlorophenol	9.7	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.7	U
92-52-4	1,1'-Biphenyl	9.7	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.7	U
208-96-8	Acenaphthylene	9.7	U
606-20-2	2,6-Dinitrotoluene	9.7	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.7	U

FORM I SV

KW
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 13

GW01P-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 1035 (g/mL) ML Lab File ID: 803713

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.7	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.7	U
86-73-7	Fluorene	9.7	U
84-66-2	Diethylphthalate	9.7	U
7005-72-3	4-Chlorophenyl-phenylether	9.7	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.7	U
101-55-3	4-Bromophenyl-phenylether	9.7	U
118-74-1	Hexachlorobenzene	9.7	U
1912-24-9	Atrazine	9.7	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.7	U
120-12-7	Anthracene	9.7	U
86-74-8	Carbazole	9.7	U
84-74-2	Di-n-butylphthalate	9.7	U
206-44-0	Fluoranthene	9.7	U
129-00-0	Pyrene	9.7	U
85-68-7	Butylbenzylphthalate	9.7	U
56-55-3	Benzo(a)anthracene	9.7	U
91-94-1	3,3'-Dichlorobenzidine	9.7	U
218-01-9	Chrysene	9.7	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.7	U
117-84-0	Di-n-octylphthalate	9.7	U
205-99-2	Benzo(b)fluoranthene	9.7	U
207-08-9	Benzo(k)fluoranthene	9.7	U
50-32-8	Benzo(a)pyrene	9.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.7	U
53-70-3	Dibenz(a,h)anthracene	9.7	U
191-24-2	Benzo(g,h,i)perylene	9.7	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

RW 11/11/09

13

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

GW01P-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 1035 (g/mL) ML Lab File ID: 803713

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.59	14	~~NJA~~ R
2. 25154-52-3	PHENOL, NONYL-	12.63	10	~~NJ~~ NJ
3.	UNKNOWN	13.18	3.7	~~J~~ J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

MW 11/11/09

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK26

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW15-1-YE-0809	803616	Water
2	YBKG-GW15-3-CC-0809	803618	Water
3	YBKG-GW15P-3-CC-0809	803620	Water
4	YBKG-GW14-1-YE-0809	803622	Water
5	YBKG-GW14P-1-YE-0809	803624	Water
6	YBKG-TB01-081309	803626	Water
7	YBKG-GW15-2-YE-0809	803267	Water
8	YBKG-GW14-3-CC-0809	803701	Water
9	YBKG-GW07-CC-0809	803703	Water
10	YBKG-GW14-2-YE-0809	803705	Water
11	YBKG-TB01-081409	803707	Water
12	YBKG-FB-081309	803708	Water
13	YBKG-GW07A-CC-0809	803709	Water
14	YBKG-GW01-CC-0809	803711	Water
15	YBKG-GW01P-CC-0809	803713	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values except the following.

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
08/18/09	2-Butanone	0.016	L/R	All samples

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/17/09	2-Butanone	0.016	None	See ICAL

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
LA081909LCS	Bromomethane	140%	None	All ND

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-TB01-081309	None - ND	-	-	-	-
YBKG-TB01-081409	None - ND	-	-	-	-
YBKG-FB01-081709	Acetone	1.8	9.0	None	All ND
	Chloroform	0.32	1.6		
	Styrene	0.26	1.3		
YBKG-FB-081309	Chloroform	0.32	1.6	None	All ND
	Styrene	0.53	2.65		
YBKG-EB01-081009	Acetone	5.8	29	None	All ND
	Benzene	0.68	3.4	B	2
	Toluene	3.5	17.5	B	9
	Ethylbenzene	0.58	2.9		
	Xylene(m,p)	2.0	10	None	All ND
	Xylene(o)	0.81	4.05		
YBKG-EB01-080309	Methyl-t-butyl ether	0.30	1.5	None	All ND
	Chloroform	0.48	2.4		

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKG-GW15-3-CC-0809 ug/L	YBKG-GW15P-3-CC-0809 ug/L	RPD	Qualifier
Carbon disulfide	0.67	1.0 U	NC	None
Benzene	0.27B	1.0 U	NC	None

Compound	YBKG-GW14-1-YE-0809 ug/L	YBKG-GW14P-1-YE-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound	YBKG-GW01-CC-0809 ug/L	YBKG-GW01P-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - All criteria were met.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 1

YBKG-GW15
-1-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803616

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	0.23	J
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

WW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW15
-1-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803616

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

LW
1/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW15
-1-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803616

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803616

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RW
11/11/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW15
-3-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803618

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	0.67	J
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~J~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	0.27	~~J~~ B EBL
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

NW
11/11/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW15
-3-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803618

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
1/11/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW15
-3-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803618

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803618

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

LW
11/11/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW15
P-3-CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803620

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

NW
11/4/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW15
P-3-CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803620

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

hw
11/11/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW15
P-3-CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803620

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803620

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

NW
6/11/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
-1-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803622

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

nw
11/11/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
-1-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803622

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/11/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW14
-1-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803622

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803622

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

lw
1/14/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
P-1-YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803624

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICC
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

WW
1/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
P-1-YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803624

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW14
P-1-YE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803624

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803624

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW
11/11/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803626

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803626

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

MW
11/11/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803626

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803626

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

NW 11/4/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-TB0
1-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803626

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803626

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

nw
11/11/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW15
-2-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803627

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICC
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

LW
11/11/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW15
-2-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803627

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/11/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW15
-2-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803627

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803627

Level: (low/med) LOW Date Received: 08/14/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

LW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
-3-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803701

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICV
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

LW
6/11/09

8

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
-3-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803701

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
1/11/09

8

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW14
-3-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803701

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803701

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

11/4/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW0
7-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803703

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	5.0	U	
75-15-0	Carbon Disulfide	1.0	U	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~J~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	1.0	U	
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	0.21	~~J~~ B	EBL
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

FORM I VOA

llw
1/11/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW0
7-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803703

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	0.41	~~J~~ B EBL
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/11/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW0
7-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803703

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803703

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 78-78-4	BUTANE, 2-METHYL-	3.52	0.59	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

hw
11/11/09

10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
-2-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803705

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JCC
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

lmd 11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW14
-2-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803705

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW14
-2-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803705

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803705

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

lw 11/11/09

11

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803707

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803707

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

IU

FORM I VOA

NW
1/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803707

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803707

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

11/11/09

11

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-TB0
1-081409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803707

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803707

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

MW 11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-FB-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803708

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	0.32	J
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

lw
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-FB-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803708

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	0.53	J
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

WD
1/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-FB-081309

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803708

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803708

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RW
1/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW07
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803709

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

lw
4/14/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW07
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803709

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

lw
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW07
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803709

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803709

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	18.78	0.52	~~J~~	J
2. 104-76-7	1-HEXANOL, 2-ETHYL-	20.22	0.78	~~NJ~~	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

nw
1/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW0
1-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803711

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

kw
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW0
1-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803711

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

lew 11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW0
1-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803711

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803711

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	20.20	0.65	J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

LW
4/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW01
P-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803713

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

UW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW01
P-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803713

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

NW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW01
P-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK26

Matrix: (soil/water) WATER Lab Sample ID: 803713

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803713

Level: (low/med) LOW Date Received: 08/15/09

% Moisture: not dec. _____ Date Analyzed: 08/19/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

kw
11/11/09

ENVIRONMENTAL
Data Services, Inc.

EXPLOSIVES

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK27

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW01A-YE-0809	803821	Water
2	YBKG-GW06A-CC-0809	803823	Water
3	YBKG-GW08A-CC-0809	803986	Water
4	YBKG-GW03A-CC-0809	803988	Water
5	YBKG-FB01-081709	803991	Water
6	YBKG-GW05A-CC-0809	804227	Water
7	YBKG-GW10-CC-0809	804312	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-FB01-081709	None - ND	-	-	-	-
YBKG-EB01-081009	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01A-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 24AUG091346-R661

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/18/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/20/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

MW
11/11/09

2

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW06A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 24AUG091346-R671

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/18/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/20/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

NW
11/11/09

3

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW08A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 24AUG091346-R681

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/20/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

MW
1/11/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW03A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 24AUG091346-R691

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/20/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

KW
11/11/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 24AUG091346-R711

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/20/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

NW
11/11/09

6

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW05A-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 26AUG091339-R201

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/20/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/27/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

NW 11/11/09

7

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW10-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 26AUG091339-R211

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/21/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/27/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

MW
11/11/09

ENVIRONMENTAL
Data Services, Inc.

METALS & CYANIDE
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK27

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW01A-YE-0809	803821	Water
1F	YBKG-GW01A-YE-0809	803822	Water
2	YBKG-GW06A-CC-0809	803823	Water
2F	YBKG-GW06A-CC-0809	803824	Water
3	YBKG-GW08A-CC-0809	803986	Water
3F	YBKG-GW08A-CC-0809	803987	Water
4	YBKG-GW03A-CC-0809	803988	Water
4F	YBKG-GW03A-CC-0809	803989	Water
5	YBKG-FB01-081709	803991	Water
6	YBKG-GW05A-CC-0809	804227	Water
6F	YBKG-GW05A-CC-0809	804228	Water
7	YBKG-GW10-CC-0809	804312	Water
7F	YBKG-GW10-CC-0809	804313	Water

The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

Holding Times - All samples were prepared and analyzed within 14 days for cyanide, 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values except the following.

Compound	% R	Qualifier	Affected Samples
Silver	67.7%	L/UL	All samples
Aluminum	162.2%	K	1,1F,2,2F,3,4,6,7
Iron	145.2%	K	1,1F,2,3,3F,4,4F,6,7,7F

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration except the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Lead	1.756	8.78	None	See FB01
Zinc	1.812	9.06	None	See EB01 & EB01F
Antimony	1.207	6.035	B	1, 1F,2,2F,3,3F,4,4F,6,6F,7,7F
Thallium	0.188	0.94	B	See FB01

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-FB01-081709	Antimony	0.74	3.7	None	See MBLK
	Thallium	0.18	0.90	B	All except #5
	Lead	1.8	9.0	B	1F,2,3,4F,5,6,7,7F
	Zinc	2.5	12.5	None	See EBs
YBKG-EB01-081009	Copper	13.0	65	B	1,7
	Manganese	2.8	14	B	2
	Mercury	0.070	0.35	None	All non-detect
	Thallium	0.18	0.90	None	See FB
	Zinc	4.7	23.5	B	2,3,4,6,7
YBKG-EB01-081009F	Calcium	558	2790	None	All >5X
	Magnesium	135	675	None	All >5X
	Sodium	464	2320	None	All >5X
	Thallium	0.18	0.90	None	See FB
	Zinc	4.8	24	B	1F,3F,4F,6F,7F

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike/Duplicate - A matrix spike/duplicate sample was not analyzed with this data package.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Quantitation - No discrepancies were identified.

1

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW01A-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): WATER Lab Sample ID: 803821

Level (low/med): LOW Date Received: 08/18/2009

% 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	~~B~~	UL	P	OT
7429-90-5	Aluminum	30700		K	P	OT
7440-36-0	Antimony	1.6	~~J~~	B	MS	MBL
7440-38-2	Arsenic	15.4			MS	
7440-39-3	Barium	178	J		P	
7440-41-7	Beryllium	2.4	J		P	
7440-43-9	Cadmium	0.72	J		MS	
7440-70-2	Calcium	146000			P	
7440-48-4	Cobalt	16.9	J		P	
7440-47-3	Chromium	96.8			P	
7440-50-8	Copper	15.7	~~J~~	B	P	EBL
7439-89-6	Iron	62100		K	P	OT
7439-95-4	Magnesium	6280			P	
7439-96-5	Manganese	279			P	
7439-97-6	Mercury	0.20	U		CV	
7440-23-5	Sodium	5740			P	
7440-02-0	Nickel	43.9			P	
7440-28-0	Thallium	0.63	~~J~~	B	MS	FBL
7439-92-1	Lead	21.3			P	
7440-09-7	Potassium	5970			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	83.9			P	
7440-66-6	Zinc	146			P	
57-12-5	Cyanide	10.0	U		AS	

Color Before: yellow Clarity Before: cloudy Texture:

Color After: white Clarity After: cloudy Artifacts:

Comments:

Form IA-IN NW 11/11/09

1F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW01A-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): FILTRATE Lab Sample ID: 803822

Level (low/med): LOW Date Received: 08/18/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	869		K	P	OT
7440-36-0	Antimony	1.1	~~J~~	B	MS	MBL
7440-38-2	Arsenic	1.1	J		MS	
7440-39-3	Barium	44.0	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	61500			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	3.6	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	1670		K	P	OT
7439-95-4	Magnesium	1280	J		P	
7439-96-5	Manganese	8.6	J		P	
7439-97-6	Mercury	0.20	U		CV	
7440-23-5	Sodium	5240			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.20	~~J~~	B	MS	FBL
7439-92-1	Lead	2.5	~~J~~	B	P	FBL
7440-09-7	Potassium	1140	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	2.5	J		P	
7440-66-6	Zinc	5.8	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

NW 11/11/09

2

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW06A-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): WATER Lab Sample ID: 803823

Level (low/med): LOW Date Received: 08/18/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	577		K	P	OT
7440-36-0	Antimony	1.6	~~J~~	B	MS	MBL
7440-38-2	Arsenic	1.6	J		MS	
7440-39-3	Barium	47.0	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.16	J		MS	
7440-70-2	Calcium	34400			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	22.3			P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	901		K	P	OT
7439-95-4	Magnesium	709	J		P	
7439-96-5	Manganese	7.4	~~J~~	B	P	EBL
7439-97-6	Mercury	0.20	U		CV	
7440-23-5	Sodium	5280			P	
7440-02-0	Nickel	9.9	J		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	FBL
7439-92-1	Lead	3.1	~~J~~	B	P	FBL
7440-09-7	Potassium	1980	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	3.3	J		P	
7440-66-6	Zinc	7.2	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/11/09

2F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW06A-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): FILTRATE Lab Sample ID: 803824

Level (low/med): LOW Date Received: 08/18/2009

% 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	~~B~~	UL	P	OT
7429-90-5	Aluminum	82.4	~~B~~	K	P	OT
7440-36-0	Antimony	1.4	~~B~~	B	MS	MBL
7440-38-2	Arsenic	1.3	J		MS	
7440-39-3	Barium	55.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	36500			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	200	U		P	
7439-95-4	Magnesium	729	J		P	
7439-96-5	Manganese	1.7	J		P	
7439-97-6	Mercury	0.20	U		CV	
7440-23-5	Sodium	5560			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	FBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1940	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	20.0	U		P	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/11/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW08A-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): WATER Lab Sample ID: 803986

Level (low/med): LOW Date Received: 08/19/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	1070		K	P	OT
7440-36-0	Antimony	2.1	~~J~~	B	MS	MBL
7440-38-2	Arsenic	4.3			MS	
7440-39-3	Barium	43.8	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.19	J		MS	
7440-70-2	Calcium	113000			P	
7440-48-4	Cobalt	0.73	J		P	
7440-47-3	Chromium	6.5	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	2880		K	P	OT
7439-95-4	Magnesium	1970	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	57.0			P	
7440-23-5	Sodium	7560			P	
7440-02-0	Nickel	2.7	J		P	
7440-28-0	Thallium	0.21	~~J~~	B	MS	FBL
7439-92-1	Lead	2.8	~~J~~	B	P	FBL
7440-09-7	Potassium	1460	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	4.4	J		P	
7440-66-6	Zinc	7.8	~~J~~	B	P	FBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/11/09

3f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW08A-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): FILTRATE Lab Sample ID: 803987

Level (low/med): LOW Date Received: 08/19/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	1.4	~~J~~	B	MS	MBL
7440-38-2	Arsenic	2.5			MS	
7440-39-3	Barium	39.9	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	81400			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	192	~~J~~	K	P	OT
7439-95-4	Magnesium	1560	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	38.3			P	
7440-23-5	Sodium	7900			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	FBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1160	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	6.6	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

HW 11/11/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW03A-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): WATER Lab Sample ID: 803988

Level (low/med): LOW Date Received: 08/19/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	94.0	~~J~~	K	P	OT
7440-36-0	Antimony	0.87	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.38	J		MS	
7440-39-3	Barium	80.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	98800			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	1650		K	P	OT
7439-95-4	Magnesium	2130	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	36.6			P	
7440-23-5	Sodium	5850			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	FBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	1510	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	2.8	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/11/09

4F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW03A-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): FILTRATE Lab Sample ID: 803989

Level (low/med): LOW Date Received: 08/19/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	0.86	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.31	J		MS	
7440-39-3	Barium	82.4	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	96400			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	1510		K	P	OT
7439-95-4	Magnesium	2170	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	32.4			P	
7440-23-5	Sodium	5970			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~J~~	B	MS	FBL
7439-92-1	Lead	2.4	~~J~~	B	P	FBL
7440-09-7	Potassium	1450	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	3.7	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

RW 11/11/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-FB01-081709

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): WATER Lab Sample ID: 803991

Level (low/med): LOW Date Received: 08/19/2009

% 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~~	UL	P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	0.74	J		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	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	200	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
7440-28-0	Thallium	0.18	J		MS
7439-92-1	Lead	1.8	J		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	2.5	J		P
57-12-5	Cyanide	10.0	U		AS

OT

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

NW 11/11/09

6

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW05A-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): WATER Lab Sample ID: 804227

Level (low/med): LOW Date Received: 08/20/2009

% 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	~~J~~	UL	P	OT
7429-90-5	Aluminum	2080		K	P	OT
7440-36-0	Antimony	0.98	~~J~~	B	MS	MBL
7440-38-2	Arsenic	2.5			MS	
7440-39-3	Barium	38.8	J		P	
7440-41-7	Beryllium	0.23	J		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	69900			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	14.0			P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	4950		K	P	OT
7439-95-4	Magnesium	1470	J		P	
7439-96-5	Manganese	39.1			P	
7439-97-6	Mercury	0.20	U		CV	
7440-23-5	Sodium	5060			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.20	~~J~~	B	MS	FBL
7439-92-1	Lead	2.6	~~J~~	B	P	FBL
7440-09-7	Potassium	1360	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	7.7	J		P	
7440-66-6	Zinc	13.4	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/11/09

6F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW05A-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): FILTRATE Lab Sample ID: 804228

Level (low/med): LOW Date Received: 08/20/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	0.91	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.41	J		MS	
7440-39-3	Barium	25.9	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	55100			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	5.8	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	200	U		P	
7439-95-4	Magnesium	944	J		P	
7439-96-5	Manganese	2.2	J		P	
7439-97-6	Mercury	0.20	U		CV	
7440-23-5	Sodium	4660	J		P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.18	~~U~~	B	MS	FBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	775	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	5.6	~~U~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN JW 11/11/09

7

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW10-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): WATER Lab Sample ID: 804312

Level (low/med): LOW Date Received: 08/21/2009

% 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	~~J~~	UL	P	OT
7429-90-5	Aluminum	2650		K	P	OT
7440-36-0	Antimony	1.6	~~J~~	B	MS	MBL
7440-38-2	Arsenic	1.9	J		MS	
7440-39-3	Barium	42.8	J		P	
7440-41-7	Beryllium	0.24	J		P	
7440-43-9	Cadmium	0.17	J		MS	
7440-70-2	Calcium	95900			P	
7440-48-4	Cobalt	1.4	J		P	
7440-47-3	Chromium	9.0	J		P	
7440-50-8	Copper	1.9	~~J~~	B	P	EBL
7439-89-6	Iron	5870		K	P	OT
7439-95-4	Magnesium	3870	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	126			P	
7440-23-5	Sodium	35800			P	
7440-02-0	Nickel	3.6	J		P	
7440-28-0	Thallium	0.22	~~J~~	B	MS	FBL
7439-92-1	Lead	4.5	~~J~~	B	P	FBL
7440-09-7	Potassium	1940	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	7.0	J		P	
7440-66-6	Zinc	19.3	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/11/09

7F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW10-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK27

Matrix (soil/water): FILTRATE Lab Sample ID: 804313

Level (low/med): LOW Date Received: 08/21/2009

% 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~~	UL	P	OT
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	1.2	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.45	J		MS	
7440-39-3	Barium	33.8	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.16	J		MS	
7440-70-2	Calcium	91600			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	0.90	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	154	~~J~~	K	P	OT
7439-95-4	Magnesium	3460	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	77.2			P	
7440-23-5	Sodium	31700			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	FBL
7439-92-1	Lead	2.5	~~J~~	B	P	FBL
7440-09-7	Potassium	1300	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	6.8	~~J~~	B	P	EBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/11/09

ENVIRONMENTAL
Data Services, Inc.

PESTICIDES/PCBs
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK27

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW01A-YE-0809	803821	Water
2	YBKG-GW06A-CC-0809	803823	Water
3	YBKG-GW08A-CC-0809	803986	Water
4	YBKG-GW03A-CC-0809	803988	Water
5	YBKG-FB01-081709	803991	Water
6	YBKG-GW05A-CC-0809	804227	Water
7	YBKG-GW10-CC-0809	804312	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Instrument performance - All 4,4'-DDT/endrin % breakdown, resolution check mixture and PEMs were within criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
1 Pest	TCX1/TCX2/DCB1/DCB2	OK/OK/30%/32%	J/UJ
1 PCB	TCX1/TCX2/DCB1/DCB2	OK/OK/29%/29%	J/UJ

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
E0821096LCS	Alpha-BHC	140	None	All non-detect

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-FB01-081709	None - ND	-	-	-	-
YBKG-EB01-081009	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 22AUG091141-R211

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/18/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q		
319-84-6	alpha-BHC	0.051	U	UJ	SSL
319-85-7	beta-BHC	0.051	U		
319-86-8	delta-BHC	0.051	U		
58-89-9	gamma-BHC (Lindane)	0.051	U		
76-44-8	Heptachlor	0.051	U		
309-00-2	Aldrin	0.051	U		
1024-57-3	Heptachlor epoxide	0.051	U		
959-98-8	Endosulfan I	0.051	U		
60-57-1	Dieldrin	0.10	U		
72-55-9	4,4'-DDE	0.10	U		
72-20-8	Endrin	0.10	U		
33213-65-9	Endosulfan II	0.10	U		
72-54-8	4,4'-DDD	0.10	U		
1031-07-8	Endosulfan sulfate	0.10	U		
50-29-3	4,4'-DDT	0.10	U		
72-43-5	Methoxychlor	0.51	U		
53494-70-5	Endrin ketone	0.10	U		
7421-93-4	Endrin aldehyde	0.10	U		
57-74-9	Chlordane	0.51	U		
8001-35-2	Toxaphene	5.1	U		
5103-74-2	gamma-Chlordane	0.051	U		
5103-71-9	alpha-Chlordane	0.051	U		

LW
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW06ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 960.0 (g/mL) ML Lab File ID: 22AUG091141-R221

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/18/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/22/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.052	U
319-85-7	beta-BHC	0.052	U
319-86-8	delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.52	U
8001-35-2	Toxaphene	5.2	U
5103-74-2	gamma-Chlordane	0.052	U
5103-71-9	alpha-Chlordane	0.052	U

WW 11/11/09

3

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW08ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 01SE091606-R031

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.096	U
72-55-9	4,4'-DDE	0.096	U
72-20-8	Endrin	0.096	U
33213-65-9	Endosulfan II	0.096	U
72-54-8	4,4'-DDD	0.096	U
1031-07-8	Endosulfan sulfate	0.096	U
50-29-3	4,4'-DDT	0.096	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.096	U
7421-93-4	Endrin aldehyde	0.096	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

nw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW03ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 01SE091606-R041

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
76-44-8	Heptachlor	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
60-57-1	Dieldrin	0.098	U
72-55-9	4,4'-DDE	0.098	U
72-20-8	Endrin	0.098	U
33213-65-9	Endosulfan II	0.098	U
72-54-8	4,4'-DDD	0.098	U
1031-07-8	Endosulfan sulfate	0.098	U
50-29-3	4,4'-DDT	0.098	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin ketone	0.098	U
7421-93-4	Endrin aldehyde	0.098	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	4.9	U
5103-74-2	gamma-Chlordane	0.049	U
5103-71-9	alpha-Chlordane	0.049	U

MW
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 995.0 (g/mL) ML Lab File ID: 01SE091606-R051

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
57-74-9	Chlordane	0.50	U
8001-35-2	Toxaphene	5.0	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U

MW
11/11/09

6

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW10CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 01SE091606-R071

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/21/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
76-44-8	Heptachlor	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
60-57-1	Dieldrin	0.098	U
72-55-9	4,4'-DDE	0.098	U
72-20-8	Endrin	0.098	U
33213-65-9	Endosulfan II	0.098	U
72-54-8	4,4'-DDD	0.098	U
1031-07-8	Endosulfan sulfate	0.098	U
50-29-3	4,4'-DDT	0.098	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin ketone	0.098	U
7421-93-4	Endrin aldehyde	0.098	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	4.9	U
5103-74-2	gamma-Chlordane	0.049	U
5103-71-9	alpha-Chlordane	0.049	U

MW 11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW05ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 01SE091606-R061

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/20/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
60-57-1	Dieldrin	0.096	U
72-55-9	4,4'-DDE	0.096	U
72-20-8	Endrin	0.096	U
33213-65-9	Endosulfan II	0.096	U
72-54-8	4,4'-DDD	0.096	U
1031-07-8	Endosulfan sulfate	0.096	U
50-29-3	4,4'-DDT	0.096	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin ketone	0.096	U
7421-93-4	Endrin aldehyde	0.096	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	4.8	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U

RW
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW01AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 975.0 (g/mL) ML Lab File ID: 25AUG091731-R171

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/18/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.51	U UJ SSL
11104-28-2	Aroclor-1221	0.51	U
11141-16-5	Aroclor-1232	0.51	U
53469-21-9	Aroclor-1242	0.51	U
12672-29-6	Aroclor-1248	0.51	U
11097-69-1	Aroclor-1254	0.51	U
11096-82-5	Aroclor-1260	0.51	U

11/11/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW06ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 960.0 (g/mL) ML Lab File ID: 25AUG091731-R181

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/18/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/19/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/26/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	0.52	U
11104-28-2------	Aroclor-1221	0.52	U
11141-16-5------	Aroclor-1232	0.52	U
53469-21-9------	Aroclor-1242	0.52	U
12672-29-6------	Aroclor-1248	0.52	U
11097-69-1------	Aroclor-1254	0.52	U
11096-82-5------	Aroclor-1260	0.52	U

FORM I OTHER

MW 11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW08ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 28AUG090925-R061

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

RW
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW03ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 28AUG090925-R071

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

lw
11/11/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGFB01081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 995.0 (g/mL) ML Lab File ID: 28AUG090925-R081

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/19/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	0.50	U
11104-28-2------	Aroclor-1221	0.50	U
11141-16-5------	Aroclor-1232	0.50	U
53469-21-9------	Aroclor-1242	0.50	U
12672-29-6------	Aroclor-1248	0.50	U
11097-69-1------	Aroclor-1254	0.50	U
11096-82-5------	Aroclor-1260	0.50	U

kw
11/11/09

6

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW05ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 28AUG090925-R091

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/20/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

FORM I OTHER

kw
11/11/09

7

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KGGW10CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 1025 (g/mL) ML Lab File ID: 28AUG090925-R101

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/21/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/21/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

FORM I OTHER

MW
11/11/09

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK27

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW01A-YE-0809	803821	Water
2	YBKG-GW06A-CC-0809	803823	Water
3	YBKG-GW08A-CC-0809	803986	Water
4	YBKG-GW03A-CC-0809	803988	Water
5	YBKG-FB01-081709	803991	Water
6	YBKG-GW05A-CC-0809	804227	Water
7	YBKG-GW10-CC-0809	804312	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values. except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/26/09	Pyrene	34.0% D	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	Naphthalene	0.64	3.2	None	All ND
	Caprolactam	1.1	5.5		
	Diethylphthalate	1.1	5.5		
	Di-n-butylphthalate	0.89	4.45		
	Butylbenzylphthalate	1.1	5.5		
YBKG-FB01-081709	None - ND	-	-	-	-

Field Duplicates - Field duplicate samples were not included in this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - No discrepancies were identified.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 995.0 (g/mL) ML Lab File ID: 803821

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

WW
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 995.0 (g/mL) ML Lab File ID: 803821

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/24/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	25	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/11/09

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW01AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK27

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 803821

Sample wt/vol: 995 (g/mL) mL Lab File ID: 803821

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/18/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/18/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/24/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.68	10	~~NJA~~	R
02	104-40-5	4-Nonylphenol	12.43	2.0	NJ	NJ
03	25154-52-3	Phenol, nonyl-	12.66	2.0	~~NJ~~	NJ
04		Unknown	12.72	2.9	J	J
05		Unknown	13.27	3.9	~~J~~	J
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
	E966796(2)	Total Alkanes	N/A			

(2)EPA-designated Registry Number.

SOM01.2

NW
11/11/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW06ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 965.0 (g/mL) ML Lab File ID: 803823

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
98-86-2	Acetophenone	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
105-60-2	Caprolactam	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
92-52-4	1,1'-Biphenyl	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

FORM I SV

NW
11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 2

GW06ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 965.0 (g/mL) ML Lab File ID: 803823

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/18/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	10	U
100-02-7	4-Nitrophenol	26	U
121-14-2	2,4-Dinitrotoluene	10	U
86-73-7	Fluorene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
1912-24-9	Atrazine	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

LW
11/11/09

2

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW06ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK27

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 803823

Sample wt/vol: 965 (g/mL) mL Lab File ID: 803823

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/18/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/18/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/26/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.58	12	~~NJA~~	R
02	140-66-9	Phenol, 4-(1,1,3,3-tetrameth	12.29	5.3	NJ	NJ
03	25154-52-3	Phenol, nonyl-	12.39	5.3	NJ	NJ
04		Unknown phenol derivative	12.43	3.1	J	J
05	54932-78-4	Phenol, 4-(2,2,3,3-tetrameth	12.50	3.0	NJ	NJ
06	25154-52-3	Phenol, nonyl-	12.56	5.9	NJ	
07	54932-78-4	Phenol, 4-(2,2,3,3-tetrameth	12.63	7.2	NJ	
08	25154-52-3	Phenol, nonyl-	12.70	3.3	NJ	
09		Unknown	13.18	3.8	J	J
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
	E966796(2)	Total Alkanes	N/A			

(2) EPA-designated Registry Number.

SOM01.2

NW 11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW08ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 803986

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.6	U
108-95-2	Phenol	9.6	U
111-44-4	bis(2-Chloroethyl)ether	9.6	U
95-57-8	2-Chlorophenol	9.6	U
95-48-7	2-Methylphenol	9.6	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.6	U
98-86-2	Acetophenone	9.6	U
106-44-5	4-Methylphenol	9.6	U
621-64-7	N-Nitroso-di-n-propylamine	9.6	U
67-72-1	Hexachloroethane	9.6	U
98-95-3	Nitrobenzene	9.6	U
78-59-1	Isophorone	9.6	U
88-75-5	2-Nitrophenol	9.6	U
105-67-9	2,4-Dimethylphenol	9.6	U
111-91-1	bis(2-Chloroethoxy)methane	9.6	U
120-83-2	2,4-Dichlorophenol	9.6	U
91-20-3	Naphthalene	9.6	U
106-47-8	4-Chloroaniline	9.6	U
87-68-3	Hexachlorobutadiene	9.6	U
105-60-2	Caprolactam	9.6	U
59-50-7	4-Chloro-3-Methylphenol	9.6	U
91-57-6	2-Methylnaphthalene	9.6	U
77-47-4	Hexachlorocyclopentadiene	9.6	U
88-06-2	2,4,6-Trichlorophenol	9.6	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.6	U
92-52-4	1,1'-Biphenyl	9.6	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.6	U
208-96-8	Acenaphthylene	9.6	U
606-20-2	2,6-Dinitrotoluene	9.6	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.6	U

NW
1/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW08ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 803986

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.6	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.6	U
86-73-7	Fluorene	9.6	U
84-66-2	Diethylphthalate	9.6	U
7005-72-3	4-Chlorophenyl-phenylether	9.6	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.6	U
101-55-3	4-Bromophenyl-phenylether	9.6	U
118-74-1	Hexachlorobenzene	9.6	U
1912-24-9	Atrazine	9.6	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.6	U
120-12-7	Anthracene	9.6	U
86-74-8	Carbazole	9.6	U
84-74-2	Di-n-butylphthalate	9.6	U
206-44-0	Fluoranthene	9.6	U
129-00-0	Pyrene	9.6	U
85-68-7	Butylbenzylphthalate	9.6	U
56-55-3	Benzo(a)anthracene	9.6	U
91-94-1	3,3'-Dichlorobenzidine	9.6	U
218-01-9	Chrysene	9.6	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.6	U
117-84-0	Di-n-octylphthalate	9.6	U
205-99-2	Benzo(b)fluoranthene	9.6	U
207-08-9	Benzo(k)fluoranthene	9.6	U
50-32-8	Benzo(a)pyrene	9.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.6	U
53-70-3	Dibenz(a,h)anthracene	9.6	U
191-24-2	Benzo(g,h,i)perylene	9.6	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

hw
11/11/09

3

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW08ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK27

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 803986

Sample wt/vol: 1050 (g/mL) mL Lab File ID: 803986

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/19/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/26/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.57	10	~~NJAB~~ R
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796(2)	Total Alkanes	N/A		

(2) EPA-designated Registry Number.

SOM01.2

NW
1/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW03ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 803988

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.6	U
108-95-2	Phenol	9.6	U
111-44-4	bis(2-Chloroethyl)ether	9.6	U
95-57-8	2-Chlorophenol	9.6	U
95-48-7	2-Methylphenol	9.6	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.6	U
98-86-2	Acetophenone	9.6	U
106-44-5	4-Methylphenol	9.6	U
621-64-7	N-Nitroso-di-n-propylamine	9.6	U
67-72-1	Hexachloroethane	9.6	U
98-95-3	Nitrobenzene	9.6	U
78-59-1	Isophorone	9.6	U
88-75-5	2-Nitrophenol	9.6	U
105-67-9	2,4-Dimethylphenol	9.6	U
111-91-1	bis(2-Chloroethoxy)methane	9.6	U
120-83-2	2,4-Dichlorophenol	9.6	U
91-20-3	Naphthalene	9.6	U
106-47-8	4-Chloroaniline	9.6	U
87-68-3	Hexachlorobutadiene	9.6	U
105-60-2	Caprolactam	9.6	U
59-50-7	4-Chloro-3-Methylphenol	9.6	U
91-57-6	2-Methylnaphthalene	9.6	U
77-47-4	Hexachlorocyclopentadiene	9.6	U
88-06-2	2,4,6-Trichlorophenol	9.6	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.6	U
92-52-4	1,1'-Biphenyl	9.6	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.6	U
208-96-8	Acenaphthylene	9.6	U
606-20-2	2,6-Dinitrotoluene	9.6	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.6	U

FORM I SV

11/11/09

4

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW03ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 1045 (g/mL) ML Lab File ID: 803988

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.6	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.6	U
86-73-7	Fluorene	9.6	U
84-66-2	Diethylphthalate	9.6	U
7005-72-3	4-Chlorophenyl-phenylether	9.6	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.6	U
101-55-3	4-Bromophenyl-phenylether	9.6	U
118-74-1	Hexachlorobenzene	9.6	U
1912-24-9	Atrazine	9.6	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.6	U
120-12-7	Anthracene	9.6	U
86-74-8	Carbazole	9.6	U
84-74-2	Di-n-butylphthalate	9.6	U
206-44-0	Fluoranthene	9.6	U
129-00-0	Pyrene	9.6	U
85-68-7	Butylbenzylphthalate	9.6	U
56-55-3	Benzo(a)anthracene	9.6	U
91-94-1	3,3'-Dichlorobenzidine	9.6	U
218-01-9	Chrysene	9.6	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.6	U
117-84-0	Di-n-octylphthalate	9.6	U
205-99-2	Benzo(b)fluoranthene	9.6	U
207-08-9	Benzo(k)fluoranthene	9.6	U
50-32-8	Benzo(a)pyrene	9.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.6	U
53-70-3	Dibenz(a,h)anthracene	9.6	U
191-24-2	Benzo(g,h,i)perylene	9.6	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/11/09

4

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW03ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK27

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 803988

Sample wt/vol: 1050 (g/mL) mL Lab File ID: 803988

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/19/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/26/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.56	7.8	~~NJAB~~ R
02	104-40-5	4-Nonylphenol	12.35	2.1	~~NJ~~ NJ
03	98-27-1	Phenol, 4-(1,1-dimethylethyl	12.56	2.1	~~NJ~~ NJ
04	54932-78-4	Phenol, 4-(2,2,3,3-tetrameth	12.62	2.7	~~NJ~~ NJ
05		Unknown	13.18	2.9	~~JB~~ R
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796(2)	Total Alkanes	N/A		

(2) EPA-designated Registry Number.

SOM01.2

LW 11/11/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 803991

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.6	U
108-95-2	Phenol	9.6	U
111-44-4	bis(2-Chloroethyl)ether	9.6	U
95-57-8	2-Chlorophenol	9.6	U
95-48-7	2-Methylphenol	9.6	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.6	U
98-86-2	Acetophenone	9.6	U
106-44-5	4-Methylphenol	9.6	U
621-64-7	N-Nitroso-di-n-propylamine	9.6	U
67-72-1	Hexachloroethane	9.6	U
98-95-3	Nitrobenzene	9.6	U
78-59-1	Isophorone	9.6	U
88-75-5	2-Nitrophenol	9.6	U
105-67-9	2,4-Dimethylphenol	9.6	U
111-91-1	bis(2-Chloroethoxy)methane	9.6	U
120-83-2	2,4-Dichlorophenol	9.6	U
91-20-3	Naphthalene	9.6	U
106-47-8	4-Chloroaniline	9.6	U
87-68-3	Hexachlorobutadiene	9.6	U
105-60-2	Caprolactam	9.6	U
59-50-7	4-Chloro-3-Methylphenol	9.6	U
91-57-6	2-Methylnaphthalene	9.6	U
77-47-4	Hexachlorocyclopentadiene	9.6	U
88-06-2	2,4,6-Trichlorophenol	9.6	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.6	U
92-52-4	1,1'-Biphenyl	9.6	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.6	U
208-96-8	Acenaphthylene	9.6	U
606-20-2	2,6-Dinitrotoluene	9.6	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.6	U

kw 11/11/09

5

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 803991

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.6	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.6	U
86-73-7	Fluorene	9.6	U
84-66-2	Diethylphthalate	9.6	U
7005-72-3	4-Chlorophenyl-phenylether	9.6	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.6	U
101-55-3	4-Bromophenyl-phenylether	9.6	U
118-74-1	Hexachlorobenzene	9.6	U
1912-24-9	Atrazine	9.6	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.6	U
120-12-7	Anthracene	9.6	U
86-74-8	Carbazole	9.6	U
84-74-2	Di-n-butylphthalate	9.6	U
206-44-0	Fluoranthene	9.6	U
129-00-0	Pyrene	9.6	U
85-68-7	Butylbenzylphthalate	9.6	U
56-55-3	Benzo(a)anthracene	9.6	U
91-94-1	3,3'-Dichlorobenzidine	9.6	U
218-01-9	Chrysene	9.6	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.6	U
117-84-0	Di-n-octylphthalate	9.6	U
205-99-2	Benzo(b)fluoranthene	9.6	U
207-08-9	Benzo(k)fluoranthene	9.6	U
50-32-8	Benzo(a)pyrene	9.6	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.6	U
53-70-3	Dibenz(a,h)anthracene	9.6	U
191-24-2	Benzo(g,h,i)perylene	9.6	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW 1/1/1/09

5

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FB01081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK27

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 803991

Sample wt/vol: 1040 (g/mL) mL Lab File ID: 803991

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/19/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/26/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.57	4.7	~~NJAB~~ R
02		Unknown	13.18	4.2	~~JB~~ R
03		Unknown	13.79	3.6	~~J~~ J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796(2)	Total Alkanes	N/A		

(2) EPA-designated Registry Number.

SOM01.2

NW 11/11/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW05ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 804227

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.5	U
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
98-86-2	Acetophenone	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitroso-di-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	9.5	U
87-68-3	Hexachlorobutadiene	9.5	U
105-60-2	Caprolactam	9.5	U
59-50-7	4-Chloro-3-Methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.5	U
92-52-4	1,1'-Biphenyl	9.5	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.5	U
208-96-8	Acenaphthylene	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.5	U

FORM I SV

NW
11/11/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW05ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 1050 (g/mL) ML Lab File ID: 804227

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.5	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.5	U
86-73-7	Fluorene	9.5	U
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl-phenylether	9.5	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.5	U
101-55-3	4-Bromophenyl-phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
1912-24-9	Atrazine	9.5	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butylphthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
56-55-3	Benzo(a)anthracene	9.5	U
91-94-1	3,3'-Dichlorobenzidine	9.5	U
218-01-9	Chrysene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
117-84-0	Di-n-octylphthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

YW
11/11/09

6

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW05ACC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK27

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 804227

Sample wt/vol: 1050 (g/mL) mL Lab File ID: 804227

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/20/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/26/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.59	13	N~~JAB~~ R
02		Unknown	13.19	2.3	~~JB~~ R
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796(2)	Total Alkanes	N/A		

(2) EPA-designated Registry Number.

SOM01.2

NW
6/11/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW10CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804312

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

NW
11/11/09

7

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW10CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804312

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/22/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/26/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.4	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.4	U
86-73-7	Fluorene	9.4	U
84-66-2	Diethylphthalate	9.4	U
7005-72-3	4-Chlorophenyl-phenylether	9.4	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.4	U
101-55-3	4-Bromophenyl-phenylether	9.4	U
118-74-1	Hexachlorobenzene	9.4	U
1912-24-9	Atrazine	9.4	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.4	U
120-12-7	Anthracene	9.4	U
86-74-8	Carbazole	9.4	U
84-74-2	Di-n-butylphthalate	9.4	U
206-44-0	Fluoranthene	9.4	U
129-00-0	Pyrene	9.4	U
85-68-7	Butylbenzylphthalate	9.4	U
56-55-3	Benzo(a)anthracene	9.4	U
91-94-1	3,3'-Dichlorobenzidine	9.4	U
218-01-9	Chrysene	9.4	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U
117-84-0	Di-n-octylphthalate	9.4	U
205-99-2	Benzo(b)fluoranthene	9.4	U
207-08-9	Benzo(k)fluoranthene	9.4	U
50-32-8	Benzo(a)pyrene	9.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U
53-70-3	Dibenz(a,h)anthracene	9.4	U
191-24-2	Benzo(g,h,i)perylene	9.4	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/11/09

7

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
GW10CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 Mod. Ref No.: SDG No.: YORK27

Matrix: (SOIL/SED/WATER) Water Lab Sample ID: 804312

Sample wt/vol: 1060 (g/mL) mL Lab File ID: 804312

Level: (LOW/MED) LOW Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 08/21/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2009

Injection Volume: 2.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/26/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
01	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.57	4.4	~~NJAB~~	R
02	134-62-3	Diethyltoluamide	11.34	2.7	NJ	NJ
03	140-66-9	Phenol, 4-(1,1,3,3-tetrameth	12.28	2.3	NJ	
04	25154-52-3	Phenol, nonyl-	12.34	2.7	NJ	
05	54932-78-4	Phenol, 4-(2,2,3,3-tetrameth	12.39	2.6	NJ	
06	25154-52-3	Phenol, nonyl-	12.56	2.2	NJ	
07	54932-78-4	Phenol, 4-(2,2,3,3-tetrameth	12.62	2.9	NJ	
08	2219-84-3	Phenol, 2-methyl-4-(1,1,3,3-	12.69	1.9	NJ	
09		Unknown	13.19	2.2	UB	R
10	6971-40-0	17-Pentatriacontene	19.15	2.1	NJ	NJ
11	0-00-0	2-Hexyl-1-decanol	19.92	1.9	NJ	NJ
12		Unknown	21.14	8.2	J	J
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
	E966796(2)	Total Alkanes	N/A			

(2) EPA-designated Registry Number.

SOM01.2

NW
11/11/09

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK27

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 11, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKG-GW01A-YE-0809	803821	Water
2	YBKG-GW06A-CC-0809	803823	Water
3	YBKG-TB02-081409	803825	Water
4	YBKG-GW08A-CC-0809	803986	Water
5	YBKG-GW03A-CC-0809	803988	Water
5RE	YBKG-GW03A-CC-0809RE	803988RE	Water
6	YBKG-TB01-081709	803990	Water
7	YBKG-FB01-081709	803991	Water
8	YBKG-GW05A-CC-0809	804227	Water
8RE	YBKG-GW05A-CC-0809RE	804227RE	Water
9	YBKG-TB01-081809	804229	Water
9RE	YBKG-TB01-081809RE	804229RE	Water
10	YBKG-GW10-CC-0809	804312	Water
11	YBKG-TB01-081909	804314	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values except the following.

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
08/24/09	Acetone	0.045 RRF	L/R	10
	2-Butanone	0.018 RRF		
08/25/09	Acetone	0.045 RRF	L/R	11
	2-Butanone	0.020 RRF		

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
08/05/09	2-Butanone	0.022 RRF	L/R	1-9, 5RE, 8RE, 9RE

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/21/09	2-Butanone	0.023 RRF	None	See ICAL
08/24/09	Acetone	0.038 RFF	None	See ICAL
	2-Butanone	0.016 RRF		

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
5	1,2-Dichloroethane-d4	116%	None - Sample ND
5RE	1,2-Dichloroethane-d4	117%	None - Sample ND
6	1,2-Dichloroethane-d4	115%	None - Sample ND
8	1,2-Dichloroethane-d4	116%	None - Sample ND
8RE	1,2-Dichloroethane-d4	121%	None - Sample ND
9	1,2-Dichloroethane-d4	118%	None - Sample ND
9RE	1,2-Dichloroethane-d4	116%	None - Sample ND

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks exhibited the following contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
MBLK082709MA	Carbon disulfide	0.33	1.65	None	All ND

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBGK-TB02-081409	Trichloroethene	0.45	2.25	B	10
YBGK-TB01-081709	Trichloroethene	0.22	1.1	None	All ND
YBGK-TB01-081809	None - ND	-	-	-	-

YBGK-TB01-081909	Carbon Disulfide	0.36	1.8	None	All ND
	trans-1,2-Dichloroethene	0.21	1.05	None	All ND
	Trichloroethene	0.27	1.35	None	All ND
YBGK-EB01-081009	Acetone	5.8	58	B	4
	Benzene	0.68	3.4	None	All ND
	Toluene	3.5	17.5		
	Ethylbenzene	0.58	2.9		
	Xylene (m,p)	2.0	10		
	Xylene (o)	0.81	4.05		
YBGK-FB01-081709	Acetone	1.8	18	None	All ND
	Chloroform	0.32	1.6	B	10
	Styrene	0.26	1.3	None	All ND

Field Duplicates - Field duplicate samples were not included in this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - Three samples exhibited surrogate deficiencies and were reanalyzed with similar results. The original analysis sample results should be used for reporting.

1

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW01
A-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803821

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	0.46	J
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	3.8	
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	0.24	J
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

NW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW01
A-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803821

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

hw
11/1/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW01
A-YE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803821

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803821

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.59	0.66	J
2.	UNKNOWN	13.46	1.1	J
3.	UNKNOWN	18.62	1.3	J
4.	UNKNOWN	20.94	0.78	J
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

J

FORM I VOA-TIC

NW 11/11/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW06
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803823

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICC
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

NW
11/11/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW06
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803823

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

NW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO. 2

YBKG-GW06
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803823

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803823

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	13.50	1.4	J
2.	UNKNOWN	18.63	1.9	J
3.	UNKNOWN	20.94	0.96	J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

J ↓

FORM I VOA-TIC

NW
11/11/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
2-081409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803825

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803825

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R IcL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	0.45	J
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

NW
11/11/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
2-081409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803825

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803825

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

11/11/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-TB0
2-081409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803825

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803825

Level: (low/med) LOW Date Received: 08/18/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

lw
11/11/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW08
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803986

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	2.1	~~J~~ B EBL
75-15-0	Carbon Disulfide	0.23	J
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~J~~ R IC
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

RW
11/11/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW08
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803986

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

nw
11/4/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW08
A-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803986

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803986

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	13.45	0.64	J
2.	UNKNOWN	18.63	0.78	J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW
11/11/09

5

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW03A

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803988

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~J~~ R ICC
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

NW 11/11/09

5

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW03A

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803988

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

hw
11/11/09

5

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW03A

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803988

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.63	0.51	~~J~~ J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

hw
11/11/09

5RE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW03ARE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803988I2

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Use original

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

KW 11/11/09

SRE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW03ARE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803988I2

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume:_____(uL)

Use original

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

NW
11/11/09

SRE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW03ARE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803988R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803988I2

Level: (low/med) LOW Date Received: 08/19/09 Use original

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

NW
11/11/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803990

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803990

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	0.22	J
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

KW
11/11/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803990

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803990

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

hew
11/11/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-TB0
1-081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803990

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803990

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	13.45	0.87	J
2.	UNKNOWN	18.63	1.2	J
3.	UNKNOWN	20.94	0.83	J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW
11/11/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-FB0
1-081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803991

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	1.8	J
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	0.32	J
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

MW
11/11/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-FB0
1-081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803991

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	0.26	J
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

LW
11/11/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-FB0
1-081709

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 803991

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 803991

Level: (low/med) LOW Date Received: 08/19/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.64	0.71	~~J~~ J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

KW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 8

YBKG-GW05A

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804227

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JCL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

NW 11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 8

YBKG-GW05A

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804227

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/11/09

8

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW05A

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804227

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

11/11/09

BRE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW05ARE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804227I2

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

Use original

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R Ia
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

KW
11/11/09

8RE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW05ARE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804227I2

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

Use original

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

LW
11/11/09

8RE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW05ARE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804227R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804227I2

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

Use original

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

LW 11/11/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

TB01-0818

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804229

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804229

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JCL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

KW
11/11/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

TB01-0818

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804229

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804229

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

NW
11/4/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

TB01-0818

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804229

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804229

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

NW
11/11/09

9RE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

TB01-0818RE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804229R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804229I2

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume:_____(uL)

Use original

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JCC
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

MW 11/11/09

9RE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

TB01-0818RE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804229R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804229I2

Level: (low/med) LOW Date Received: 08/20/09

Use original

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

11/11/09

9RE

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

TB01-0818RE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804229R1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804229I2

Level: (low/med) LOW Date Received: 08/20/09

% Moisture: not dec. _____ Date Analyzed: 08/21/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Use original

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW
11/11/09

10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW1
0-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804312

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: not dec. _____ Date Analyzed: 08/25/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	5.0	~~U~~ R	ICL
75-15-0	Carbon Disulfide	1.0	U	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	0.26	J	
75-34-3	1,1-Dichloroethane	0.29	J	
156-59-2	cis-1,2-Dichloroethene	6.4		
78-93-3	2-Butanone	5.0	~~U~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	0.41	~~J~~ B	FBL
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	0.52	~~J~~ B	TBL
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

FORM I VOA

NW
11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-GW1
0-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804312

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: not dec. _____ Date Analyzed: 08/25/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

11/11/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-GW1
0-CC-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804312

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804312

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: not dec. _____ Date Analyzed: 08/25/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW
11/11/09

11

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081909

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804314

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804314I2

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: not dec. _____ Date Analyzed: 08/25/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	5.0	~~U~~ R	ICV
75-15-0	Carbon Disulfide	0.36	J	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	0.21	J	
1634-04-4	Methyl-t-Butyl Ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~U~~ R	ICV
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	1.0	U	
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	0.27	J	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

FORM I VOA

11/11/09

11

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKG-TB0
1-081909

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804314

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804314I2

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: not dec. _____ Date Analyzed: 08/25/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

RW
11/11/09

11

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKG-TB0
1-081909

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK27

Matrix: (soil/water) WATER Lab Sample ID: 804314

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804314I2

Level: (low/med) LOW Date Received: 08/21/09

% Moisture: not dec. _____ Date Analyzed: 08/25/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

MW
11/11/09

ENVIRONMENTAL
Data Services, Inc.

EXPLOSIVES

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK28

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 12, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKL-GW01-CC-0809	804382	Water
2	YBKL-GW01P-CC-0809	804384	Water
3	YBKL-GW02-CC-0809	804386	Water
3MS	YBKL-GW02-CC-0809MS	804386MS	Water
3MSD	YBKL-GW02-CC-0809MSD	804386MSD	Water
4	YBKL-EB01-082009	804388	Water
5	YBKL-FB01-082009	804389	Water
6	YBKG-GW09A-YE-0809	804638	Water
7	YBKG-FB01-082409	804642	Water
8	YBKG-GW10A-YE-0809	804749	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	None - ND	-	-	-	-
YBKL-EB01-082009	None - ND	-	-	-	-
YBKL-FB01-082009	None - ND	-	-	-	-
YBKG-FB01-082409	3-Nitrotoluene	0.33	1.65	None	All ND

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKL-GW01-CC-0809 ug/L	YBKL-GW01P-CC-0809 ug/L	RPD	Qualifier
None	ND	ND	-	-

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - Several samples exhibited results with high %D values between columns and have been flagged (P) by the laboratory and further qualified (J).

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 26AUG091339-R321

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/27/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

nw
11/12/09

2

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01P-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 26AUG091339-R331

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/27/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

AW
11/12/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW02-CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 26AUG091339-R351

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/27/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

NW
11/12/09

4

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

EB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 26AUG091339-R361

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/27/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

NW
11/12/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 26AUG091339-R371

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/27/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

1/1/2009

6

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW09A-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 01SE091007-R351

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/26/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/28/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/02/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

JW
11/12/09

7

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01-082409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 01SE091007-R361

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/26/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/28/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/02/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
2691-41-0	HMX	0.25	U	
121-82-4	RDX	0.25	U	
99-35-4	1,3,5-Trinitrobenzene	0.25	U	
99-65-0	1,3-Dinitrobenzene	0.25	U	
98-95-3	Nitrobenzene	0.25	U	
479-45-8	Tetryl	0.25	U	
118-96-7	2,4,6-Trinitrotoluene	0.25	U	
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U	
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U	
606-20-2	2,6-Dinitrotoluene	0.25	U	
121-14-2	2,4-Dinitrotoluene	0.25	U	
88-72-2	2-Nitrotoluene	0.25	U	
99-99-0	4-Nitrotoluene	0.25	U	
99-08-1	3-Nitrotoluene	0.33	J	2C

FORM I EXPLOSIVES

MW
11/12/09

FORM 1
EXPLOSIVES ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW10A-YE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804749

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: 01SE091007-R371

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/27/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 08/28/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/02/09

Injection Volume: 200.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
2691-41-0	HMX	0.25	U
121-82-4	RDX	0.25	U
99-35-4	1,3,5-Trinitrobenzene	0.25	U
99-65-0	1,3-Dinitrobenzene	0.25	U
98-95-3	Nitrobenzene	0.25	U
479-45-8	Tetryl	0.25	U
118-96-7	2,4,6-Trinitrotoluene	0.25	U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25	U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.25	U
606-20-2	2,6-Dinitrotoluene	0.25	U
121-14-2	2,4-Dinitrotoluene	0.25	U
88-72-2	2-Nitrotoluene	0.25	U
99-99-0	4-Nitrotoluene	0.25	U
99-08-1	3-Nitrotoluene	0.25	U

NW
11/12/09

ENVIRONMENTAL
Data Services, Inc.

METALS & CYANIDE

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK28

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 12, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKL-GW01-CC-0809	804382	Water
1F	YBKL-GW01-CC-0809	804383	Water
2	YBKL-GW01P-CC-0809	804384	Water
2F	YBKL-GW01P-CC-0809	804385	Water
3	YBKL-GW02-CC-0809	804386	Water
3MS	YBKL-GW02-CC-0809MS	804386MS	Water
3MSD	YBKL-GW02-CC-0809MSD	804386MSD	Water
3F	YBKL-GW02-CC-0809	804387	Water
4	YBKL-EB01-082009	804388	Water
5	YBKL-FB01-082009	804389	Water
6	YBKG-GW09A-YE-0809	804638	Water
6F	YBKG-GW09A-YE-0809	804639	Water
7	YBKG-FB01-082409	804642	Water
8	YBKG-GW10A-YE-0809	804649	Water
8F	YBKG-GW10A-YE-0809	804750	Water

The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

Holding Times - All samples were prepared and analyzed within 14 days for cyanide, 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration except the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Manganese	3.38	16.9	B	6F, 8, 8F
Calcium	89.46	447.3	None	All >5X
Zinc	27.19	135.95	B	1, 1F, 2, 2F, 3, 6, 6F, 8F
Antimony	0.809	4.045	B	1, 1F, 2, 2F, 3, 3F, 6, 6F, 8, 8F
Thallium	0.129	0.645	B	1, 1F, 2, 2F, 3, 3F, 6, 6F, 8, 8F

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	Copper	13.0	65	None	All ND or >5X or already qualified
	Manganese	2.8	14	None	
	Mercury	0.070	0.35	None	
	Thallium	0.18	0.90	None	
	Zinc	4.7	23.5	B	8
YBKG-EB01-081009F	Calcium	558	2790	None	All >5X
	Magnesium	135	675	B	6F
	Sodium	464	2320	None	All ND or >5X or already qualified
	Thallium	0.18	0.90	None	
	Zinc	4.8	24	None	
YBKL-EB01-082009	Antimony	1.0	5.0	None	Already Qualified
	Thallium	0.13	0.65		
	Zinc	9.0	45		
YBLK-FB01-082009	Antimony	0.51	2.55	None	Already Qualified
	Thallium	0.13	0.65		
YBLK-FB01-082409	Antimony	0.31	1.55	None	Already Qualified
	Thallium	0.12	0.60		
	Zinc	2.5	12.5		

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike/Duplicate - The matrix spike/duplicate sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKL-GW01-CC-0809 ug/L	YBKL-GW01P-CC-0809 ug/L	RPD	Qualifier
Aluminum	12300	11600	6%	None
Arsenic	17.2	17.8	3%	None
Barium	131	130	1%	None
Beryllium	1.2	1.2	0%	None
Cadmium	0.68	0.75	10%	None
Calcium	3490	3390	3%	None
Cobalt	15.3	14.6	5%	None
Chromium	70.6	68.7	3%	None
Copper	12.0	11.9	1%	None
Iron	29900	28300	5%	None
Magnesium	1550	1470	5%	None
Manganese	55.8	53.9	3%	None
Sodium	4060	3980	2%	None
Nickel	38.3	37.1	3%	None
Lead	11.6	11.6	0%	None
Potassium	3210	3010	6%	None
Vanadium	39.2	36.2	8%	None

Compound	YBKL-GW01-CC-0809F ug/L	YBKL-GW01P-CC-0809F ug/L	RPD	Qualifier
Aluminum	62.8	200 U	NC	None
Arsenic	0.17	2.0 U	NC	None
Barium	92.5	109	16%	None
Cadmium	0.33	0.38	14%	None
Calcium	3750	3180	16%	None
Cobalt	8.4	8.1	4%	None
Chromium	1.2	1.2	0%	None
Iron	301	273	10%	None
Magnesium	476	324	38%	None
Manganese	34.9	34.4	1%	None
Sodium	4220	4100	3%	None
Nickel	18.9	19.1	1%	None
Lead	1.9	10.0 U	NC	None
Potassium	951	808	16%	None

Compound Quantitation - No discrepancies were identified.

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKL-GW01-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804382

Level (low/med): LOW Date Received: 08/22/2009

% 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	12300			P	
7440-36-0	Antimony	2.2	~~J~~	B	MS	MBL
7440-38-2	Arsenic	17.2			MS	
7440-39-3	Barium	131	J		P	
7440-41-7	Beryllium	1.2	J		P	
7440-43-9	Cadmium	0.68	J		MS	
7440-70-2	Calcium	3490	J		P	
7440-48-4	Cobalt	15.3	J		P	
7440-47-3	Chromium	70.6			P	
7440-50-8	Copper	12.0	J		P	
7439-89-6	Iron	29900			P	
7439-95-4	Magnesium	1550	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	55.8			P	
7440-23-5	Sodium	4060	J		P	
7440-02-0	Nickel	38.3	J		P	
7440-28-0	Thallium	0.40	~~J~~	B	MS	MBL
7439-92-1	Lead	11.6			P	
7440-09-7	Potassium	3210	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	39.2	J		P	
7440-66-6	Zinc	85.4		B	P	MBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: yellow Clarity Before: cloudy Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/12/09

1F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKL-GW01-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): FILTRATE Lab Sample ID: 804383

Level (low/med): LOW Date Received: 08/22/2009

% 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	62.8	J		P	
7440-36-0	Antimony	0.80	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.17	J		MS	
7440-39-3	Barium	92.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.33	J		MS	
7440-70-2	Calcium	3750	J		P	
7440-48-4	Cobalt	8.4	J		P	
7440-47-3	Chromium	1.2	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	301			P	
7439-95-4	Magnesium	476	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	34.9			P	
7440-23-5	Sodium	4220	J		P	
7440-02-0	Nickel	18.9	J		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	1.9	J		P	
7440-09-7	Potassium	951	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	37.3		B	P	MBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/12/09

2

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKL-GW01P-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804384

Level (low/med): LOW Date Received: 08/22/2009

% 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	11600			P	
7440-36-0	Antimony	1.4	~~J~~	B	MS	MBL
7440-38-2	Arsenic	17.8			MS	
7440-39-3	Barium	130	J		P	
7440-41-7	Beryllium	1.2	J		P	
7440-43-9	Cadmium	0.75	J		MS	
7440-70-2	Calcium	3390	J		P	
7440-48-4	Cobalt	14.6	J		P	
7440-47-3	Chromium	68.7			P	
7440-50-8	Copper	11.9	J		P	
7439-89-6	Iron	28300			P	
7439-95-4	Magnesium	1470	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	53.9			P	
7440-23-5	Sodium	3980	J		P	
7440-02-0	Nickel	37.1	J		P	
7440-28-0	Thallium	0.42	~~J~~	B	MS	MBL
7439-92-1	Lead	11.6			P	
7440-09-7	Potassium	3010	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	36.2	J		P	
7440-66-6	Zinc	84.9		B	P	MBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: yellow Clarity Before: cloudy Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN MW 11/12/09

2f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKL-GW01P-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): FILTRATE Lab Sample ID: 804385

Level (low/med): LOW Date Received: 08/22/2009

% 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	0.64	~~J~~	B	MS	MBL
7440-38-2	Arsenic	2.0	U		MS	
7440-39-3	Barium	109	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.38	J		MS	
7440-70-2	Calcium	3180	J		P	
7440-48-4	Cobalt	8.1	J		P	
7440-47-3	Chromium	1.2	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	273			P	
7439-95-4	Magnesium	324	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	34.4			P	
7440-23-5	Sodium	4100	J		P	
7440-02-0	Nickel	19.1	J		P	
7440-28-0	Thallium	0.19	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	808	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	36.8		B	P	MBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

hw
1/1/2009

3

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKL-GW02-CC-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804386

Level (low/med): LOW Date Received: 08/22/2009

% 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	0.44	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.47	J		MS	
7440-39-3	Barium	47.0	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.20	J		MS	
7440-70-2	Calcium	174000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.4	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	55.0	J		P	
7439-95-4	Magnesium	1710	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	15.0	U		P	
7440-23-5	Sodium	8630			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.13	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	387	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	1.7	J		P	
7440-66-6	Zinc	2.3	~~J~~	B	P	MBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

11/12/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

3f

EPA SAMPLE NO.

YBKL-GW02-CC-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): FILTRATE Lab Sample ID: 804387

Level (low/med): LOW Date Received: 08/22/2009

% 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	1.0	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.50	J		MS	
7440-39-3	Barium	43.1	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.19	J		MS	
7440-70-2	Calcium	175000			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	1.1	J		P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	200	U		P	
7439-95-4	Magnesium	1740	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	15.0	U		P	
7440-23-5	Sodium	8310			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.14	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	452	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	1.3	J		P	
7440-66-6	Zinc	20.0	U		P	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/12/09

4

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKL-EB01-082009

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804388

Level (low/med): LOW Date Received: 08/22/2009

% 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	1.0	J		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	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	200	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
7440-28-0	Thallium	0.13	J		MS
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	9.0	J		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

 NW 11/12/09

5

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKL-FB01-082009

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804389

Level (low/med): LOW Date Received: 08/22/2009

% 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	0.51	J		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	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	200	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
7440-28-0	Thallium	0.13	J		MS
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	20.0	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:

Form IA-IN NW 11/12/09

6

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW09A-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804638

Level (low/med): LOW Date Received: 08/26/2009

% 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	1640			P	
7440-36-0	Antimony	1.3	~~J~~	B	MS	MBL
7440-38-2	Arsenic	7.8			MS	
7440-39-3	Barium	21.5	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	0.27	J		MS	
7440-70-2	Calcium	35400			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	23.5			P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	2810			P	
7439-95-4	Magnesium	963	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	18.7			P	
7440-23-5	Sodium	11600			P	
7440-02-0	Nickel	2.2	J		P	
7440-28-0	Thallium	0.17	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	3680	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	8.8	J		P	
7440-66-6	Zinc	8.2	~~J~~	B	P	MBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/12/09

6F

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW09A-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): FILTRATE Lab Sample ID: 804639

Level (low/med): LOW Date Received: 08/26/2009

% 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	1.1	~~J~~	B	MS	MBL
7440-38-2	Arsenic	6.2			MS	
7440-39-3	Barium	16.3	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	26100			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	27.8			P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	200	U		P	
7439-95-4	Magnesium	438	~~J~~	B	P	EBL
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	1.4	~~J~~	B	P	MBL
7440-23-5	Sodium	12200			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.13	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	4280	J		P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	4.3	J		P	
7440-66-6	Zinc	28.0		B	P	MBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN NW 11/12/09

7

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-FB01-082409

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804642

Level (low/med): LOW Date Received: 08/26/2009

% 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	0.31	J		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	2.0	U		MS
7440-70-2	Calcium	5000	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	200	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
7440-28-0	Thallium	0.12	J		MS
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	2.5	J		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

 NW 11/12/09

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

8

EPA SAMPLE NO.

YBKG-GW10A-YE-0809

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): WATER Lab Sample ID: 804749

Level (low/med): LOW Date Received: 08/27/2009

% 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	0.88	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.92	J		MS	
7440-39-3	Barium	35.6	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	56500			P	
7440-48-4	Cobalt	50.0	U		P	
7440-47-3	Chromium	10.3			P	
7440-50-8	Copper	25.0	U		P	
7439-89-6	Iron	402			P	
7439-95-4	Magnesium	3290	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	15.5		B	P	MBL
7440-23-5	Sodium	27800			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.13	~~J~~	B	MS	MBL
7439-92-1	Lead	10.0	U		P	
7440-09-7	Potassium	18200			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	1.2	J		P	
7440-66-6	Zinc	3.0	~~J~~	B	P	EBL
57-12-5	Cyanide	10.0	U		AS	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

MW 11/12/09

8f

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-GW10A-YE-0809F

Lab Name: TestAmerica Burlington Contract: 29000

Lab Code: STLV Case No.: 29000 NRAS No.: SDG NO.: YORK28

Matrix (soil/water): FILTRATE Lab Sample ID: 804750

Level (low/med): LOW Date Received: 08/27/2009

% 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	0.72	~~J~~	B	MS	MBL
7440-38-2	Arsenic	0.72	J		MS	
7440-39-3	Barium	33.9	J		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	2.0	U		MS	
7440-70-2	Calcium	50800			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	65.0	J		P	
7439-95-4	Magnesium	3210	J		P	
7439-97-6	Mercury	0.20	U		CV	
7439-96-5	Manganese	12.5	~~J~~	B	P	MBL
7440-23-5	Sodium	28000			P	
7440-02-0	Nickel	40.0	U		P	
7440-28-0	Thallium	0.13	~~J~~	B	MS	MBL
7439-92-1	Lead	1.7	J		P	
7440-09-7	Potassium	19100			P	
7782-49-2	Selenium	35.0	U		P	
7440-62-2	Vanadium	50.0	U		P	
7440-66-6	Zinc	19.6	~~J~~	B	P	MBL

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Form IA-IN

LW 11/12/09

ENVIRONMENTAL
Data Services, Inc.

PESTICIDES/PCBs
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK28

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 12, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKL-GW01-CC-0809	804382	Water
2	YBKL-GW01P-CC-0809	804384	Water
3	YBKL-GW02-CC-0809	804386	Water
3MS	YBKL-GW02-CC-0809MS	804386MS	Water
3MSD	YBKL-GW02-CC-0809MSD	804386MSD	Water
4	YBKL-EB01-082009	804388	Water
5	YBKL-FB01-082009	804389	Water
6	YBKG-GW09A-YE-0809	804638	Water
7	YBKG-FB01-082409	804642	Water
8	YBKG-GW10A-YE-0809	804749	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Instrument performance - All 4,4'-DDT/endrin % breakdown, resolution check mixture and PEMs were within criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
1 Pest	DCB1/DCB2	34%/33%	J/UJ

Sample ID	Surrogate	%R	Qualifier
1 PCB	TCX1/TCX2/DCB1/DCB2	50%/50%/23%/22%	J/UJ
2 Pest	DCB1/DCB2	24%/23%	J/UJ
6 Pest	DCB1/DCB2	39%/38%	J/UJ

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	None - ND	-	-	-	-
YBKL-EB01-082009	None - ND	-	-	-	-
YBKL-FB01-082009	None - ND	-	-	-	-
YBKG-FB01-082409	Heptachlor Epoxide	0.019	0.095	None	All ND
	Endrin Aldehyde	0.044	0.22	None	All ND

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKL-GW01-CC-0809 ug/L	YBKL-GW01P-CC-0809 ug/L	RPD	Qualifier
Heptachlor	0.047 U	0.052	NC	None

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - Several samples exhibited results with high %D values between columns and have been flagged (P) by the laboratory and further qualified (J).

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 01SE091606-R101

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	U
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

W SSL

FORM I OTHER

MW
11/12/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW01PCC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 01SE091606-R141

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q		
319-84-6	alpha-BHC	0.047	U	UJ	SSL
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	↓	↓
76-44-8	Heptachlor	0.052	~~U~~	J	2C
309-00-2	Aldrin	0.047	U	UJ	SSL
1024-57-3	Heptachlor epoxide	0.047	U	↓	↓
959-98-8	Endosulfan I	0.047	U	↓	↓
60-57-1	Dieldrin	0.094	U	↓	↓
72-55-9	4,4'-DDE	0.094	U	↓	↓
72-20-8	Endrin	0.094	U	↓	↓
33213-65-9	Endosulfan II	0.094	U	↓	↓
72-54-8	4,4'-DDD	0.094	U	↓	↓
1031-07-8	Endosulfan sulfate	0.094	U	↓	↓
50-29-3	4,4'-DDT	0.094	U	↓	↓
72-43-5	Methoxychlor	0.47	U	↓	↓
53494-70-5	Endrin ketone	0.094	U	↓	↓
7421-93-4	Endrin aldehyde	0.094	U	↓	↓
57-74-9	Chlordane	0.47	U	↓	↓
8001-35-2	Toxaphene	4.7	U	↓	↓
5103-74-2	gamma-Chlordane	0.047	U	↓	↓
5103-71-9	alpha-Chlordane	0.047	U	↓	↓

FORM I OTHER

KW
11/12/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

W02CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 01SE091606-R151

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	U
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

hw
11/12/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

EB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 01SE091606-R181

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	U
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

KW
1/1/2009

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 01SE091606-R191

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	U
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

nw
11/12/09

6

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW09AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 17SE091029-R101

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/26/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/27/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/17/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q		
319-84-6	alpha-BHC	0.047	U	UJ	SSL
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		
76-44-8	Heptachlor	0.047	U		
309-00-2	Aldrin	0.047	U		
1024-57-3	Heptachlor epoxide	0.047	U		
959-98-8	Endosulfan I	0.047	U		
60-57-1	Dieldrin	0.094	U		
72-55-9	4,4'-DDE	0.094	U		
72-20-8	Endrin	0.094	U		
33213-65-9	Endosulfan II	0.094	U		
72-54-8	4,4'-DDD	0.094	U		
1031-07-8	Endosulfan sulfate	0.094	U		
50-29-3	4,4'-DDT	0.094	U		
72-43-5	Methoxychlor	0.47	U		
53494-70-5	Endrin ketone	0.094	U		
7421-93-4	Endrin aldehyde	0.094	U		
57-74-9	Chlordane	0.47	U		
8001-35-2	Toxaphene	4.7	U		
5103-74-2	gamma-Chlordane	0.047	U		
5103-71-9	alpha-Chlordane	0.047	U		

FORM I OTHER

MW
11/12/09

7

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01082409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 1055 (g/mL) ML Lab File ID: 17SE091029-R111

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/26/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/27/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/17/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.019	J
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.095	U
72-55-9	4,4'-DDE	0.095	U
72-20-8	Endrin	0.095	U
33213-65-9	Endosulfan II	0.095	U
72-54-8	4,4'-DDD	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
50-29-3	4,4'-DDT	0.095	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.095	U
7421-93-4	Endrin aldehyde	0.044	J
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

nw
11/12/09

8

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GW10AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804749

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 17SE091029-R091

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/27/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/30/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/17/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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
76-44-8	Heptachlor	0.047	U
309-00-2	Aldrin	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
959-98-8	Endosulfan I	0.047	U
60-57-1	Dieldrin	0.094	U
72-55-9	4,4'-DDE	0.094	U
72-20-8	Endrin	0.094	U
33213-65-9	Endosulfan II	0.094	U
72-54-8	4,4'-DDD	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
50-29-3	4,4'-DDT	0.094	U
72-43-5	Methoxychlor	0.47	U
53494-70-5	Endrin ketone	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
57-74-9	Chlordane	0.47	U
8001-35-2	Toxaphene	4.7	U
5103-74-2	gamma-Chlordane	0.047	U
5103-71-9	alpha-Chlordane	0.047	U

FORM I OTHER

lw
11/12/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

KLGW01CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 28AUG090925-R141

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	~~U~~ UJ
11104-28-2	Aroclor-1221	0.47	~~U~~
11141-16-5	Aroclor-1232	0.47	~~U~~
53469-21-9	Aroclor-1242	0.47	~~U~~
12672-29-6	Aroclor-1248	0.47	~~U~~
11097-69-1	Aroclor-1254	0.47	~~U~~
11096-82-5	Aroclor-1260	0.47	~~U~~

SSL

FORM I OTHER

NW
11/12/09

2

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

LGW01PCC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 28AUG090925-R151

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U

FORM I OTHER

WW
11/12/09

3

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

W02CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 28AUG090925-R161

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U

FORM I OTHER

MW
1/11/2009

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 4

KLEB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 28AUG090925-R191

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U

FORM I OTHER

11/12/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 5

KLFB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 28AUG090925-R201

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/22/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 08/28/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U

MW
11/12/09

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 6

GW09AYE-0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 31AUG091849-R081

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/26/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/27/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U
37324-23-5	Aroclor-1262	0.47	U
11100-14-4	Aroclor-1268	0.47	U

FORM I OTHER

MW
11/12/09

7

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

FB01-082409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 1055 (g/mL) ML Lab File ID: 31AUG091849-R091

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/26/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/27/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/01/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	0.47	U
11104-28-2------	Aroclor-1221	0.47	U
11141-16-5------	Aroclor-1232	0.47	U
53469-21-9------	Aroclor-1242	0.47	U
12672-29-6------	Aroclor-1248	0.47	U
11097-69-1------	Aroclor-1254	0.47	U
11096-82-5------	Aroclor-1260	0.47	U
37324-23-5------	Aroclor-1262	0.47	U
11100-14-4------	Aroclor-1268	0.47	U

fw
11/12/09

8

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

GGW10AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804749

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 02SE090814-R061

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/27/09

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/30/09

Concentrated Extract Volume: 10(mL) Date Analyzed: 09/02/09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.47	U
11104-28-2	Aroclor-1221	0.47	U
11141-16-5	Aroclor-1232	0.47	U
53469-21-9	Aroclor-1242	0.47	U
12672-29-6	Aroclor-1248	0.47	U
11097-69-1	Aroclor-1254	0.47	U
11096-82-5	Aroclor-1260	0.47	U

FORM I OTHER

RW
11/12/09

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS

USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK28

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 12, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKL-GW01-CC-0809	804382	Water
2	YBKL-GW01P-CC-0809	804384	Water
3	YBKL-GW02-CC-0809	804386	Water
3MS	YBKL-GW02-CC-0809MS	804386MS	Water
3MSD	YBKL-GW02-CC-0809MSD	804386MSD	Water
4	YBKL-EB01-082009	804388	Water
5	YBKL-FB01-082009	804389	Water
6	YBKG-GW09A-YE-0809	804638	Water
7	YBKG-FB01-082409	804642	Water
8	YBKG-GW10A-YE-0809	804649	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values. except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
08/30/09	Pyrene	31.9% D	None	All ND
	Butylbenzylphthalate	28.8% D		

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values except the following.

MS/MSD ID	Compound	%R/RPD	Qualifier	Affected Samples
3	3,3'-Dichlorobenzidine	0%/68%/200	J/R	3

Laboratory Control Sample - The LCS sample exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
B083009LCS	3-Nitroaniline	24%	L/UL	8
E082409LCS	2,4-Dinitrophenol	32%	L/UL	1, 2, 3, 4, 5
	4,6-Dinitro-2-methylphenol	44%		

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKG-EB01-081009	Naphthalene	0.64	3.2	None	All ND
	Caprolactam	1.1	5.5		
	Diethylphthalate	1.1	5.5		
	Di-n-butylphthalate	0.89	4.45		
	Butylbenzylphthalate	1.1	5.5		
YBKL-EB01-082009	Diethylphthalate	0.53	2.65	None	All ND
	Caprolactam	2.0	10		
YBKL-FB01-082009	Diethylphthalate	0.43	2.15	None	All ND
	Caprolactam	1.9	9.5		
YBKG-FB01-082409	Diethylphthalate	0.70	3.5	None	All ND
	Caprolactam	0.78	3.9		

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKL-GW01-CC-0809 ug/L	YBKL-GW01P-CC-0809 ug/L	RPD	Qualifier
Bis(2-ethylhexyl)phthalate	1.2	9.4 U	NC	None

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - No discrepancies were identified.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLGW01CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804382

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

NW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLGW01CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804382

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
51-28-5	2,4-Dinitrophenol	24	~~U~~ UL	BSL
132-64-9	Dibenzofuran	9.4	U	
100-02-7	4-Nitrophenol	24	U	
121-14-2	2,4-Dinitrotoluene	9.4	U	
86-73-7	Fluorene	9.4	U	
84-66-2	Diethylphthalate	9.4	U	
7005-72-3	4-Chlorophenyl-phenylether	9.4	U	
100-01-6	4-Nitroaniline	24	U	
534-52-1	4,6-Dinitro-2-methylphenol	24	~~U~~ UL	BSL
86-30-6	N-nitrosodiphenylamine (1)	9.4	U	
101-55-3	4-Bromophenyl-phenylether	9.4	U	
118-74-1	Hexachlorobenzene	9.4	U	
1912-24-9	Atrazine	9.4	U	
87-86-5	Pentachlorophenol	24	U	
85-01-8	Phenanthrene	9.4	U	
120-12-7	Anthracene	9.4	U	
86-74-8	Carbazole	9.4	U	
84-74-2	Di-n-butylphthalate	9.4	U	
206-44-0	Fluoranthene	9.4	U	
129-00-0	Pyrene	9.4	U	
85-68-7	Butylbenzylphthalate	9.4	U	
56-55-3	Benzo(a)anthracene	9.4	U	
91-94-1	3,3'-Dichlorobenzidine	9.4	U	
218-01-9	Chrysene	9.4	U	
117-81-7	bis(2-Ethylhexyl)phthalate	1.2	J	
117-84-0	Di-n-octylphthalate	9.4	U	
205-99-2	Benzo(b)fluoranthene	9.4	U	
207-08-9	Benzo(k)fluoranthene	9.4	U	
50-32-8	Benzo(a)pyrene	9.4	U	
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U	
53-70-3	Dibenz(a,h)anthracene	9.4	U	
191-24-2	Benzo(g,h,i)perylene	9.4	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKLGW01CC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804382

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	12.20	2.0	J
2.	UNKNOWN	12.86	4.3	JB
3. 17312-62-8	DECANE, 5-PROPYL-	13.55	3.3	NJ
4. 7098-22-8	TETRATETRACONTANE	13.79	2.0	NJ
5. 19218-94-1	TETRADECANE, 1-IODO-	13.83	1.9	NJ
6. 630-06-8	HEXATRIACONTANE	14.18	4.7	NJ
7. 10544-50-0	SULFUR, MOL. (S8)	14.39	3.4	NJ
8. 112-95-8	EICOSANE	14.61	5.9	NJ
9. 3891-98-3	DODECANE, 2,6,10-TRIMETHYL-	14.79	2.2	NJ
10. 6975-98-0	DECANE, 2-METHYL-	14.82	2.3	NJ
11. 54833-48-6	HEPTADECANE, 2,6,10,15-TETRA	14.98	2.6	NJ
12. 62108-23-0	DECANE, 2,5,6-TRIMETHYL-	15.04	2.7	NJ
13.	UNKNOWN ALIPHATIC COMPOUND	15.39	2.1	J
14.	UNKNOWN	16.16	5.9	JB
15.	UNKNOWN	16.46	3.6	JB
16.	UNKNOWN	17.48	7.2	JB
17.	UNKNOWN	18.58	2.3	JB
18.	UNKNOWN	19.61	3.6	JB
19.	UNKNOWN	20.71	2.7	J
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

J
JB
NJ
JB
J

FORM I SV-TIC

NW
11/12/09

2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLGW01PCC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804384

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

MW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 2

YBKLGW01PCC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804384

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
51-28-5	2,4-Dinitrophenol	24	~~U~~ UL	BSL
132-64-9	Dibenzofuran	9.4	U	
100-02-7	4-Nitrophenol	24	U	
121-14-2	2,4-Dinitrotoluene	9.4	U	
86-73-7	Fluorene	9.4	U	
84-66-2	Diethylphthalate	9.4	U	
7005-72-3	4-Chlorophenyl-phenylether	9.4	U	
100-01-6	4-Nitroaniline	24	U	
534-52-1	4,6-Dinitro-2-methylphenol	24	~~U~~ UL	BSL
86-30-6	N-nitrosodiphenylamine (1)	9.4	U	
101-55-3	4-Bromophenyl-phenylether	9.4	U	
118-74-1	Hexachlorobenzene	9.4	U	
1912-24-9	Atrazine	9.4	U	
87-86-5	Pentachlorophenol	24	U	
85-01-8	Phenanthrene	9.4	U	
120-12-7	Anthracene	9.4	U	
86-74-8	Carbazole	9.4	U	
84-74-2	Di-n-butylphthalate	9.4	U	
206-44-0	Fluoranthene	9.4	U	
129-00-0	Pyrene	9.4	U	
85-68-7	Butylbenzylphthalate	9.4	U	
56-55-3	Benzo(a)anthracene	9.4	U	
91-94-1	3,3'-Dichlorobenzidine	9.4	U	
218-01-9	Chrysene	9.4	U	
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U	
117-84-0	Di-n-octylphthalate	9.4	U	
205-99-2	Benzo(b)fluoranthene	9.4	U	
207-08-9	Benzo(k)fluoranthene	9.4	U	
50-32-8	Benzo(a)pyrene	9.4	U	
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U	
53-70-3	Dibenz(a,h)anthracene	9.4	U	
191-24-2	Benzo(g,h,i)perylene	9.4	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV

UW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO. 2

YBKLGW01PCC

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804384

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/24/09

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/30/09

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 25154-52-3	PHENOL, NONYL-	12.32	32	~~NJ~~	NJ
2.	UNKNOWN	12.87	4.3	~~JB~~	B
3. 646-31-1	TETRACOSANE	14.18	2.6	~~NJ~~	NJ
4.	UNKNOWN	14.60	4.6	~~JB~~	B
5. 13287-24-6	NONADECANE, 9-METHYL-	15.36	2.7	~~NJ~~	NJ
6.	UNKNOWN	16.19	9.4	~~JB~~	B
7.	UNKNOWN	16.43	14	~~JB~~	↓
8.	UNKNOWN	17.45	8.3	~~JB~~	↓
9.	UNKNOWN	17.70	5.4	~~JB~~	↓
10.	UNKNOWN	18.59	4.9	~~JB~~	↓
11.	UNKNOWN	19.61	5.0	~~JB~~	↓
12.	UNKNOWN	20.70	3.9	~~J~~	J
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

WW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 3

YBKLGW02

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804386

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

NW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 3

YBKLGW02

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804386

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
51-28-5	2,4-Dinitrophenol	24	~~U~~ UL	BSL
132-64-9	Dibenzofuran	9.4	U	
100-02-7	4-Nitrophenol	24	U	
121-14-2	2,4-Dinitrotoluene	9.4	U	
86-73-7	Fluorene	9.4	U	
84-66-2	Diethylphthalate	9.4	U	
7005-72-3	4-Chlorophenyl-phenylether	9.4	U	
100-01-6	4-Nitroaniline	24	~~U~~ UL	BSL
534-52-1	4,6-Dinitro-2-methylphenol	24	U	
86-30-6	N-nitrosodiphenylamine (1)	9.4	U	
101-55-3	4-Bromophenyl-phenylether	9.4	U	
118-74-1	Hexachlorobenzene	9.4	U	
1912-24-9	Atrazine	9.4	U	
87-86-5	Pentachlorophenol	24	U	
85-01-8	Phenanthrene	9.4	U	
120-12-7	Anthracene	9.4	U	
86-74-8	Carbazole	9.4	U	
84-74-2	Di-n-butylphthalate	9.4	U	
206-44-0	Fluoranthene	9.4	U	
129-00-0	Pyrene	9.4	U	
85-68-7	Butylbenzylphthalate	9.4	U	
56-55-3	Benzo(a)anthracene	9.4	U	
91-94-1	3,3'-Dichlorobenzidine	9.4	~~U~~ R	MSL
218-01-9	Chrysene	9.4	U	
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U	
117-84-0	Di-n-octylphthalate	9.4	U	
205-99-2	Benzo(b)fluoranthene	9.4	U	
207-08-9	Benzo(k)fluoranthene	9.4	U	
50-32-8	Benzo(a)pyrene	9.4	U	
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U	
53-70-3	Dibenz(a,h)anthracene	9.4	U	
191-24-2	Benzo(g,h,i)perylene	9.4	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO. 3

YBKLGW02

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804386

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 25154-52-3	PHENOL, NONYL-	12.32	2.8	~~NJ~~
2.	UNKNOWN	12.86	3.1	~~JB~~
3.	UNKNOWN	16.19	2.4	~~JB~~
4.	UNKNOWN	17.49	2.7	~~JB~~
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

NJ
B

FORM I SV-TIC

UW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 4

YBKL-EB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804388

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	2.0	J
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

KW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 4

YBKL-EB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804388

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
51-28-5	2,4-Dinitrophenol	24	~~U~~ UL	BSL
132-64-9	Dibenzofuran	9.4	U	
100-02-7	4-Nitrophenol	24	U	
121-14-2	2,4-Dinitrotoluene	9.4	U	
86-73-7	Fluorene	9.4	U	
84-66-2	Diethylphthalate	0.53	J	
7005-72-3	4-Chlorophenyl-phenylether	9.4	U	
100-01-6	4-Nitroaniline	24	U	
534-52-1	4,6-Dinitro-2-methylphenol	24	~~U~~ UL	BSL
86-30-6	N-nitrosodiphenylamine (1)	9.4	U	
101-55-3	4-Bromophenyl-phenylether	9.4	U	
118-74-1	Hexachlorobenzene	9.4	U	
1912-24-9	Atrazine	9.4	U	
87-86-5	Pentachlorophenol	24	U	
85-01-8	Phenanthrene	9.4	U	
120-12-7	Anthracene	9.4	U	
86-74-8	Carbazole	9.4	U	
84-74-2	Di-n-butylphthalate	9.4	U	
206-44-0	Fluoranthene	9.4	U	
129-00-0	Pyrene	9.4	U	
85-68-7	Butylbenzylphthalate	9.4	U	
56-55-3	Benzo(a)anthracene	9.4	U	
91-94-1	3,3'-Dichlorobenzidine	9.4	U	
218-01-9	Chrysene	9.4	U	
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U	
117-84-0	Di-n-octylphthalate	9.4	U	
205-99-2	Benzo(b)fluoranthene	9.4	U	
207-08-9	Benzo(k)fluoranthene	9.4	U	
50-32-8	Benzo(a)pyrene	9.4	U	
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U	
53-70-3	Dibenz(a,h)anthracene	9.4	U	
191-24-2	Benzo(g,h,i)perylene	9.4	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV

LW
11/12/09

4

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKL-EB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804388

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	2.84	2.0	~~NJA~~ R
2. 96-76-4	PHENOL, 2,4-BIS(1,1-DIMETHYL	10.07	4.6	NJ NJ
3.	UNKNOWN	12.46	4.9	JB B
4.	UNKNOWN	13.09	5.7	J J
5.	UNKNOWN	14.28	9.1	JB B
6.	UNKNOWN	14.66	2.6	JB
7.	UNKNOWN	15.83	12	JB
8.	UNKNOWN	16.13	6.6	JB
9.	UNKNOWN	17.16	11	JB
10.	UNKNOWN	19.27	4.9	JB
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

LW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 5

YBKL-FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804389

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	1.9	J
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 5

YBKL-FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804389

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
51-28-5	2,4-Dinitrophenol	24	~~U~~ UL	BSL
132-64-9	Dibenzofuran	9.4	U	
100-02-7	4-Nitrophenol	24	U	
121-14-2	2,4-Dinitrotoluene	9.4	U	
86-73-7	Fluorene	9.4	U	
84-66-2	Diethylphthalate	0.43	J	
7005-72-3	4-Chlorophenyl-phenylether	9.4	U	
100-01-6	4-Nitroaniline	24	~~U~~ UL	BSL
534-52-1	4,6-Dinitro-2-methylphenol	24	U	
86-30-6	N-nitrosodiphenylamine (1)	9.4	U	
101-55-3	4-Bromophenyl-phenylether	9.4	U	
118-74-1	Hexachlorobenzene	9.4	U	
1912-24-9	Atrazine	9.4	U	
87-86-5	Pentachlorophenol	24	U	
85-01-8	Phenanthrene	9.4	U	
120-12-7	Anthracene	9.4	U	
86-74-8	Carbazole	9.4	U	
84-74-2	Di-n-butylphthalate	9.4	U	
206-44-0	Fluoranthene	9.4	U	
129-00-0	Pyrene	9.4	U	
85-68-7	Butylbenzylphthalate	9.4	U	
56-55-3	Benzo(a)anthracene	9.4	U	
91-94-1	3,3'-Dichlorobenzidine	9.4	U	
218-01-9	Chrysene	9.4	U	
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U	
117-84-0	Di-n-octylphthalate	9.4	U	
205-99-2	Benzo(b)fluoranthene	9.4	U	
207-08-9	Benzo(k)fluoranthene	9.4	U	
50-32-8	Benzo(a)pyrene	9.4	U	
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U	
53-70-3	Dibenz(a,h)anthracene	9.4	U	
191-24-2	Benzo(g,h,i)perylene	9.4	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV

LW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO. 5

YBKL-FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804389

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/24/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	2.84	2.2	~~NJA~~	R
2. 96-76-4	PHENOL, 2,4-BIS(1,1-DIMETHYL	10.07	4.4	~~NJ~~	NJ
3.	UNKNOWN	12.46	5.3	~~JB~~	B
4.	UNKNOWN	13.09	5.2	~~J~~	J
5.	UNKNOWN	14.27	4.4	~~JB~~	B
6.	UNKNOWN	15.83	6.9	~~JB~~	
7.	UNKNOWN	16.12	2.9	~~JB~~	
8.	UNKNOWN	17.16	6.4	~~JB~~	
9.	UNKNOWN	19.27	2.9	~~JB~~	
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

lew
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 6

YBKGGW09AYE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804638

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/27/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	9.4	U
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	9.4	U
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.4	U

FORM I SV

11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW09AYE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804638

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/27/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.4	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.4	U
86-73-7	Fluorene	9.4	U
84-66-2	Diethylphthalate	9.4	U
7005-72-3	4-Chlorophenyl-phenylether	9.4	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.4	U
101-55-3	4-Bromophenyl-phenylether	9.4	U
118-74-1	Hexachlorobenzene	9.4	U
1912-24-9	Atrazine	9.4	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.4	U
120-12-7	Anthracene	9.4	U
86-74-8	Carbazole	9.4	U
84-74-2	Di-n-butylphthalate	9.4	U
206-44-0	Fluoranthene	9.4	U
129-00-0	Pyrene	9.4	U
85-68-7	Butylbenzylphthalate	9.4	U
56-55-3	Benzo(a)anthracene	9.4	U
91-94-1	3,3'-Dichlorobenzidine	9.4	U
218-01-9	Chrysene	9.4	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.45	J
117-84-0	Di-n-octylphthalate	9.4	U
205-99-2	Benzo(b)fluoranthene	9.4	U
207-08-9	Benzo(k)fluoranthene	9.4	U
50-32-8	Benzo(a)pyrene	9.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U
53-70-3	Dibenz(a,h)anthracene	9.4	U
191-24-2	Benzo(g,h,i)perylene	9.4	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

NW
11/12/09

6

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW09AYE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804638

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/27/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.30	32	~~NJAB~~ R
2. 134-62-3	DIETHYLTOLUAMIDE	11.03	4.0	~~NJ~~ NJ
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

MW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 7

YBKG-FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 1055 (g/mL) ML Lab File ID: 804642

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/27/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.5	U
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
98-86-2	Acetophenone	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitroso-di-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	9.5	U
87-68-3	Hexachlorobutadiene	9.5	U
105-60-2	Caprolactam	0.78	J
59-50-7	4-Chloro-3-Methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.5	U
92-52-4	1,1'-Biphenyl	9.5	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.5	U
208-96-8	Acenaphthylene	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	9.5	U

NW 4/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 7

YBKG-FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 1055 (g/mL) ML Lab File ID: 804642

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/27/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.5	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.5	U
86-73-7	Fluorene	9.5	U
84-66-2	Diethylphthalate	0.70	J
7005-72-3	4-Chlorophenyl-phenylether	9.5	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.5	U
101-55-3	4-Bromophenyl-phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
1912-24-9	Atrazine	9.5	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butylphthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
56-55-3	Benzo(a)anthracene	9.5	U
91-94-1	3,3'-Dichlorobenzidine	9.5	U
218-01-9	Chrysene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
117-84-0	Di-n-octylphthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO. 7

YBKG-FB01

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 1055 (g/mL) ML Lab File ID: 804642

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/27/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/30/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.30	35	~~NJAB~~	R
2. 96-76-4	PHENOL, 2,4-BIS(1,1-DIMETHYL	10.46	2.4	~~NJ~~	NJ
3. 134-62-3	DIETHYLTOLUAMIDE	11.04	56	~~NJ~~	NJ
4.	UNKNOWN	12.87	2.1	~~J~~	J
5.	UNKNOWN	13.47	2.1	~~J~~	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

UW
11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 8

YBKGGW10AYE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804749

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804749

Level: (low/med) LOW Date Received: 08/27/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/30/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-52-7	Benzaldehyde	9.4	U
108-95-2	Phenol	1.5	J
111-44-4	bis(2-Chloroethyl)ether	9.4	U
95-57-8	2-Chlorophenol	9.4	U
95-48-7	2-Methylphenol	9.4	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.4	U
98-86-2	Acetophenone	9.4	U
106-44-5	4-Methylphenol	9.4	U
621-64-7	N-Nitroso-di-n-propylamine	9.4	U
67-72-1	Hexachloroethane	9.4	U
98-95-3	Nitrobenzene	9.4	U
78-59-1	Isophorone	9.4	U
88-75-5	2-Nitrophenol	9.4	U
105-67-9	2,4-Dimethylphenol	9.4	U
111-91-1	bis(2-Chloroethoxy)methane	9.4	U
120-83-2	2,4-Dichlorophenol	9.4	U
91-20-3	Naphthalene	9.4	U
106-47-8	4-Chloroaniline	9.4	U
87-68-3	Hexachlorobutadiene	9.4	U
105-60-2	Caprolactam	0.85	J
59-50-7	4-Chloro-3-Methylphenol	9.4	U
91-57-6	2-Methylnaphthalene	9.4	U
77-47-4	Hexachlorocyclopentadiene	9.4	U
88-06-2	2,4,6-Trichlorophenol	9.4	U
95-95-4	2,4,5-Trichlorophenol	24	U
91-58-7	2-Chloronaphthalene	9.4	U
92-52-4	1,1'-Biphenyl	9.4	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	9.4	U
208-96-8	Acenaphthylene	9.4	U
606-20-2	2,6-Dinitrotoluene	9.4	U
99-09-2	3-Nitroaniline	24	~~U~~ UL BSV
83-32-9	Acenaphthene	9.4	U

FORM I SV

MW 11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 8

YBKGGW10AYE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804749

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804749

Level: (low/med) LOW Date Received: 08/27/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/30/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
132-64-9	Dibenzofuran	9.4	U
100-02-7	4-Nitrophenol	24	U
121-14-2	2,4-Dinitrotoluene	9.4	U
86-73-7	Fluorene	9.4	U
84-66-2	Diethylphthalate	9.4	U
7005-72-3	4-Chlorophenyl-phenylether	9.4	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	9.4	U
101-55-3	4-Bromophenyl-phenylether	9.4	U
118-74-1	Hexachlorobenzene	9.4	U
1912-24-9	Atrazine	9.4	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	9.4	U
120-12-7	Anthracene	9.4	U
86-74-8	Carbazole	9.4	U
84-74-2	Di-n-butylphthalate	9.4	U
206-44-0	Fluoranthene	9.4	U
129-00-0	Pyrene	9.4	U
85-68-7	Butylbenzylphthalate	9.4	U
56-55-3	Benzo(a)anthracene	9.4	U
91-94-1	3,3'-Dichlorobenzidine	9.4	U
218-01-9	Chrysene	9.4	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.4	U
117-84-0	Di-n-octylphthalate	9.4	U
205-99-2	Benzo(b)fluoranthene	9.4	U
207-08-9	Benzo(k)fluoranthene	9.4	U
50-32-8	Benzo(a)pyrene	9.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U
53-70-3	Dibenz(a,h)anthracene	9.4	U
191-24-2	Benzo(g,h,i)perylene	9.4	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

MW 11/12/09

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO. 8

YBKGGW10AYE

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804749

Sample wt/vol: 1060 (g/mL) ML Lab File ID: 804749

Level: (low/med) LOW Date Received: 08/27/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/30/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/05/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	2.81	3.3	~~NJAB~~	R
2.	UNKNOWN	5.19	6.4	~~JB~~	B
3. 134-62-3	DIETHYLTOLUAMIDE	10.59	12	~~NJ~~	NJ
4. 25154-52-3	PHENOL, NONYL-	11.89	33	~~NJ~~	NJ
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

MW
11/12/09

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: NWS Yorktown, Background Investigation, CTO-148 SDG #: YORK28

Client: CH2M HILL, Inc., Virginia Beach, Virginia Date: November 12, 2009

Laboratory: Test America, South Burlington, Vermont Reviewer: Nancy Weaver

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	YBKL-GW01-CC-0809	804382	Water
2	YBKL-GW01P-CC-0809	804384	Water
3	YBKL-GW02-CC-0809	804386	Water
3MS	YBKL-GW02-CC-0809MS	804386MS	Water
3MSD	YBKL-GW02-CC-0809MSD	804386MSD	Water
4	YBKL-EB01-082009	804388	Water
5	YBKL-FB01-082009	804389	Water
6	YBKL-TB01-082009	804390	Water
7	YBKG-GW09A-YE-0809	804638	Water
8	YBKG-TB01-082209	804640	Water
9	YBKG-GW10A-YE-0809	804641	Water
10	YBKG-FB01-082409	804642	Water

The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values except the following.

ICAL Date	Compound	%RSD/RRF	Qualifier	Affected Samples
08/31/09	2-Butanone	0.019 RRF	L/R	All Samples

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
09/01/09	2-Butanone	0.019 RRF	None	See ICAL

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS samples exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
YBKL-TB01-082009	None - ND	-	-	-	-
YBKG-TB01-082209	None - ND	-	-	-	-
YBKG-EB01-081009	Acetone	5.8	58	None	See FB
	Benzene	0.68	3.4	None	All ND
	Toluene	3.5	17.5		
	Ethylbenzene	0.58	2.9		
	Xylene (m,p)	2.0	10		
	Xylene (o)	0.81	4.05		
YBKG-EB01-082009	Acetone	4.1	41	B	2
	Chloroform	0.21	1.05	B	1, 2
YBKL-FB01-082009	Acetone	2.8	28	None	See EB
YBKG-FB01-082409	Chloromethane	0.34	1.70	B	7
	Acetone	9.6	96	B	7, 9

Field Duplicates - Field duplicate results are summarized below.

Compound	YBKG-GW01-CC-0809 ug/L	YBKG-GW01P-CC-0809 ug/L	RPD	Qualifier
Carbon Disulfide	0.24	0.35	37%	None

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all TICs affected by blank contamination were qualified (B).

Compound Quantitation - All criteria were met.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 1

YBKLGW01CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804382

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	5.0	U	
75-15-0	Carbon Disulfide	0.24	J	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~J~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	0.31	~~J~~ B	EBL
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

MW 11/12/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 1

YBKLGW01CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804382

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

NW 11/12/09

1

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKLGW01CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804382

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804382

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.82	0.50	~~J~~ J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

NW
11/12/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLGW01PCC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804384

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	4.8	~~J~~ B	EBL
75-15-0	Carbon Disulfide	0.35	J	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~U~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	0.33	~~J~~ B	EBL
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

NW
11/12/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLGW01PCC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804384

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW 11/12/09

2

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKLGW01PCC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804384

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804384

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.84	0.75	~~J~~ J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

11/12/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 3

YBKLGW02CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804386

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	0.59	J
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R JCL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

RW
11/12/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 3

YBKLGW02CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804386

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW 11/12/09

3

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKLGW02CC0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804386

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804386

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

MW
11/12/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLEB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804388

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 08/31/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	4.1	J
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ILL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	0.21	J
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

MW
11/12/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLEB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804388

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 08/31/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW 11/12/09

4

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKLEB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804388

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804388

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 08/31/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 287-92-3	CYCLOPENTANE	5.86	1.5	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

11/12/09

5

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLFB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804389

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 08/31/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	2.8	J
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

11/12/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 5

YBKLFB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804389

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 08/31/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

11/12/09

5

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKLFB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804389

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804389

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 08/31/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 287-92-3	CYCLOPENTANE	5.84	1.6	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

11/12/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 6

YBKLTB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804390

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804390

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

LW
11/12/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKLTB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804390

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804390

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

VW 11/12/09

6

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKLTB01082009

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804390

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804390

Level: (low/med) LOW Date Received: 08/22/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

MW
11/12/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW09AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804638

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	0.30	~~J~~ B	FBL
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	5.0	B	FBL
75-15-0	Carbon Disulfide	1.0	U	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~J~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	0.23	J	
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

FORM I VOA

MW
11/12/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW09AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804638

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

KW
11/12/09

7

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW09AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804638

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804638

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

11/12/09

8

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01082209

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804640

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804640

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R IU
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

LW
11/12/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGTB01082209

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804640

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804640

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW 1/1/2009

8

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGTB01082209

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804640

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804640

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

MW
11/12/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW10AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804641

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804641

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	1.0	U	
74-87-3	Chloromethane	1.0	U	
75-01-4	Vinyl Chloride	1.0	U	
74-83-9	Bromomethane	1.0	U	
75-00-3	Chloroethane	1.0	U	
75-69-4	Trichlorofluoromethane	1.0	U	
75-35-4	1,1-Dichloroethene	1.0	U	
76-13-1	Freon TF	1.0	U	
67-64-1	Acetone	3.9	~~J~~ B	FBL
75-15-0	Carbon Disulfide	0.26	J	
75-09-2	Methylene Chloride	1.0	U	
156-60-5	trans-1,2-Dichloroethene	1.0	U	
1634-04-4	Methyl-t-Butyl Ether	1.0	U	
75-34-3	1,1-Dichloroethane	1.0	U	
156-59-2	cis-1,2-Dichloroethene	1.0	U	
78-93-3	2-Butanone	5.0	~~U~~ R	ICL
74-97-5	Bromochloromethane	1.0	U	
67-66-3	Chloroform	0.31	J	
71-55-6	1,1,1-Trichloroethane	1.0	U	
56-23-5	Carbon Tetrachloride	1.0	U	
71-43-2	Benzene	1.0	U	
107-06-2	1,2-Dichloroethane	1.0	U	
79-01-6	Trichloroethene	1.0	U	
78-87-5	1,2-Dichloropropane	1.0	U	
75-27-4	Bromodichloromethane	1.0	U	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	
108-10-1	4-Methyl-2-pentanone	5.0	U	
108-88-3	Toluene	1.0	U	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	
79-00-5	1,1,2-Trichloroethane	1.0	U	
127-18-4	Tetrachloroethene	1.0	U	
591-78-6	2-Hexanone	5.0	U	
124-48-1	Dibromochloromethane	1.0	U	

FORM I VOA

LW
11/12/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGGW10AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804641

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804641

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

MW
11/12/09

9

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGGW10AYE0809

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804641

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804641

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

MW
11/12/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO. 10

YBKGFB01082409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804642

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.0	U
74-87-3	Chloromethane	0.34	J
75-01-4	Vinyl Chloride	1.0	U
74-83-9	Bromomethane	1.0	U
75-00-3	Chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
76-13-1	Freon TF	1.0	U
67-64-1	Acetone	9.6	
75-15-0	Carbon Disulfide	1.0	U
75-09-2	Methylene Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
1634-04-4	Methyl-t-Butyl Ether	1.0	U
75-34-3	1,1-Dichloroethane	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
78-93-3	2-Butanone	5.0	~~U~~ R ICL
74-97-5	Bromochloromethane	1.0	U
67-66-3	Chloroform	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
71-43-2	Benzene	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
79-01-6	Trichloroethene	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
75-27-4	Bromodichloromethane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
127-18-4	Tetrachloroethene	1.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	1.0	U

FORM I VOA

lw 11/12/09

10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SUBR7 SAMPLE NO.

YBKGFB01082409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804642

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylene (m,p)	1.0	U
95-47-6	Xylene (o)	1.0	U
100-42-5	Styrene	1.0	U
75-25-2	Bromoform	1.0	U
98-82-8	Isopropylbenzene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

11/12/09

10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SUBR7 SAMPLE NO.

YBKGFB01082409

Lab Name: TESTAMERICA BURLINGTON Contract: 29000

Lab Code: STLV Case No.: 29000 SAS No.: SDG No.: YORK28

Matrix: (soil/water) WATER Lab Sample ID: 804642

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 804642

Level: (low/med) LOW Date Received: 08/26/09

% Moisture: not dec. _____ Date Analyzed: 09/01/09

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 287-92-3	CYCLOPENTANE	5.84	2.1	~~NJ~~ NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

KEW
11/12/09

Appendix E
Technical Memorandum Calculation of UTL Background Values

Calculation of UTL Background Values at Naval Weapons Station Yorktown and Cheatham Annex

PREPARED FOR: Naval Weapons Station (WPNSTA) Yorktown and Cheatham Annex (CAX) Partnering Teams

PREPARED BY: CH2M HILL

DATE: December 30, 2010

Introduction

This Technical Memorandum (TM) describes the approach for calculating upper tolerance limit (UTL) background values in soil and groundwater at Naval Weapons Station (WPNSTA) Yorktown, Yorktown, Virginia and WPNSTA Yorktown Cheatham Annex (CAX), Williamsburg, Virginia. The calculated UTLs establish representative background concentrations for soil and groundwater inorganics, which can be compared to site-specific data at a particular environmental site to determine if concentrations are attributable to releases from these sites or consistent with background levels.

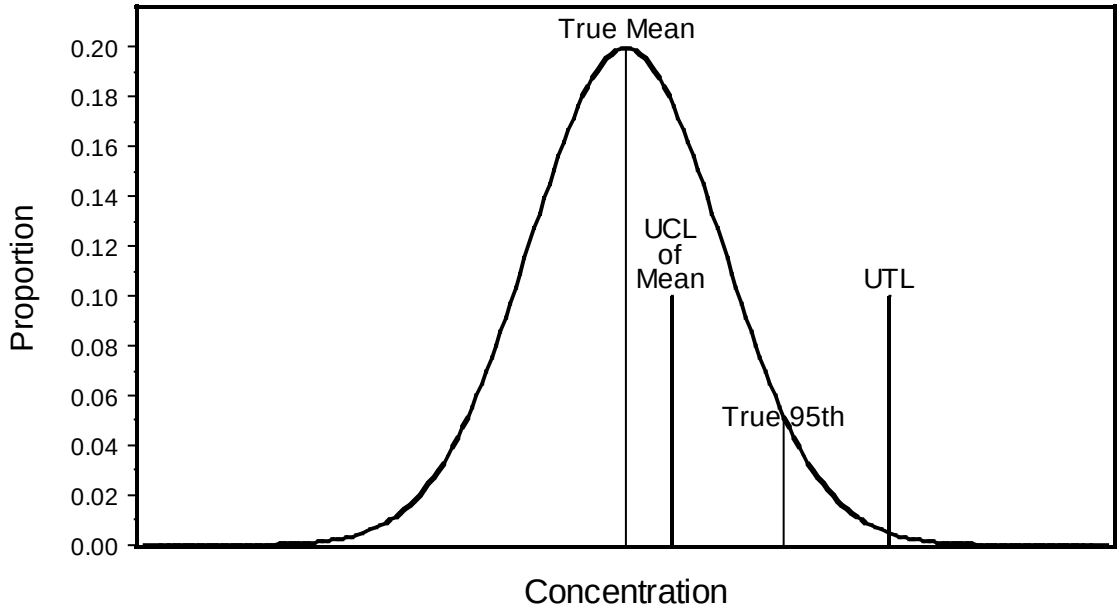
This TM was prepared under the United States Navy Comprehensive Long-term Environmental Action (CLEAN) Contract N62470-02-D-3052, for submittal to the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Division, United States Environmental Protection Agency (USEPA) Region 3, and the Virginia Department of Environmental Quality (VDEQ). The Navy, USEPA, and VDEQ work jointly as the WPNSTA Yorktown and CAX Tier I Partnering Teams.

Existing soil and groundwater background data for WPNSTA Yorktown are documented in the *Final Summary of Background Constituent Concentrations and Characterization of Biotic Community from the York River Drainage Basin, Naval Weapons Station Yorktown, Yorktown Virginia* (Baker, 1995) and for CAX in the *Final Background Investigation Naval Weapons Station Yorktown, Yorktown, Virginia, Cheatham Annex Site, Williamsburg, Virginia* (Baker, 2003). These reports document calculation of a 95 percent upper confidence limit (UCL) of the mean using the individual WPNSTA Yorktown and CAX data sets. These UCLs have been conservatively used for previous Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) release/risk management assessments and remedial actions.

In July 2009, USEPA and VDEQ approved the *Final Background Study Work Plan, Naval Weapons Station Yorktown, Yorktown, Virginia and Cheatham Annex, Williamsburg, Virginia* (CH2M HILL, 2009) to revise the representative background values in soil and groundwater. The objective of the background study was not to re-evaluate or re-visit past use of background data but rather to supplement existing data and establish a more comprehensive and representative background data set for future application to CERCLA investigations and remedial actions based on the following:

- The 95 percent UCL of the mean provides a conservative estimate of the mean and is used in determining whether the mean of a population exceeds a constant threshold. As such, it provides a statistic about the the center tendency of a given population and does not address individual concentrations or provide an estimate of the upper tail of the distribution.
- A UTL is a more appropriate background threshold value because it represents a UCL of an upper percentile, specifically for this evaluation, the 95 percent UCL of the 95th percentile. Individual values consistent with the site population will only rarely exceed the UTL. The relationship between the UTL and the UCL of the mean is visually displayed in **Insert 1** for a hypothetical normal distribution. The exact relationship of these statistics will depend on the distribution and variability of the data, how well the background sample data represents the true parent population, and the number of background samples, but the UCL of the mean always provides a central tendency estimate whereas the UTL always provides an upper tail estimate.
- The greatest possible sample size, and therefore more comprehensive background data set, can be realized by combining existing background data from WPNSTA Yorktown and CAX facilities that share a common geographic boundary and the same physiographic, hydrogeologic, and soil association characteristics, which is further demonstrated by the fact that much of the background data collected as part of the CAX study are from samples collected on WPNSTA Yorktown.
- Insufficient background groundwater data existed for the Yorktown-Eastover aquifer relevant to future CERCLA groundwater investigations. More current background data from existing and new monitoring wells for this transient media were preferred.

INSERT 1
Example Positions of UCL of the Mean and 95/95 UTL (For a Normal Distribution)



The Background Study Work Plan (CH2M HILL, 2009) included a proposed approach for calculating the soil and groundwater UTL background values. However, since statistical approaches are dependent upon the distribution of the data and does not account for other natural variations, the Navy and USEPA agreed to review the data and come to an agreement on the best statistical approach. This TM describes the agreed upon approach.

Soil Background Evaluation

Summary of Data

A summary of surface and subsurface soil background data and the applicable soil association is provided in **Table 1**. Figures from the background investigations showing these sample locations are provided in **Appendix A**. As part of the previous WPNSTA Yorktown background investigation, a total of 40 surface soil and 14 subsurface soil samples were collected from the five soil associations. The surface soil samples were collected from 0 to 6 inches below ground surface (bgs) and the subsurface soil samples were collected at varying depths (1 to 33 feet bgs). As part of the previous CAX background investigation, a total of 40 surface soil and 40 subsurface soil samples were collected from Soil Associations 1 through 4 (Soil Association 5 does not exist at CAX). The surface soil samples were collected from 0 to 6 inches bgs and the subsurface soil samples were collected from 6 to 24 inches bgs.

The data from Soil Association 5 at WPNSTA Yorktown was excluded from the combined background data set because this soil association comprises a relatively small portion of the Base. Because subsurface soils were collected at varying depths (down to 33 feet bgs) during the previous WPNSTA Yorktown background investigation, only two subsurface samples collected from WPNSTA Yorktown at the 1–3 foot bgs interval were retained for inclusion in the combined background data set to be consistent with the 40 subsurface samples collected from 6 to 24 inches bgs as part of the previous CAX background investigation. In addition, samples collected as part of the WPNSTA Yorktown background investigation along former railroad tracks were also excluded from the combined data set as they are considered overly biased of potential non-point anthropogenic sources.

The WPNSTA Yorktown and CAX background data were combined for this evaluation. Duplicate results were reconciled to a single value in the same manner that site data is to be treated, that is, choosing the maximum detect or the lower of two detection limits (when both duplicates were nondetect). To determine which soil association groups should be combined when calculating background summary statistics, analysis of variance (ANOVA) and box and whisker plots were used to establish whether significant differences exist among soil associations. The conclusions from this evaluation were to calculate separate inorganic statistics for Soil Association 1 and Soil Association 2 and combined inorganic statistics for Soil Associations 3 and 4. However, because concentrations in the four soil associations are comparable, the WPNSTA Yorktown and CAX Partnering Teams agreed to combine all soil associations when calculating the UTL background values. Subsequent ANOVA for soil depth (surface and subsurface) was performed to determine whether to combine the depths or treat them separately for each constituent and soil association partition. Initially, when less than 50 percent detects existed for a given constituent, the soil associations and depths were combined since there was insufficient data to indicate that separate partitions were necessary. However, due to significant differences in inorganic

contaminant concentrations of surface and subsurface soils, the WPNSTA Yorktown and CAX Partnering Teams agreed to compute separate inorganic surface and subsurface soil UTLs.

The WPNSTA Yorktown and CAX Partnering Teams agreed to not calculate background UTL values for organic constituents since a high degree of variability may exist with the large number of detects.

Statistical Analysis of Inorganic Compunds

Evaluation of Outliers

Soil outliers were evaluated with Dixon's and Rosner's outlier tests. Dixon's test was used when the number of samples was less than 25 and Rosner's test was used when the number of samples was 25 or more. Outlier evaluations were performed on the partitions determined to serve as separate populations via the ANOVA and graphical evaluation. Thus, each partition identified for separate calculation of summary statistics was provided a separate outlier evaluation (CH2M HILL, 2009). A list of soil mathematical outliers is provided in **Table 2**. The data included in the evaluation of outliers are plotted as normal probability plots in **Figure 1**. An "X" symbol is used for the mathematical outliers. Normal probability plots graph actual concentrations against theoretical quantiles if the true distribution of the data were normal. Thus, if the data set has strong adherence to a normal distribution, the plot resembles a straight line (with limited curvature).

An inspection of the plots in **Figure 1** reveals that many of the constituents contain data that are positively skewed as indicated by upward curvature. This is true even for the portion of the curve below suspected outliers. Both Dixon's and Rosner's test assume that the data values (aside from those being tested as potential outliers) are normally distributed. When upward curvature is present, as is the case for many constituents, the data are positively skewed which leads to more elevated results being identified as mathematical outliers than if an appropriate transformation of the data could be determined (USEPA, 2006) to render the data more normally distributed. This project chose to ignore this effect and exclude all the calculated mathematical outliers from the recommended background data set. Since the samples were believed to be obtained in appropriate background locations, this is considered an additional conservative step inthe calculation of background statistics.

Note that a higher percentage of nondetects creates increasing problems with the application of both Dixon's and Rosner's test. Due to this, constituents with a percentage of detects less than 10 percent were not evaluated by the mathematical outlier tests (but are included in **Figure 1**). A visual review of cases where less than 10 percent of results were detected did not reveal elevated results requiring exclusion from the background data set.

Background Threshold Value Calculations

The background threshold values were calculated as 95 percent/95 percent background UTLs; that is, upper bounds (with 95 percent confidence) of the background 95th percentiles. The UTL background values were calculated from the recommended background data set (values excluding mathematical outliers) following the algorithms and recommendations from ProUCL (USEPA, 2009). This included determining the distributional assumption that appeared most appropriate, or using a nonparametric (distribution free) approach when evidence for a particular distribution was not available.

The distribution possibilities included the normal, lognormal, and gamma distributions. The gamma distribution UTL algorithms were added to ProUCL in 2009. The normal approximation to the gamma distribution (proposed by Hawkins-Wixley) was used to calculate UTLs when the gamma distribution was determined to be an appropriate assumption.

As long as at least 60 percent of the results were detected, the distributions appearing most appropriate via ProUCL's distributional checks were used to calculate the UTL. For such cases, when data included some nondetects the ProUCL algorithms sought to apply maximum-likelihood-estimate (MLE) or regression on order statistics (ROS) techniques to estimate the mean and standard deviation parameters used in the calculation of the UTLs. When a UTL estimated using MLE or ROS techniques was possible within ProUCL's algorithms, that approach was preferred over one using alternate proxy values (e.g., detection limit divided by 2).

When all results were detected, but no discernable distribution was available, a nonparametric UTL, based on ranks of the data, was chosen. Another nonparametric approach provided in ProUCL is the Kaplan-Meier (KM) method. As applied in ProUCL, this approach estimates the mean and standard deviation for left-censored data sets (those with nondetects). When at least four detects were available the KM method was applied both to cases when fewer than 60 percent of the results were detected and when the percent detects was greater than 60 percent (but less than 100 percent) and no discernable distribution was available. When fewer than four detects were available (i.e., antimony, cadmium, and silver in surface soil and beryllium, cyanide, mercury, selenium, and silver in subsurface soil), no UTL background value was calculated.

Calculated UTL Background Values for Inorganics

Upon agreement of the statistical analysis approach outlined above, final surface and subsurface soil background concentrations (as well as final groundwater background concentrations) will be presented in a Background Study Report, to be submitted under separate cover from this TM. However the preliminary soil UTL background vaules are presented in **Table 3** for constituents detected in background samples. For cases with fewer than four detects, no calculated UTL background value is provided. Other summary statistics are also included in **Table 3** including the mean and standard deviation of detected results, minimums and maximums of detected values, and frequency of detection.

Groundwater Background Evaluation

Summary of Data

Existing background groundwater data for the Cornwallis Cave and Yorktown-Eastover aquifers were available from both WPNSTA Yorktown and CAX previous background studies. However, this data set provided only six samples from the Yorktown-Eastover aquifer, which was insufficient to calculate UTL background values. In addition, the chemical concentrations in groundwater are dynamic with fluctuations in concentrations that may result from attenuation of constituents, changes in water level evelvations, and/or groundwater parameters (e.g., pH). Therefore, as approved by the USEPA and VDEQ, a more current data set for evaluation of background groundwater quality was collected in 2009.

A summary of groundwater background data is provided in **Table 4**. Figures depicting the monitoring well sampling locations are provided in **Appendix B**. A total of 15 groundwater samples were collected from the Cornwallis Cave aquifer and a total of 13 groundwater samples were collected from the Yorktown-Eastover aquifer.

Groundwater samples were analyzed for organics [volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and explosives], and inorganics. The WPNSTA Yorktown and CAX Partnering Teams agreed to calculate background UTL values for the inorganic constituents, but not the organic concentrations since a high degree of variability may exist with the large number of detects.

Statistical Analysis of Inorganic Compounds

Evaluation of Outliers

Groundwater outliers were evaluated with Rosner's outlier test. This test can be used when the number of samples is 25 or more, which was the case for each of the groundwater constituents. A list of groundwater mathematical outliers is provided in **Table 5**. The data included in the evaluation of outliers are plotted as normal probability plots in **Figure 2**. An "X" symbol is used for the mathematical outliers. Normal probability plots graph actual concentrations against theoretical quantiles if the true distribution of the data were normal. Thus, if the data set has strong adherence to a normal distribution, the plot resembles a straight line (with limited curvature).

An inspection of the plots in **Figure 2** reveals that many of the constituents contain data that is positively skewed as indicated by upward curvature. This is true even for the portion of the curve below suspected outliers. Rosner's test assumes that the data values (aside from those being tested as potential outliers) are normally distributed. When upward curvature is present, as is the case for many constituents, the data are positively skewed which leads to more elevated results being identified as mathematical outliers than if an appropriate transformation of the data could be determined (USEPA, 2006) to render the data more normally distributed. This project chose to ignore this effect and exclude all the calculated mathematical outliers from the recommended background data set. Since the samples were obtained in appropriate background locations, this is considered an additional conservative step in the calculations of background statistics.

Note that a higher percentage of nondetects creates increasing problems with the application of Rosner's test. Due to this, constituents with a percentage of detects less than 10 percent were not evaluated by Rosner's test (but are included in **Figure 2**). A visual review of cases where less than 10 percent of results were detected did not reveal elevated results requiring exclusion from the background data set.

Background Threshold Value Calculations

The background threshold values were calculated as 95 percent/95 percent background UTLs; that is, upper bounds (with 95 percent confidence) of the background 95th percentiles. The UTL background values were calculated from the recommended background data set (values excluding mathematical outliers) following the algorithms and recommendations from ProUCL (USEPA, 2009). This included determining the

distributional assumption that appeared most appropriate, or using a nonparametric (distribution free) approach when evidence for a particular distribution was not available.

The distribution possibilities included the normal, lognormal, and gamma distributions. The gamma distribution UTL algorithms were added to ProUCL in 2009. The normal approximation to the gamma distribution (proposed by Hawkins-Wixley) was used to calculate UTLs when the gamma distribution was determined to be an appropriate assumption.

As long as at least 60 percent of the results were detected, the distributions appearing most appropriate via ProUCL's distributional checks were used to calculate the UTL. For such cases, when data included some nondetects, the ProUCL algorithms sought to apply MLE or ROS techniques to estimate the mean and standard deviation parameters used in the calculation of the UTLs. When a UTL estimated using MLE or ROS techniques was possible within ProUCL's algorithms, that approach was preferred over one using alternate proxy values (e.g., detection limit divided by 2).

When all results were detected, but no discernable distribution was available, a nonparametric UTL, based on ranks of the data, was chosen. Another nonparametric approach provided in ProUCL is the KM method. As applied in ProUCL, this approach estimates the mean and standard deviation for left-censored data sets (those with nondetects). When at least four detects were available the KM method was applied both to cases when fewer than 60 percent of the results were detected and when the percent detects was greater than 60 percent (but less than 100 percent) and no discernable distribution was available. When fewer than four detects were available (i.e., dissolved aluminum, antimony, cobalt, copper, lead, mercury, nickel, selenium, and vanadium and total antimony, copper, lead, and mercury in the combined data sets from the Corwallis Cave and Yorktown-Eastover aquifers), no UTL was calculated.

Calculated UTL Background Values for Inorganics

Upon agreement of the statistical analysis approach outlined above, final groundwater background concentrations (as well as final surface and subsurface soil background concentrations) will be presented in a Background Study Report, to be submitted under separate cover from this TM. However the preliminary groundwater UTL background values are presented in **Table 6** for constituents detected in background samples. For cases with fewer than four detects, no calculated UTL background value is provided. Other summary statistics are also included in **Table 6** including the mean and standard deviation of detected results, minimums and maximums of detected values, and frequency of detection.

References

Baker Environmental, Inc. (Baker). 1995. *Final Summary of Background Constituent Concentrations and Characterization of Biotic Community from the York River Drainage Basin, Naval Weapons Station Yorktown, Yorktown Virginia.* July.

Baker. 2003. *Final Background Investigation Naval Weapons Station Yorktown, Yorktown, Virginia, Cheatham Annex Site, Williamsburg, Virginia.* September.

CH2M HILL. 2009. *Final Background Study Work Plan Naval Weapons Station Yorktown, Yorktown, Virginia and Cheatham Annex, Williamsburg, Virginia*. July.

Brockman et al. 1997. Geohydrology of the Shallow Aquifer System, Naval Weapons Station Yorktown, Yorktown, Virginia. U.S. Geological Survey Water-Resources Investigations Report 97-4188.

United States Environmental Protection Agency (USEPA). 2006. *Data Quality Assessment: Statistical Methods for Practitioners.* Office of Environmental Information, Washington, D.C.

USEPA. 2009. *ProUCL Version 4.00.04 Technical Guide (Draft),* Office of Research and Development.

Tables

Table 1
Summary of Background Soil Data Set

Summary of Samples Included in the Soil Background Data Set

WPNSTA Yorktown

Soil Association		Number of Samples	Analysis
	Surface Soils (0-6")		
#1	Bohicket, Johnston, Axis	5	inorganics
#2	Dogue, Pamunkey, Uchee	10	
#3	Emporia, Kempsville, Craven-Uchee Complex	10	
#4	Slagle, Emporia, Emporia Complex	11	
	Subsurface Soil Samples (1-3')		
#2	Dogue, Pamunkey, Uchee	1	Inorganics
#3	Emporia, Kempsville, Craven-Uchee Complex	1	

CAX

Soil Association		Number of Samples	Analysis
	CAX Surface Soils (0-6")		
#1	Bohicket, Johnston, Axis	10	SVOCs, pesticides/PCBs, inorganics
#2	Dogue, Pamunkey, Uchee	10	
#3	Emporia, Slagle, Craven-Uchee	10	
#4	Kempsville, Emporia, Craven-Unchee Complex, Emporia Complex	10	
	CAX Subsurface Soil Samples (6-24")		
#1	Bohicket, Johnston, Axis	10	SVOCs, pesticides/PCBs, inorganics, TOC
#2	Dogue, Pamunkey, Uchee	10	
#3	Emporia, Slagle, Craven-Uchee	10	
#4	Kempsville, Emporia, Craven-Unchee Complex, Emporia Complex	10	

Summary of Samples Excluded from the Soil Background Data Set

WPNSTA Yorktown

		Number of Samples	Analysis
	Railroad Background Samples (0-6", Collected proximal to Main Road)	12	VOCs, SVOCs, pest/PCBs, explosives, inorganics
Soil Assocation			
	Surface Soils		
#5	Slagle, Bethera, Craven-Uchee	4	Inorganics
	Subsurface Soil Samples (collected at varying depths 3-33')		
#1	Bohicket, Johnston, Axis	3	inorganics
#2	Dogue, Pamunkey, Uchee	2	
#3	Emporia, Kempsville, Craven-Uchee Complex	1	
#4	Slagle, Emporia, Emporia Complex	3	
#5	Slagle, Bethera, Craven-Uchee	3	

Table 2: Calculated Soil Outliers (Assuming Normal Distribution)

Sample ID	Depth	Parameter	Units	Qualifier	Result
BG1-SB03-01	SB	Aluminum	mg/kg		18400
BG1-SB03-01	SB	Arsenic	mg/kg		10.4
BG1-SB09-01	SB	Arsenic	mg/kg		12.5
BG2-SB01-01D	SB	Arsenic	mg/kg		15.9
BG4-SB01-01	SB	Arsenic	mg/kg		18.6
BG4-SB10-01	SB	Arsenic	mg/kg		13.8
BG1-SB06-01	SB	Calcium	mg/kg		32200
BG2-SB06-01	SB	Calcium	mg/kg		162000
BG1-SB03-01	SB	Chromium	mg/kg		37.5
BG2-SB05-01	SB	Cobalt	mg/kg	J	7.3
BG3-SB09-01	SB	Cobalt	mg/kg	J	8.1
BG4-SB09-01	SB	Cobalt	mg/kg	J	7
BG1-SB03-01	SB	Copper	mg/kg	J	9.6
BG1-SB09-01	SB	Copper	mg/kg	J	9
BG2-SB06-01	SB	Copper	mg/kg	J	5
BG1-SB03-01	SB	Lead	mg/kg		23.3
BG1-SB08-01	SB	Lead	mg/kg		83.7
BG1-SB09-01	SB	Lead	mg/kg		35.3
BGSB05-01	SB	Lead	mg/kg	J	13.7
BG1-SB03-01	SB	Magnesium	mg/kg		4630
BG1-SB04-01	SB	Magnesium	mg/kg		1810
BG1-SB09-01	SB	Magnesium	mg/kg		3340
BG2-SB02-01	SB	Magnesium	mg/kg		1420
BG2-SB06-01	SB	Magnesium	mg/kg		3340
BG3-SB09-01	SB	Manganese	mg/kg		208
BG4-SB01-01D	SB	Manganese	mg/kg		195
BGSB04-01D	SB	Manganese	mg/kg	J	254
BG1-SB03-01	SB	Potassium	mg/kg		4240
BG1-SB04-01	SB	Potassium	mg/kg	J	2370
BG1-SB06-01	SB	Potassium	mg/kg	J	1970
BG1-SB09-01	SB	Potassium	mg/kg		2790
BG2-SB06-01	SB	Potassium	mg/kg		2100
BG1-SB01-01	SB	Selenium	mg/kg	B	0.8
BG1-SB04-01	SB	Selenium	mg/kg	B	0.9
BG1-SB05-01	SB	Selenium	mg/kg	L	1.9
BG2-SB01-01D	SB	Selenium	mg/kg	J	1.2
BG2-SB08-01	SB	Selenium	mg/kg	J	0.87
BG1-SB03-01	SB	Sodium	mg/kg		9810
BG1-SB06-01	SB	Sodium	mg/kg		2560
BG1-SB08-01	SB	Sodium	mg/kg		1700
BG1-SB09-01	SB	Sodium	mg/kg		10400
BG1-SB10-01	SB	Sodium	mg/kg		2360
BG1-SB03-01	SB	Vanadium	mg/kg		53.8
BG1-SB03-01	SB	Zinc	mg/kg		52.9
BG1-SB09-01	SB	Zinc	mg/kg		34.3
BG2-SB01-01D	SB	Zinc	mg/kg		29.5
BG2-SB06-01	SB	Zinc	mg/kg		30.8
BG4-SB01-01	SB	Zinc	mg/kg		32

Table 2: Calculated Soil Outliers (Assuming Normal Distribution)

Sample ID	Depth	Parameter	Units	Qualifier	Result
BG1-SS03-00	SS	Aluminum	mg/kg		16500
BGS21	SS	Aluminum	mg/kg		15600
BGS28	SS	Aluminum	mg/kg		19200
BG1-SS03-00	SS	Arsenic	mg/kg		9.9
BG1-SS06-00	SS	Arsenic	mg/kg		8.3
BG4-SS01-00D	SS	Arsenic	mg/kg		11.7
BGS21	SS	Arsenic	mg/kg		63.9
BGS20D	SS	Barium	mg/kg		75.7
BGS28	SS	Barium	mg/kg		80.2
BGS38	SS	Barium	mg/kg		76.3
BG1-SS03-00	SS	Beryllium	mg/kg	J	1.1
BGS38	SS	Beryllium	mg/kg	J	0.93
BG1-SS04-00	SS	Calcium	mg/kg		2950
BG1-SS05-00D	SS	Calcium	mg/kg		3500
BG1-SS06-00	SS	Calcium	mg/kg		33500
BG2-SS06-00	SS	Calcium	mg/kg		3320
BGS04	SS	Calcium	mg/kg		7820
BG1-SS03-00	SS	Chromium	mg/kg		43.2
BG1-SS09-00	SS	Chromium	mg/kg		26.8
BG1-SS03-00	SS	Copper	mg/kg		22.1
BG1-SS06-00	SS	Copper	mg/kg	J	8.8
BG1-SS09-00	SS	Copper	mg/kg	J	9.8
BGS04	SS	Copper	mg/kg		24.4
BG1-SS03-00	SS	Lead	mg/kg		136
BG1-SS09-00	SS	Lead	mg/kg		34.7
BGS07	SS	Lead	mg/kg		43.1
BGS22	SS	Lead	mg/kg	L	25.3
BGS28	SS	Lead	mg/kg	L	38.7
BG1-SS03-00	SS	Magnesium	mg/kg		6770
BG1-SS04-00	SS	Magnesium	mg/kg		2050
BG1-SS09-00	SS	Magnesium	mg/kg		5290
BGS34D	SS	Magnesium	mg/kg		1610
BG4-SS10-00	SS	Manganese	mg/kg		435
BGS03	SS	Manganese	mg/kg		491
BGS38	SS	Manganese	mg/kg		413
BG1-SS03-00	SS	Nickel	mg/kg	J	14.2
BG1-SS03-00	SS	Potassium	mg/kg		4560
BG1-SS04-00	SS	Potassium	mg/kg	J	1420
BG1-SS09-00	SS	Potassium	mg/kg		3510
BG2-SS06-00	SS	Potassium	mg/kg	L	1210
BGS34D	SS	Potassium	mg/kg	J	1640
BG1-SS04-00	SS	Selenium	mg/kg	J	1.5
BG1-SS05-00D	SS	Selenium	mg/kg	J	1.2
BG1-SS06-00	SS	Selenium	mg/kg	J	2.7
BG4-SS01-00D	SS	Selenium	mg/kg	L	1.4
BG4-SS10-00	SS	Selenium	mg/kg	K	1.2
BG1-SS03-00	SS	Sodium	mg/kg		21300
BG1-SS04-00	SS	Sodium	mg/kg		2610

Table 2: Calculated Soil Outliers (Assuming Normal Distribution)

Sample ID	Depth	Parameter	Units	Qualifier	Result
BG1-SS06-00	SS	Sodium	mg/kg		2970
BG1-SS09-00	SS	Sodium	mg/kg		20500
BG1-SS10-00	SS	Sodium	mg/kg		4140
BG1-SS03-00	SS	Vanadium	mg/kg		50.3
BG1-SS09-00	SS	Vanadium	mg/kg		41.2
BGS28	SS	Vanadium	mg/kg		34.7
BG1-SS03-00	SS	Zinc	mg/kg		113
BG1-SS08-00	SS	Zinc	mg/kg		41.2
BG1-SS09-00	SS	Zinc	mg/kg		47.8
BGS04	SS	Zinc	mg/kg		37.5
BGS28	SS	Zinc	mg/kg		48.4

Table 3: Summary Statistics for Soil Background Data

Soil Association	Depth	Chemical Group	Parameter	Calculated 95/95 UTL	UTL Basis	Number of Detects	Number of Analyses	Frequency of Detects	Percent Detects	Units	Minimum Detected Value	Maximum Detected Value	Minimum DL for Non-detects	Maximum DL for Non-detects	Location of Maximum Detected Concentration	Mean Value Detects	Standard Deviation Detects
Soil Associations 1, 2, and 3/4	SB	Total Metals	Aluminum	13000	Normal UTL	41	41	41/41	100	mg/kg	238	12600	NA	NA	BG2-SB04-01	6140	3230
Soil Associations 1, 2, and 3/4	SB	Total Metals	Arsenic	5.54	Kaplan Meier UTL	17	37	17/37	46	mg/kg	0.7	6.8	0.28	2.5	BG2-SB06-01	3.38	1.57
Soil Associations 1, 2, and 3/4	SB	Total Metals	Barium	84.5	Gamma UTL	42	42	42/42	100	mg/kg	0.9	58	NA	NA	BG4-SB04-01	27.1	14.6
Soil Associations 1, 2, and 3/4	SB	Total Metals	Beryllium	NA	Fewer than Four Detects	2	42	2/42	5	mg/kg	0.49	0.52	0.1	1.2	BGSB05-01	0.505	0.0212
Soil Associations 1, 2, and 3/4	SB	Total Metals	Calcium	2380	Lognormal UTL	40	40	40/40	100	mg/kg	56.4	1810	NA	NA	BG2-SB01-01	502	487
Soil Associations 1, 2, and 3/4	SB	Total Metals	Chromium	33.7	Gamma UTL	40	41	40/41	98	mg/kg	2.4	26.4	3.5	3.5	BG2-SB02-01	10.4	6.55
Soil Associations 1, 2, and 3/4	SB	Total Metals	Cobalt	5.18	Normal UTL MLE	33	39	33/39	85	mg/kg	0.2	6	0.16	1.4	BG4-SB10-01	2.27	1.28
Soil Associations 1, 2, and 3/4	SB	Total Metals	Copper	3.17	Kaplan Meier UTL	21	39	21/39	54	mg/kg	0.71	3.2	0.43	3.9	BG4-SB01-01	1.85	0.86
Soil Associations 1, 2, and 3/4	SB	Total Metals	Cyanide	NA	Fewer than Four Detects	1	42	1/42	2	mg/kg	2.7	2.7	0.04	0.59	BG1-SB03-01	2.7	NA
Soil Associations 1, 2, and 3/4	SB	Total Metals	Iron	32000	Gamma UTL	42	42	42/42	100	mg/kg	1280	30000	NA	NA	BG2-SB01-01	10200	7050
Soil Associations 1, 2, and 3/4	SB	Total Metals	Lead	8.79	Normal UTL	38	38	38/38	100	mg/kg	2.6	8.3	NA	NA	BG2-SB10-01	5.67	1.46
Soil Associations 1, 2, and 3/4	SB	Total Metals	Magnesium	1120	Gamma UTL	37	37	37/37	100	mg/kg	115	1350	NA	NA	BG1-SB06-01	433	264
Soil Associations 1, 2, and 3/4	SB	Total Metals	Manganese	176	Gamma UTL	39	39	39/39	100	mg/kg	2.9	154	NA	NA	BG4-SB09-01	47.2	39.4
Soil Associations 1, 2, and 3/4	SB	Total Metals	Mercury	NA	Fewer than Four Detects	2	42	2/42	5	mg/kg	0.067	0.14	0.036	0.12	BG4-SB03-01	0.104	0.0516
Soil Associations 1, 2, and 3/4	SB	Total Metals	Nickel	17.6	Gamma UTL	39	42	39/42	93	mg/kg	0.51	11	0.99	3.8	BG1-SB03-01	3.9	2.41
Soil Associations 1, 2, and 3/4	SB	Total Metals	Potassium	901	Kaplan Meier UTL	20	37	20/37	54	mg/kg	276	1190	78.8	259	BG1-SB05-01	519	274
Soil Associations 1, 2, and 3/4	SB	Total Metals	Selenium	NA	Fewer than Four Detects	3	39	3/39	8	mg/kg	0.26	0.64	0.57	1.8	BG4-SB10-01	0.427	0.194
Soil Associations 1, 2, and 3/4	SB	Total Metals	Silver	NA	Fewer than Four Detects	1	42	1/42	2	mg/kg	1.1	1.1	0.1	0.88	BGSB05-01	1.1	NA
Soil Associations 1, 2, and 3/4	SB	Total Metals	Sodium	811	Kaplan Meier UTL	4	37	4/37	11	mg/kg	58.5	1560	135	973	BG1-SB04-01	754	778
Soil Associations 1, 2, and 3/4	SB	Total Metals	Vanadium	48.3	Gamma UTL	41	41	41/41	100	mg/kg	2.1	37.8	NA	NA	BG1-SB09-01	16.2	9.84
Soil Associations 1, 2, and 3/4	SB	Total Metals	Zinc	28	Gamma UTL	34	37	34/37	92	mg/kg	4.5	20.9	2.5	4	BG1-SB02-01	10.7	4.84
Soil Associations 1, 2, and 3/4	SS	Total Metals	Aluminum	12200	Gamma UTL	72	72	72/72	100	mg/kg	235	12900	NA	NA	BGS20	4780	2660
Soil Associations 1, 2, and 3/4	SS	Total Metals	Antimony	NA	Fewer than Four Detects	3	73	3/73	4	mg/kg	1	11	0.33	10.6	BGS35	7.07	5.33
Soil Associations 1, 2, and 3/4	SS	Total Metals	Arsenic	6.36	Lognormal UTL	54	71	54/71	76	mg/kg	0.094	6	0.23	3.1	BG1-SS09-00	1.99	1.41
Soil Associations 1, 2, and 3/4	SS	Total Metals	Barium	52.9	Normal UTL MLE	69	72	69/72	96	mg/kg	0.75	62	16.1	32.7	BGS04	23.9	12.1
Soil Associations 1, 2, and 3/4	SS	Total Metals	Beryllium	0.587	Kaplan Meier UTL	30	73	30/73	41	mg/kg	0.23	0.79	0.079	0.74	BG4-SS10-00	0.433	0.146
Soil Associations 1, 2, and 3/4	SS	Total Metals	Cadmium	NA	Fewer than Four Detects	3	75	3/75	4	mg/kg	1.2	1.5	0.077	1.4	BGS30	1.33	0.153
Soil Associations 1, 2, and 3/4	SS	Total Metals	Calcium	2290	Gamma UTL	68	70	68/70	97	mg/kg	45.8	2940	258	319	BGS20	643	651
Soil Associations 1, 2, and 3/4	SS	Total Metals	Chromium	18.2	Lognormal UTL	72	73	72/73	99	mg/kg	1.8	18.3	2.8	2.8	BGS34	6.96	4.02
Soil Associations 1, 2, and 3/4	SS	Total Metals	Cobalt	9.93	Gamma UTL	66	75	66/75	88	mg/kg	0.2	6.7	0.13	2.3	BG4-SS10-00	2.4	1.5
Soil Associations 1, 2, and 3/4	SS	Total Metals	Copper	4.25	Kaplan Meier UTL	50	71	50/71	70	mg/kg	0.41	5.3	0.83	3.5	BGS28	2.27	1.19
Soil Associations 1, 2, and 3/4	SS	Total Metals	Iron	19900	Nonparametric UTL	75	75	75/75	100	mg/kg	1470	20300	NA	NA	BG4-SS01-00	6430	4650
Soil Associations 1, 2, and 3/4	SS	Total Metals	Lead	17.4	Normal UTL	70	70	70/70	100	mg/kg	1.1	22.7	NA	NA	BGS04	10.2	3.61
Soil Associations 1, 2, and 3/4	SS	Total Metals	Magnesium	1070	Lognormal UTL	67	71	67/71	94	mg/kg	112	1200	92.1	292	BG1-SS05-00	394	278
Soil Associations 1, 2, and 3/4	SS	Total Metals	Manganese	324	Gamma UTL	72	72	72/72	100	mg/kg	6.9	340	NA	NA	BGS20	96.1	81.6
Soil Associations 1, 2, and 3/4	SS	Total Metals	Mercury	0.111	Kaplan Meier UTL	7	75	7/75	9	mg/kg	0.051	0.24	0.037	0.16	BG1-SS03-00	0.119	0.0658
Soil Associations 1, 2, and 3/4	SS	Total Metals	Nickel	9.52	Normal UTL MLE	63	74	63/74	85	mg/kg	0.37	11.9	1	4.1	BGS20	4.6	2.45
Soil Associations 1, 2, and 3/4	SS	Total Metals	Potassium	708	Kaplan Meier UTL	22	70	22/70	31	mg/kg	245	911	86.8	449	BG1-SS06-00	560	201
Soil Associations 1, 2, and 3/4	SS	Total Metals	Selenium	0.51	Kaplan Meier UTL	22	70	22/70	31	mg/kg	0.27	0.69	0.22	2.2	BG2-SS02-00	0.384	0.117
Soil Associations 1, 2, and 3/4	SS	Total Metals	Silver	NA	Fewer than Four Detects	3	75	3/75	4	mg/kg	0.16	2.1	0.096	1.1	BGS21	1.09	0.973
Soil Associations 1, 2, and 3/4	SS	Total Metals	Sodium	521	Kaplan Meier UTL	36	70	36/70	51	mg/kg	17.4	1960	73.6	568	BG1-SS05-00	93.3	321
Soil Associations 1, 2, and 3/4	SS	Total Metals	Vanadium	27.9	Gamma UTL	72	72	72/72	100	mg/kg	2.4	29.8	NA	NA	BGS27	12	6.35
Soil Associations 1, 2, and 3/4	SS	Total Metals	Zinc	26.5	Gamma UTL	70	70	70/70	100	mg/kg	3.6	30	NA	NA	BG1-SS06-00	12.1	5.98

Table 4
Summary of Background Study Wells Sampled
(corresponds to maps in Appendix B)

Aquifer	Well ID
Cornwallis Cave	YBKL-GW02[1]
	YBKL-GW01[1]
	YBKG-GW15-3[2]
	YBKG-GW08A[3]
	YBKG-GW14-3[2]
	YBKG-GW07A[4]
	YBKG-GW07[4]
	YBKG-GW01[4]
	YBKG-GW06A[4]
	YBKG-GW12-3[2]
	YBKG-GW13-3[2]
	YBKG-GW03A[4]
	YBKG-GW05A[4]
	YBKG-GW11-3[2]
	YBKG-GW10[5]
Yorktown-Eastover	YBKG-GW15-1[2]
	YBKG-GW15-2[2]
	YBKG-GW14-1[2]
	YBKG-GW14-2[2]
	YBKG-GW01A[4]
	YBKG-GW12-1[2]
	YBKG-GW12-2[2]
	YBKG-GW13-1[2]
	YBKG-GW13-2[2]
	YBKG-GW11-1[2]
	YBKG-GW11-2[2]
	YBKG-GW09A[5]
	YBKG-GW10A[5]

[1]Installed as part of the previous CAX Background Study (Baker, 2003).

[2]Installed as part of the USGS Shallow Aquifer Study of Naval Weapons Station Yorktown (Brockman et. al, 1997).

[3]Installed as part of the previous Yorktown Background Study (Baker, 1995). Note: This well replaces USGS well 58G58 (N4) - the intended sampling location; however, the field crew discovered that USGS well had been destroyed by past vehicular activity.

[4]Installed as part of the previous Yorktown Background Study (Baker, 1995).

[5]New well installed as part of groundwater sample collection (CH2M HILL, 2009).

Table 5: Calculated Groundwater Outliers (Assuming Normal Distribution)

Sample ID	Parameter	Units	Qualifier	Result
YBKG-GW01A-YE-0809	Aluminum	ug/L	K	30700
YBKG-GW05A-CC-0809	Aluminum	ug/L	K	2080
YBKG-GW07-CC-0809	Aluminum	ug/L		8140
YBKG-GW10-CC-0809	Aluminum	ug/L	K	2650
YBKG-GW15P-3-CC-0809	Aluminum	ug/L		1720
YBKG-GW01A-YE-0809	Aluminum, Dissolved	ug/L	K	869
YBKG-GW01A-YE-0809	Arsenic	ug/L		15.4
YBKG-GW05A-CC-0809	Arsenic	ug/L		2.5
YBKG-GW07-CC-0809	Arsenic	ug/L		8.9
YBKG-GW08A-CC-0809	Arsenic	ug/L		4.3
YBKG-GW09A-YE-0809	Arsenic	ug/L		7.8
YBKG-GW08A-CC-0809	Arsenic, Dissolved	ug/L		2.5
YBKG-GW09A-YE-0809	Arsenic, Dissolved	ug/L		6.2
YBKG-GW15-1-YE-0809	Arsenic, Dissolved	ug/L	J	1.6
YBKG-GW01A-YE-0809	Barium	ug/L	J	178
YBKG-GW07A-CC-0809	Barium	ug/L		231
YBKG-GW01A-YE-0809	Chloroform	ug/L		3.8
YBKG-GW01A-YE-0809	Chromium	ug/L		96.8
YBKG-GW01P-CC-0809	Chromium	ug/L		103
YBKG-GW06A-CC-0809	Chromium	ug/L		22.3
YBKG-GW07-CC-0809	Chromium	ug/L		35.1
YBKG-GW09A-YE-0809	Chromium	ug/L		23.5
YBKG-GW09A-YE-0809	Chromium, Dissolved	ug/L		27.8
YBKG-GW14-1-YE-0809	Copper	ug/L		117
YBKG-GW01A-YE-0809	Iron	ug/L	K	62100
YBKG-GW05A-CC-0809	Iron	ug/L	K	4950
YBKG-GW07-CC-0809	Iron	ug/L		20100
YBKG-GW10-CC-0809	Iron	ug/L	K	5870
YBKG-GW01A-YE-0809	Iron, Dissolved	ug/L	K	1670
YBKG-GW03A-CC-0809	Iron, Dissolved	ug/L	K	1510
YBKG-GW13-3-CC-0809	Iron, Dissolved	ug/L	K	899
YBKG-GW14-3-CC-0809	Iron, Dissolved	ug/L		468
YBKG-GW11-1-YE-0809	Magnesium, Dissolved	ug/L		8380
YBKG-GW12-1-YE-0809	Magnesium, Dissolved	ug/L		6700
YBKG-GW14P-1-YE-0809	Magnesium, Dissolved	ug/L		6900
YBKG-GW15-1-YE-0809	Magnesium, Dissolved	ug/L		7870
YBKG-GW01A-YE-0809	Manganese	ug/L		279
YBKG-GW07-CC-0809	Manganese	ug/L		104
YBKG-GW10-CC-0809	Manganese	ug/L		126
YBKG-GW15-2-YE-0809	Manganese	ug/L		77.2
YBKG-GW10-CC-0809	Manganese, Dissolved	ug/L		77.2
YBKG-GW15-2-YE-0809	Manganese, Dissolved	ug/L		79.7
YBKG-GW13-2-YE-0809	Mercury, Dissolved	ug/L	L	0.14
YBKG-GW01A-YE-0809	Nickel	ug/L		43.9
YBKG-GW01P-CC-0809	Nickel	ug/L		45.6
YBKG-GW07A-CC-0809	Potassium	ug/L		19000
YBKG-GW10A-YE-0809	Potassium	ug/L		18200
YBKG-GW07A-CC-0809	Potassium, Dissolved	ug/L		17800

Table 5: Calculated Groundwater Outliers (Assuming Normal Distribution)

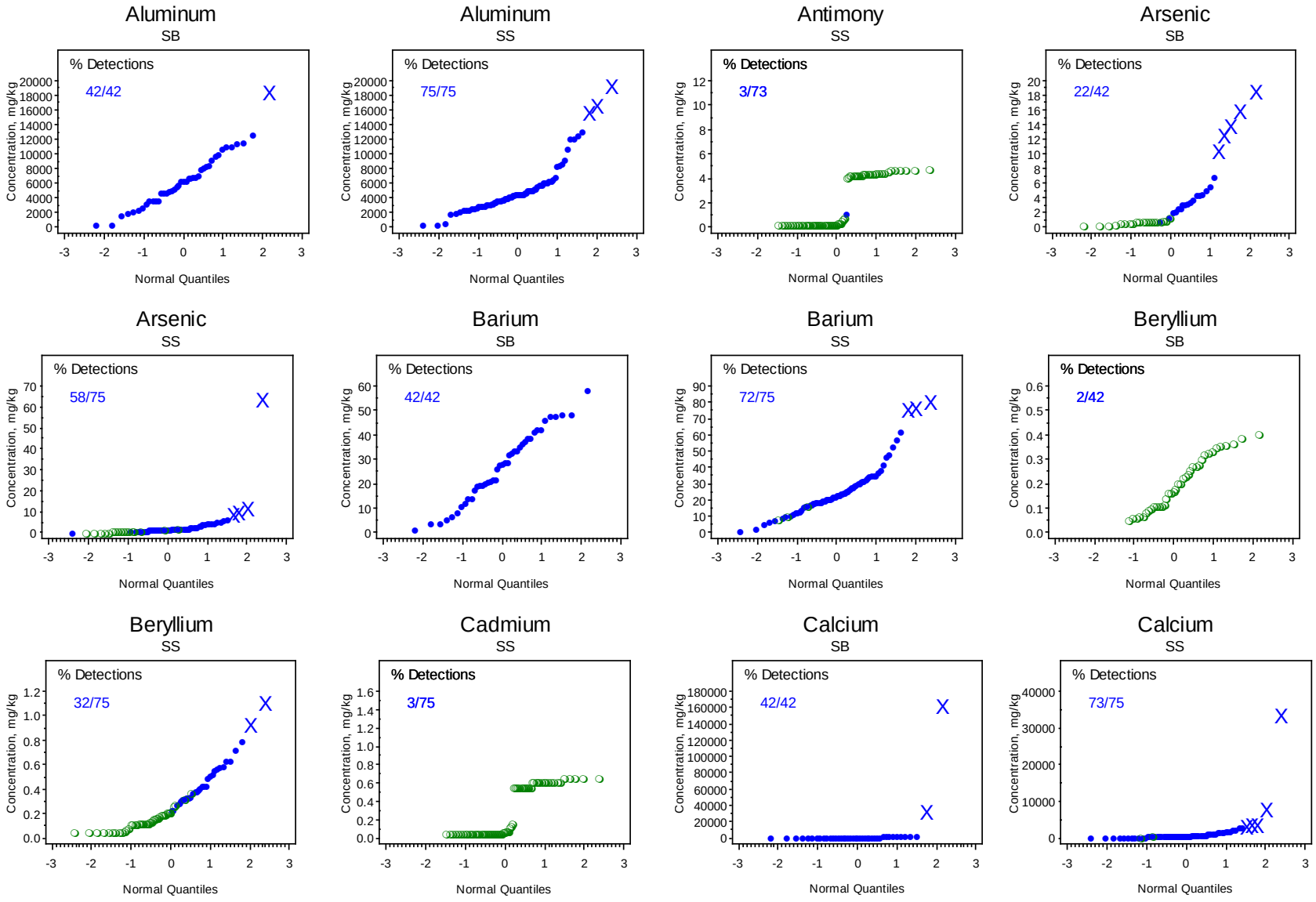
Sample ID	Parameter	Units	Qualifier	Result
YBKG-GW10A-YE-0809	Potassium, Dissolved	ug/L		19100
YBKG-GW15-1-YE-0809	Sodium	ug/L		84200
YBKG-GW15-1-YE-0809	Sodium, Dissolved	ug/L		85100
YBKG-GW01A-YE-0809	Vanadium	ug/L		83.9
YBKG-GW01A-YE-0809	Zinc	ug/L		146
YBKG-GW07-CC-0809	Zinc	ug/L		37.2
YBKG-GW07A-CC-0809	Zinc	ug/L		34

Table 6: Summary Statistics for Groundwater Background Data

Chemical Group	Aquifer	Parameter	Calculated 95/95 UTL	UTL Basis	Number of Detects	Number of Analyses	Frequency of Detects	Percent Detects	Units	Minimum Detected Value	Maximum Detected Value	Minimum DL for Non-detects	Maximum DL for Non-detects	Location of Maximum Detected Concentration	Mean Value Detects	Standard Deviation Detects
Dissolved Metals	CC-YE	Aluminum, Dissolved	NA	Fewer than Four Detects	3	25	3/25	12	ug/L	82.4	100	200	200	YBKG-GW15-3-CC	98.8	4.31
Dissolved Metals	CC-YE	Antimony, Dissolved	NA	Fewer than Four Detects	1	26	1/26	4	ug/L	9.7	9.7	0.25	20	YBKG-GW07A-CC	1.95	3.49
Dissolved Metals	CC-YE	Arsenic, Dissolved	1.37	HW Approx. Gamma UTL	23	23	23/23	100	ug/L	0.27	1.3	NA	NA	YBKG-GW06A-CC	0.588	0.268
Dissolved Metals	CC-YE	Barium, Dissolved	127	HW Approx. Gamma UTL	26	26	26/26	100	ug/L	16.3	101	NA	NA	YBKG-GW07A-CC	49.4	26.1
Dissolved Metals	CC-YE	Cadmium, Dissolved	0.177	Kaplan Meier UTL	6	26	6/26	23	ug/L	0.15	0.17	2	2	YBKG-GW15-1-YE	0.807	0.36
Dissolved Metals	CC-YE	Chromium, Dissolved	6.04	Kaplan Meier UTL	8	25	8/25	32	ug/L	0.9	5.8	10	10	YBKG-GW05A-CC	4.17	1.54
Dissolved Metals	CC-YE	Cobalt, Dissolved	NA	Fewer than Four Detects	1	26	1/26	4	ug/L	0.7	0.7	50	50	YBKG-GW11-3-CC	24.1	4.77
Dissolved Metals	CC-YE	Copper, Dissolved	NA	Fewer than Four Detects	1	26	1/26	4	ug/L	3	3	25	25	YBKG-GW14-1-YE	12.1	1.86
Dissolved Metals	CC-YE	Lead, Dissolved	NA	Fewer than Four Detects	1	26	1/26	4	ug/L	1.7	1.7	1.6	10	YBKG-GW10A-YE	3.97	1.73
Dissolved Metals	CC-YE	Manganese, Dissolved	49.5	Normal UTL MLE	21	24	21/24	88	ug/L	1.7	44.8	1.4	15	YBKG-GW13-3-CC	17.5	12.7
Dissolved Metals	CC-YE	Mercury, Dissolved	NA	Fewer than Four Detects	2	25	2/25	8	ug/L	0.072	0.1	0.2	0.2	YBKG-GW13-1-YE	0.0989	0.0056
Dissolved Metals	CC-YE	Nickel, Dissolved	NA	Fewer than Four Detects	1	26	1/26	4	ug/L	12.2	12.2	40	40	YBKG-GW01-CC	19.7	1.53
Dissolved Metals	CC-YE	Selenium, Dissolved	NA	Fewer than Four Detects	2	26	2/26	8	ug/L	7.7	9.1	35	35	YBKG-GW14-1-YE	16.8	2.48
Dissolved Metals	CC-YE	Vanadium, Dissolved	NA	Fewer than Four Detects	2	26	2/26	8	ug/L	2.5	4.3	50	50	YBKG-GW09A-YE	23.3	5.88
Dissolved Metals	CC	Calcium, Dissolved	148000	Normal UTL	13	13	13/13	100	ug/L	36500	123000	NA	NA	YBKG-GW07-CC	86800	23000
Dissolved Metals	YE	Calcium, Dissolved	113000	Normal UTL	13	13	13/13	100	ug/L	26100	93800	NA	NA	YBKG-GW14-2-YE	58500	20400
Dissolved Metals	CC	Iron, Dissolved	631	Normal UTL	7	11	7/11	64	ug/L	118	468	200	200	YBKG-GW14-3-CC	248	120
Dissolved Metals	YE	Iron, Dissolved	275	Kaplan Meier UTL	6	12	6/12	50	ug/L	31.6	234	200	200	YBKG-GW15-2-YE	110	80.3
Dissolved Metals	CC	Magnesium, Dissolved	3880	Normal UTL	13	13	13/13	100	ug/L	729	3460	NA	NA	YBKG-GW10-CC	1790	781
Dissolved Metals	YE	Magnesium, Dissolved	11200	Normal UTL	12	13	12/13	92	ug/L	1280	8380	438	438	YBKG-GW11-1-YE	4400	2510
Dissolved Metals	CC	Potassium, Dissolved	1710	Normal UTL	11	11	11/11	100	ug/L	775	1450	NA	NA	YBKG-GW03A-CC	1090	219
Dissolved Metals	YE	Potassium, Dissolved	12600	Normal UTL	12	12	12/12	100	ug/L	1140	9360	NA	NA	YBKG-GW15-1-YE	4430	2970
Dissolved Metals	CC	Sodium, Dissolved	10000	Normal UTL	10	10	10/10	100	ug/L	4610	8350	NA	NA	YBKG-GW13-3-CC	6160	1330
Dissolved Metals	YE	Sodium, Dissolved	62800	Normal UTL	12	12	12/12	100	ug/L	5240	51100	NA	NA	YBKG-GW12-1-YE	20800	15400
Total Metals	CC-YE	Aluminum	2230	HW Approx. Gamma UTL 1/2 DL	15	21	15/21	71	ug/L	94	1640	200	200	YBKG-GW09A-YE	314	381
Total Metals	CC-YE	Antimony	NA	Fewer than Four Detects	1	26	1/26	4	ug/L	18.8	18.8	0.28	20	YBKG-GW07A-CC	2.05	4.28
Total Metals	CC-YE	Arsenic	2.28	HW Approx. Gamma UTL	21	21	21/21	100	ug/L	0.31	1.9	NA	NA	YBKG-GW10-CC	0.817	0.467
Total Metals	CC-YE	Barium	118	HW Approx. Gamma UTL	24	24	24/24	100	ug/L	21.5	104	NA	NA	YBKG-GW11-1-YE	50.9	23.8
Total Metals	CC-YE	Beryllium	2.45	Kaplan Meier UTL	6	26	6/26	23	ug/L	0.23	2.4	5	5	YBKG-GW01A-YE	2.08	0.878
Total Metals	CC-YE	Cadmium	0.605	Kaplan Meier UTL	11	26	11/26	42	ug/L	0.15	0.72	2	2	YBKG-GW01A-YE	0.683	0.392
Total Metals	CC-YE	Chromium	15.1	Kaplan Meier UTL	11	21	11/21	52	ug/L	0.9	14	1.2	10	YBKG-GW05A-CC	5.22	4.01
Total Metals	CC-YE	Cobalt	20.6	Kaplan Meier UTL	4	26	4/26	15	ug/L	0.73	16.9	50	50	YBKG-GW01A-YE	22	7.69
Total Metals	CC-YE	Copper	NA	Fewer than Four Detects	3	25	3/25	12	ug/L	1.9	12.2	1.9	40.2	YBKG-GW12-3-CC	10.3	4.76
Total Metals	CC-YE	Lead	NA	Fewer than Four Detects	2	26	2/26	8	ug/L	0.51	21.3	1.6	10	YBKG-GW01A-YE	3.24	4.05
Total Metals	CC-YE	Manganese	57.9	Normal UTL MLE	19	22	19/22	86	ug/L	13.4	57	2.4	15.5	YBKG-GW08A-CC	26.5	13.9
Total Metals	CC-YE	Mercury	NA	Fewer than Four Detects	2	26	2/26	8	ug/L	0.078	0.081	0.2	0.2	YBKG-GW11-1-YE	0.0984	0.00559
Total Metals	CC-YE	Nickel	11.4	Kaplan Meier UTL	8	24	8/24	33	ug/L	2.2	9.9	40	40	YBKG-GW06A-CC	14.9	7.58
Total Metals	CC-YE	Vanadium	26.2	Kaplan Meier UTL	11	25	11/25	44	ug/L	1.2	32.4	50	50	YBKG-GW07-CC	16.9	11
Total Metals	CC-YE	Zinc	4.52	Kaplan Meier UTL	7	23	7/23	30	ug/L	2.4	4.3	2.8	19.3	YBKG-GW11-2-YE	3.86	2.32
Total Metals	CC	Calcium	158000	Normal UTL	12	12	12/12	100	ug/L	34400	124000	NA	NA	YBKG-GW15-3-CC	92200	24000
Total Metals	YE	Calcium	169000	Gamma UTL	13	13	13/13	100	ug/L	35400	146000	NA	NA	YBKG-GW01A-YE	66600	30700
Total Metals	CC	Iron	3590	Normal UTL	10	10	10/10	100	ug/L	198	2880	NA	NA	YBKG-GW08A-CC	1230	809
Total Metals	YE	Iron	894	Normal UTL	10	10	10/10	100	ug/L	114	753	NA	NA	YBKG-GW13-1-YE	340	190
Total Metals	CC	Magnesium	3600	Normal UTL	11	11	11/11	100	ug/L	709	3240	NA	NA	YBKG-GW07A-CC	1750	655
Total Metals	YE	Magnesium	11500	Normal UTL	13	13	13/13	100	ug/L	963	8770	NA	NA	YBKG-GW11-1-YE	4620	2560
Total Metals	CC	Potassium	3490	Gamma UTL	12	12	12/12	100	ug/L	880	3100	NA	NA	YBKG-GW07-CC	1510	607
Total Metals	YE	Potassium	12700	Normal UTL	12	12	12/12	100	ug/L	1570	9260	NA	NA	YBKG-GW15-1-YE	4820	2870
Total Metals	CC	Sodium	9920	Normal UTL	10	10	10/10	100	ug/L	4630	8290	NA	NA	YBKG-GW13-3-CC	6200	1280
Total Metals	YE	Sodium	64500	Normal UTL	12	12	12/12	100	ug/L	5740	52600	NA	NA	YBKG-GW12-1-YE	21000	15900

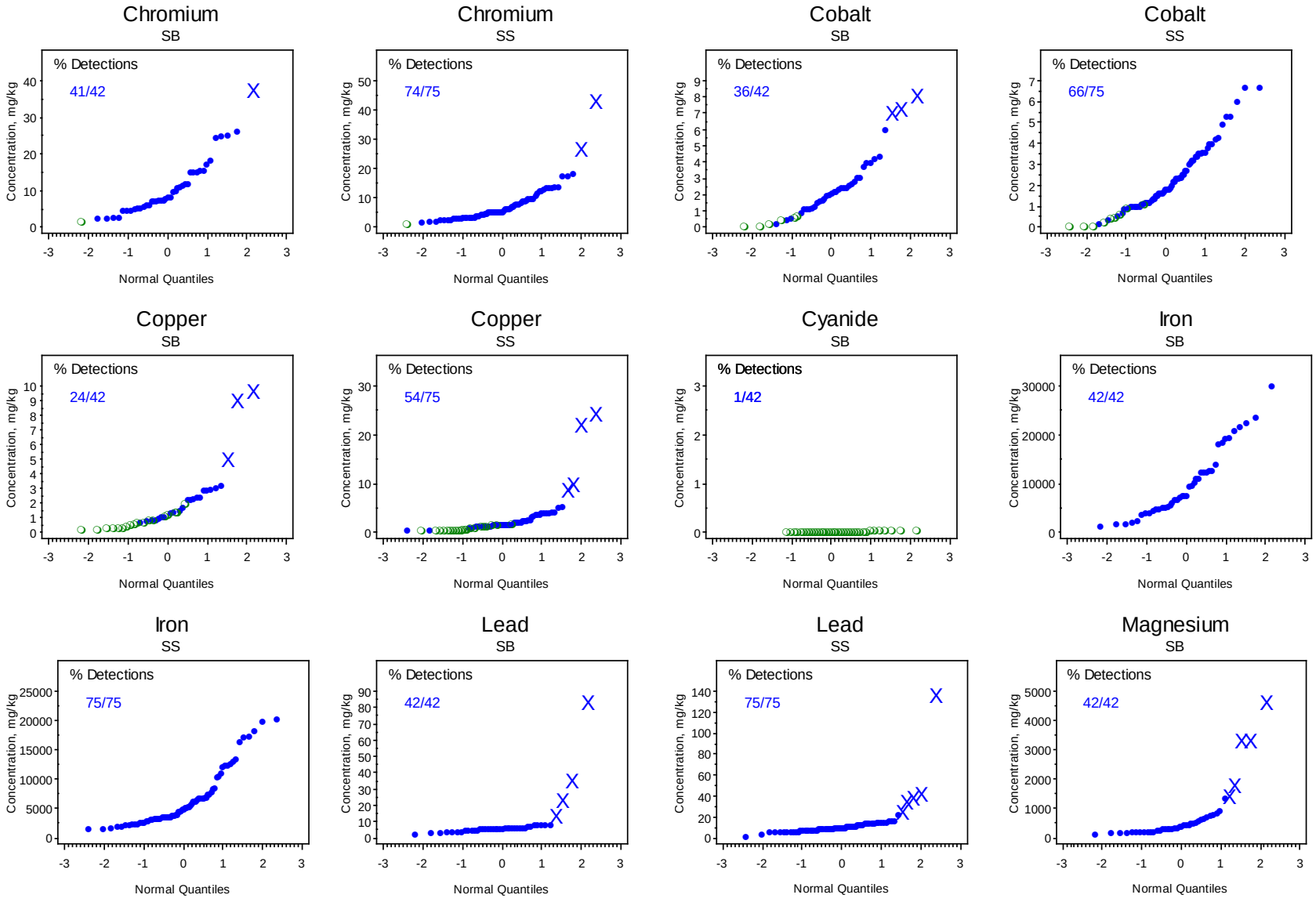
Figures

Figure 1: Probability Plots Using 1/2 the RL as Proxy for NDs



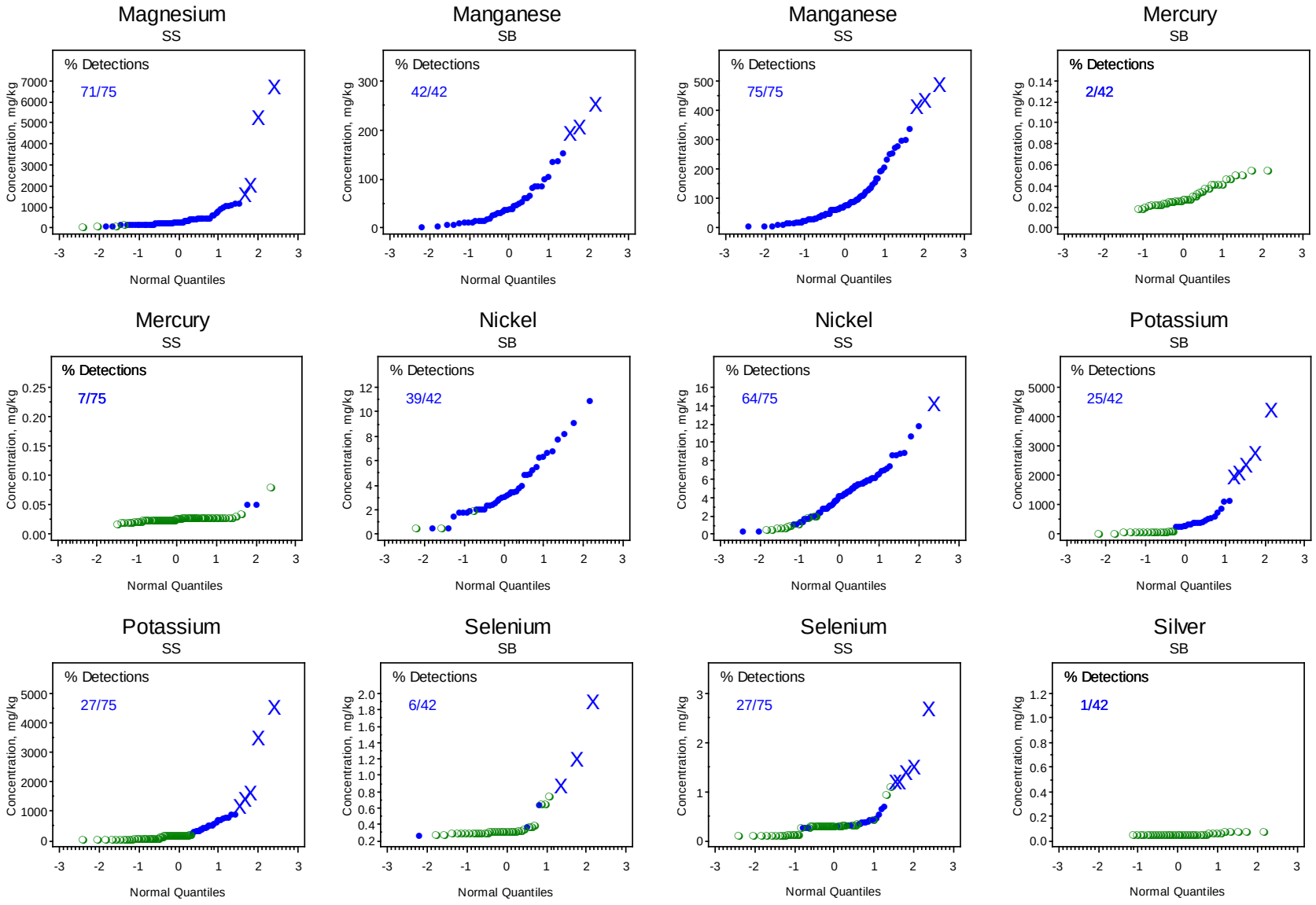
Green Open Symbol Represents 1/2 DL Proxy for Nondetect Value; Blue Symbol Represents Detected Values

Figure 1: Probability Plots Using 1/2 the RL as Proxy for NDs



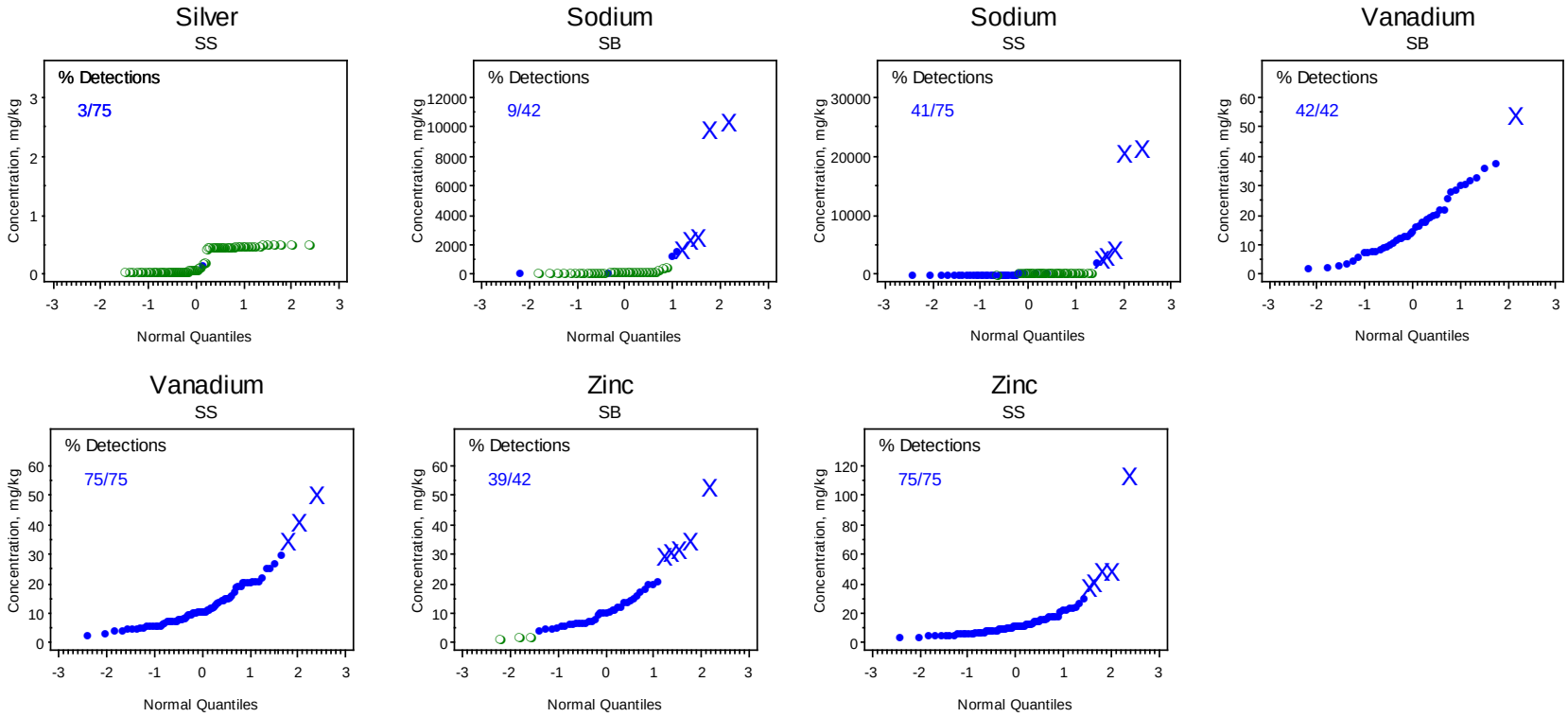
Green Open Symbol Represents 1/2 DL Proxy for Nondetect Value; Blue Symbol Represents Detected Values

Figure 1: Probability Plots Using 1/2 the RL as Proxy for NDs



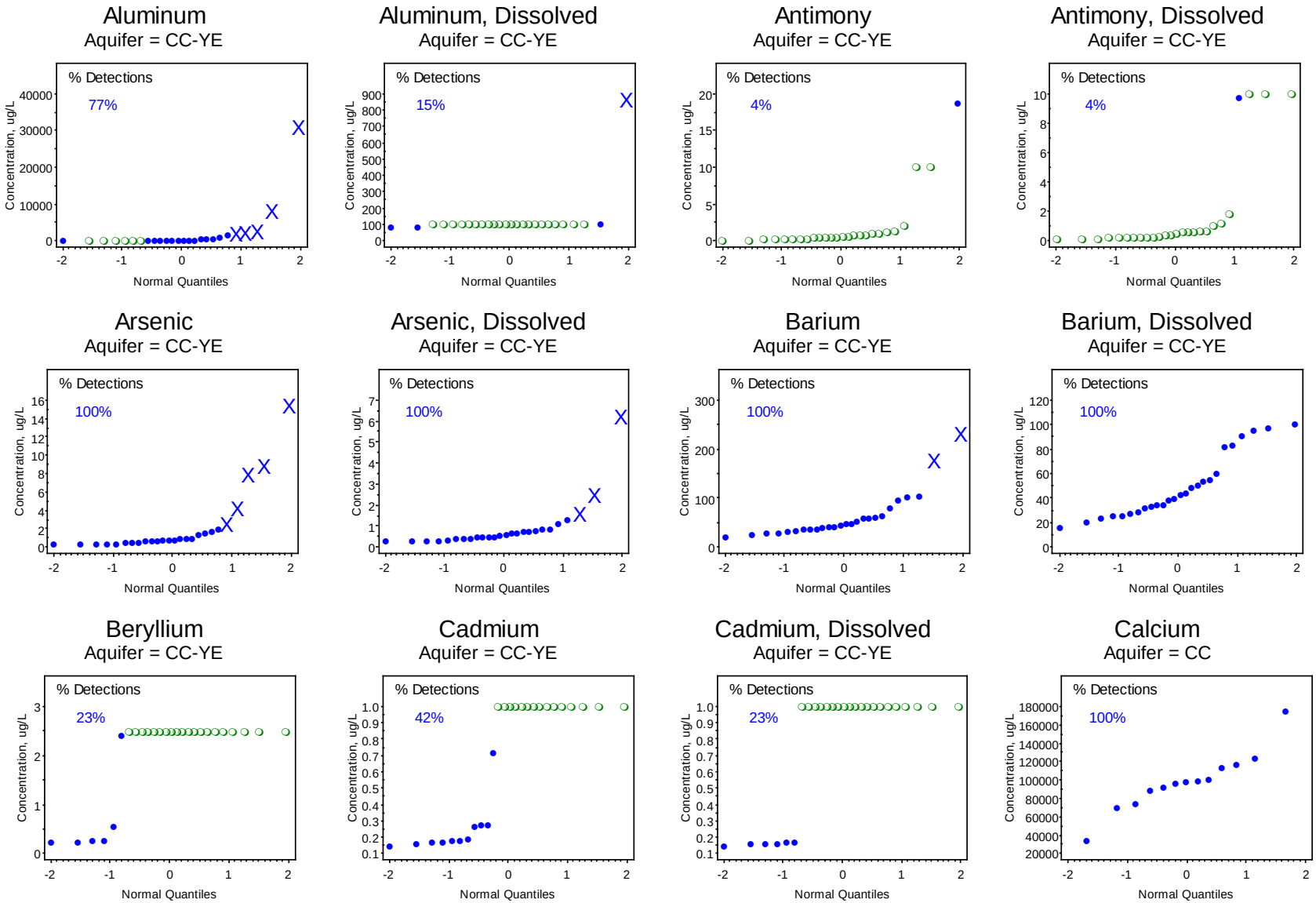
Green Open Symbol Represents 1/2 DL Proxy for Nondetect Value; Blue Symbol Represents Detected Values

Figure 1: Probability Plots Using 1/2 the RL as Proxy for NDs



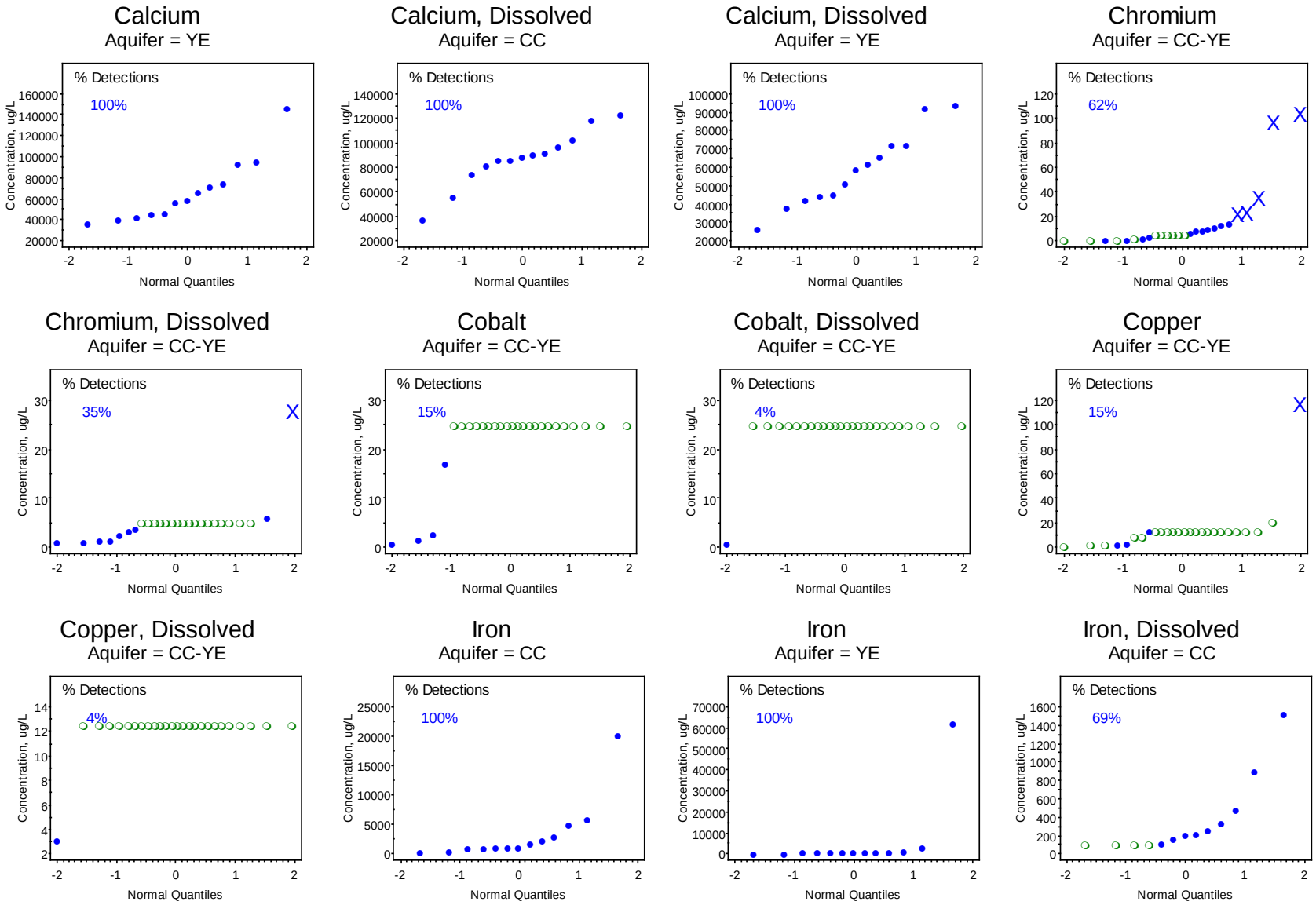
Green Open Symbol Represents 1/2 DL Proxy for Nondetect Value; Blue Symbol Represents Detected Values

Figure 2: Probability Plots for Groundwater Data



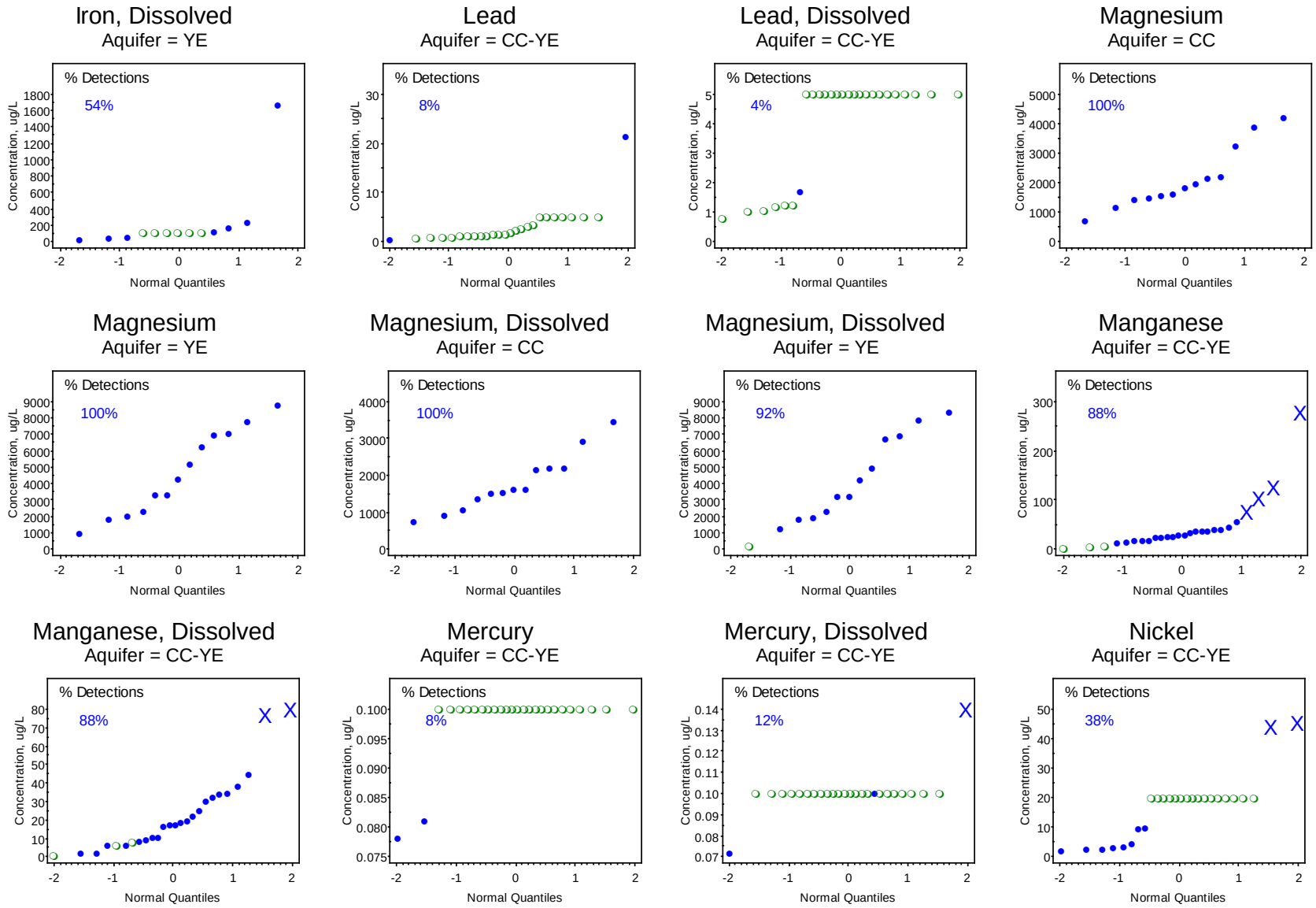
Green Open Symbol Represents 1/2 DL Proxy for Nondetects; Blue Symbol Represents Detects; X Represents Mathematical Outlier

Figure 2: Probability Plots for Groundwater Data



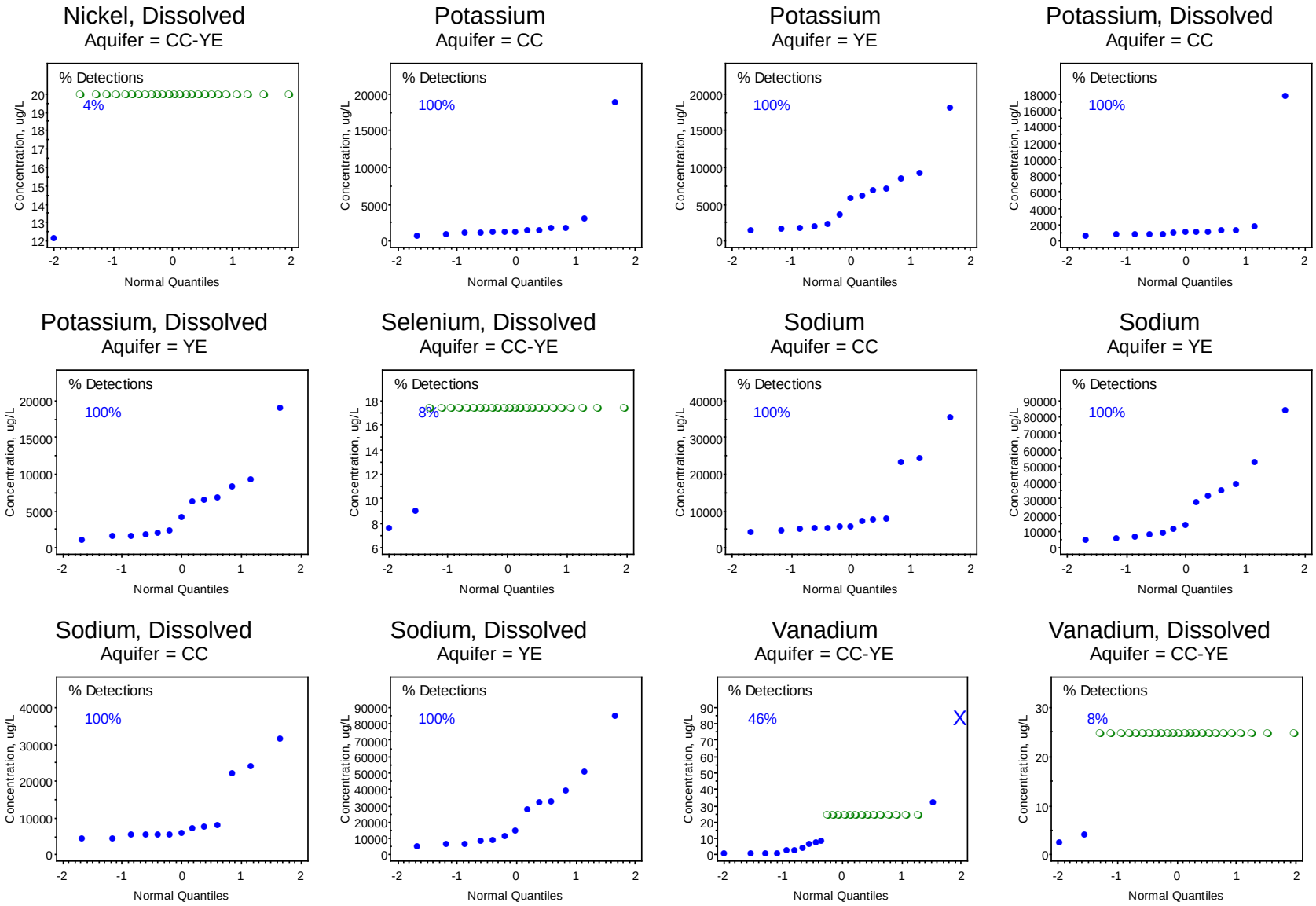
Green Open Symbol Represents 1/2 DL Proxy for Nondetects; Blue Symbol Represents Detects; X Represents Mathematical Outlier

Figure 2: Probability Plots for Groundwater Data



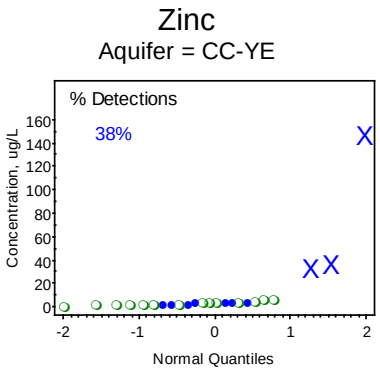
Green Open Symbol Represents 1/2 DL Proxy for Nondetects; Blue Symbol Represents Detects; X Represents Mathematical Outlier

Figure 2: Probability Plots for Groundwater Data



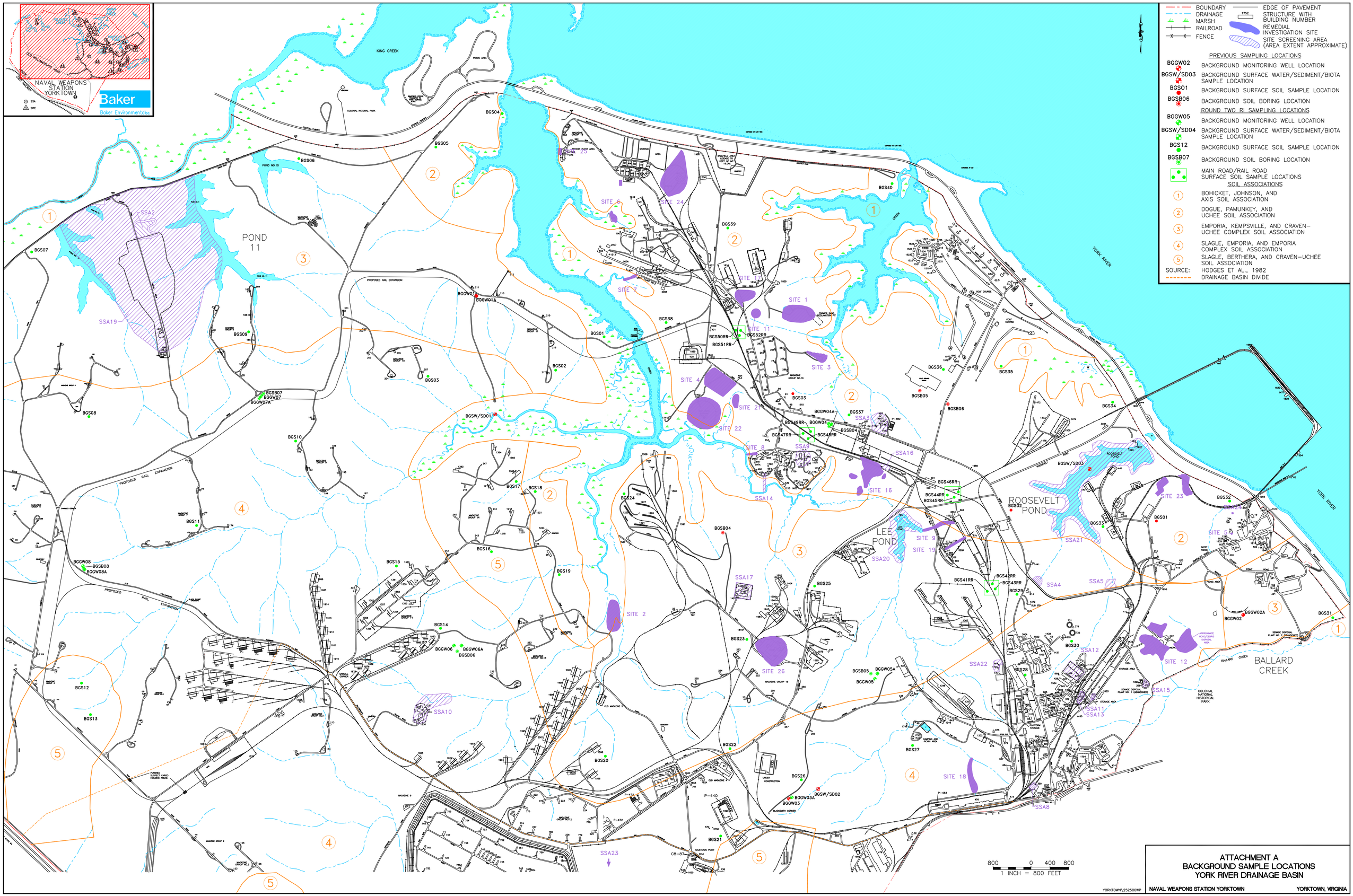
Green Open Symbol Represents 1/2 DL Proxy for Nondetects; Blue Symbol Represents Detects; X Represents Mathematical Outlier

Figure 2: Probability Plots for Groundwater Data



Green Open Symbol Represents 1/2 DL Proxy for Nondetects; Blue Symbol Represents Detects; X Represents Mathematical Outlier

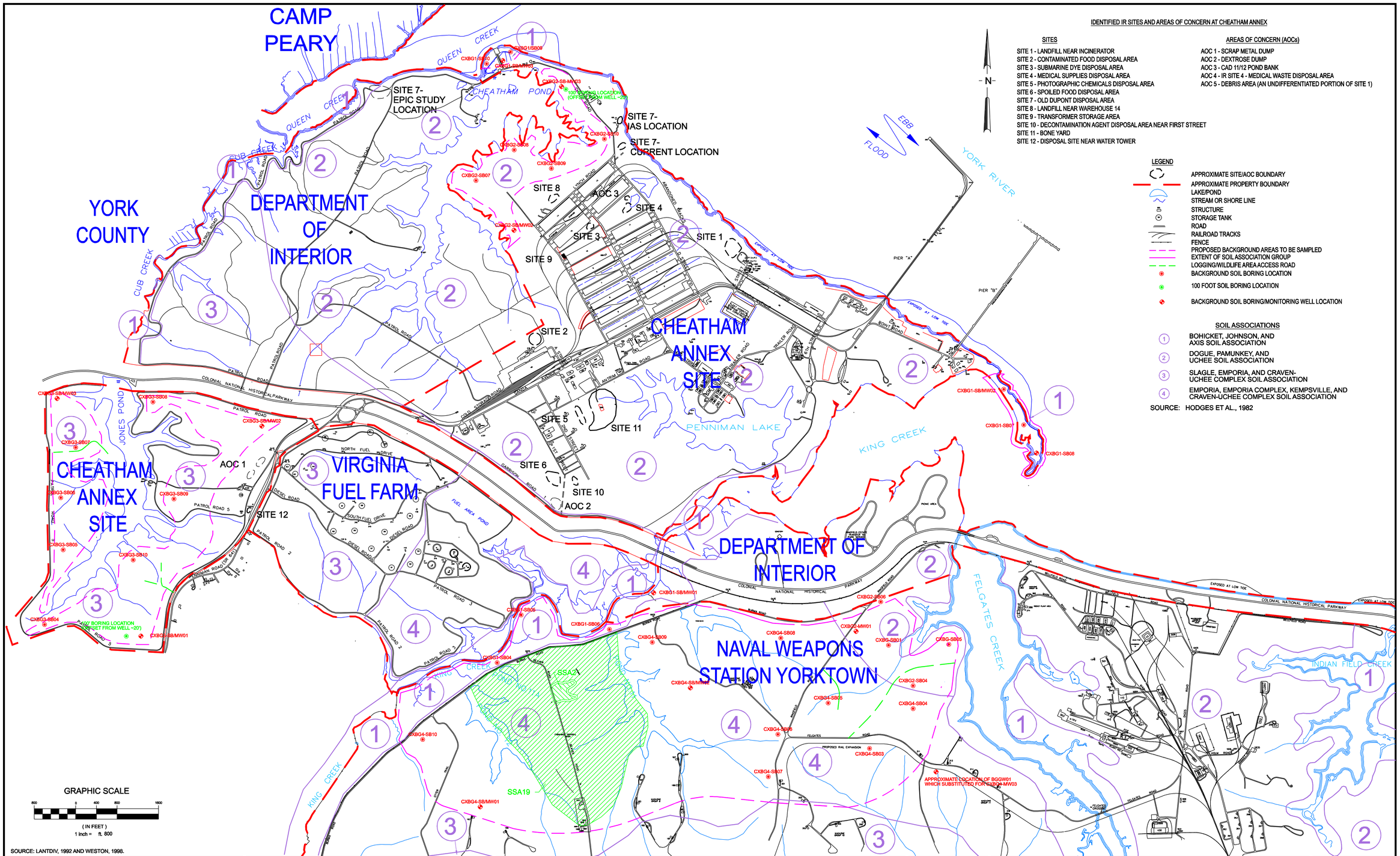
Appendix A
Previous WPNSTA Yorktown and CAX Background Investigations Sample Locations



ATTACHMENT A
BACKGROUND SAMPLE LOCATIONS
YORK RIVER DRAINAGE BASIN

NAVAL WEAPONS STATION YORKTOWN — YORKTOWN, VIRGINIA

YORKTOWN_252500WP



SOURCE: LANTDIV, 1992 AND WESTON, 1998.

IDENTIFIED IR SITES AND AREAS OF CONCERN AT CHEATHAM ANNEX

SITES

- SITE 1 - LANDFILL NEAR INCINERATOR
- SITE 2 - CONTAMINATED FOOD DISPOSAL AREA
- SITE 3 - SUBMARINE DYE DISPOSAL AREA
- SITE 4 - MEDICAL SUPPLIES DISPOSAL AREA
- SITE 5 - PHOTOGRAPHIC CHEMICALS DISPOSAL AREA
- SITE 6 - SPOILED FOOD DISPOSAL AREA
- SITE 7 - OLD DUPONT DISPOSAL AREA
- SITE 8 - LANDFILL NEAR WAREHOUSE 14
- SITE 9 - TRANSFORMER STORAGE AREA
- SITE 10 - DECONTAMINATION AGENT DISPOSAL AREA NEAR FIRST STREET
- SITE 11 - BONE YARD
- SITE 12 - DISPOSAL SITE NEAR WATER TOWER

AREAS OF CONCERN (AOCs)

- AOC 1 - SCRAP METAL DUMP
- AOC 2 - DEXTROSE DUMP
- AOC 3 - CAD 11/12 POND BANK
- AOC 4 - IR SITE 4 - MEDICAL WASTE DISPOSAL AREA
- AOC 5 - DEBRIS AREA (AN UNDIFFERENTIATED PORTION OF SITE 1)

LEGEND

- APPROXIMATE SITE/AOC BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- LAKE/POND
- STREAM OR SHORE LINE
- STRUCTURE
- STORAGE TANK
- ROAD
- RAILROAD TRACKS
- FENCE
- PROPOSED BACKGROUND AREAS TO BE SAMPLED
- EXTENT OF SOIL ASSOCIATION GROUP
- LOGGING/WILDLIFE AREA ACCESS ROAD
- BACKGROUND SOIL BORING LOCATION
- 100 FOOT SOIL BORING LOCATION
- BACKGROUND SOIL BORING/MONITORING WELL LOCATION

SOIL ASSOCIATIONS

1. BOHICKET, JOHNSON, AND AXIS SOIL ASSOCIATION
2. DOGUE, PAMUNKEY, AND UCHEE SOIL ASSOCIATION
3. SLAGLE, EMPORIA, AND CRAVEN-UCHEE COMPLEX SOIL ASSOCIATION
4. EMPORIA, EMPORIA COMPLEX, KEMPSVILLE, AND CRAVEN-UCHEE COMPLEX SOIL ASSOCIATION

SOURCE: HODGES ET AL., 1982

REVISIONS	
1	
2	
3	
4	
5	
6	
7	
8	

DSN/DWN:	HGW/WJH
CHK:	HGW
S.O. NO.:	26007-196
FILE:	2196705W

NORTH

NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA
CHEATHAM ANNEX SITE

Baker Environmental, Inc.
Coraopolis, Pennsylvania

Baker

SURFACE SOIL, SUBSURFACE SOIL, AND GROUNDWATER SAMPLE LOCATION MAP
CTO - 0196

SCALE: 1" = 800'

DATE: JULY 2002

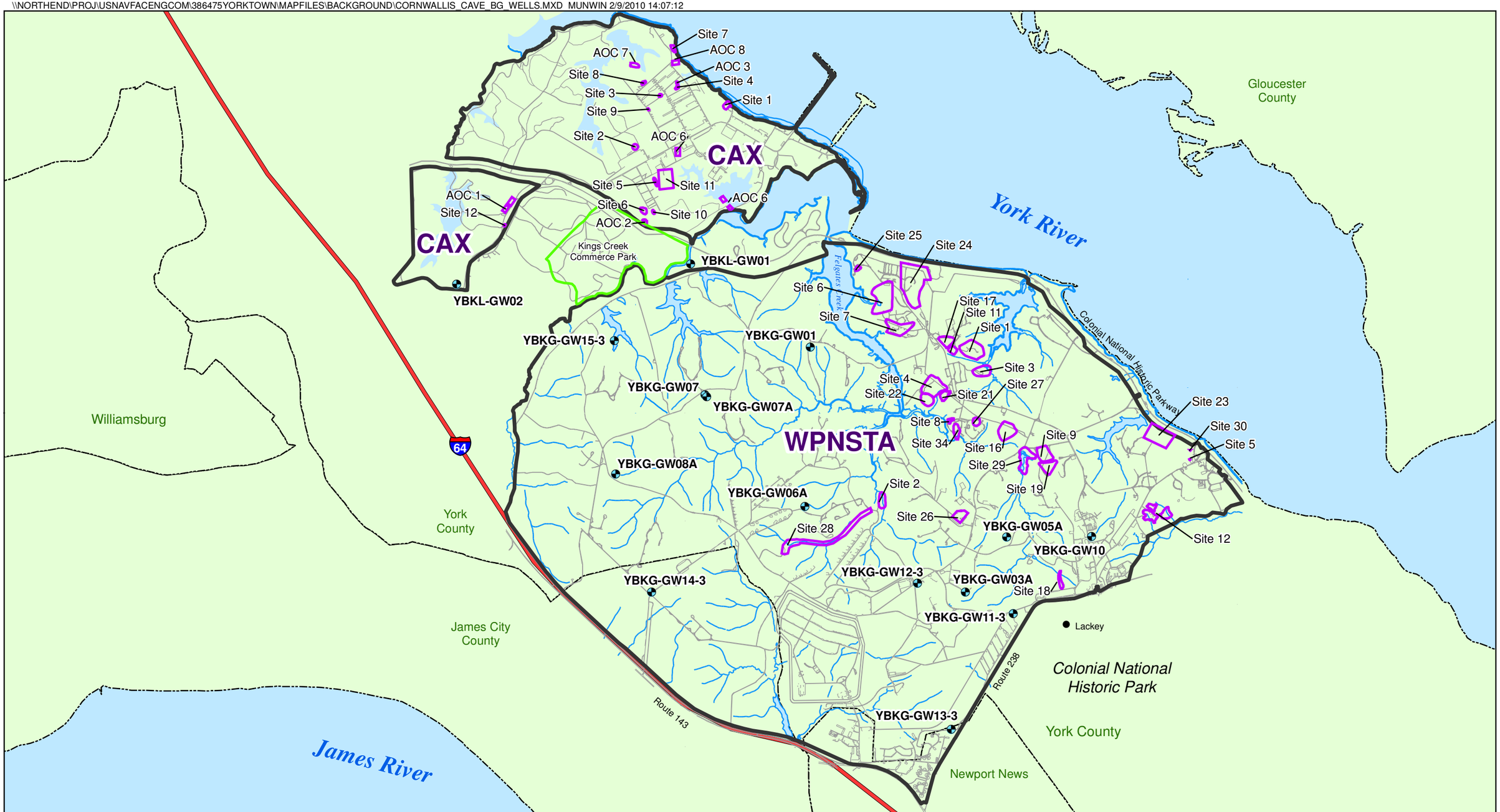
FIGURE NO.

5-1

...\2196705W_Fig 5-1.dwg 3/3/2008 4:28:10 PM

Appendix B
2009 Groundwater Sample Locations

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\CORNWALLIS_CAVE_BG_WELLS.MXD MUNWIN 2/9/2010 14:07:12



Legend

- Sampled Monitoring Well
- Roads
- Shoreline and Water Bodies
- Interstate 64
- Kings Creek Commerce Park
- City / County Boundaries
- Site Boundaries
- Activity Boundaries

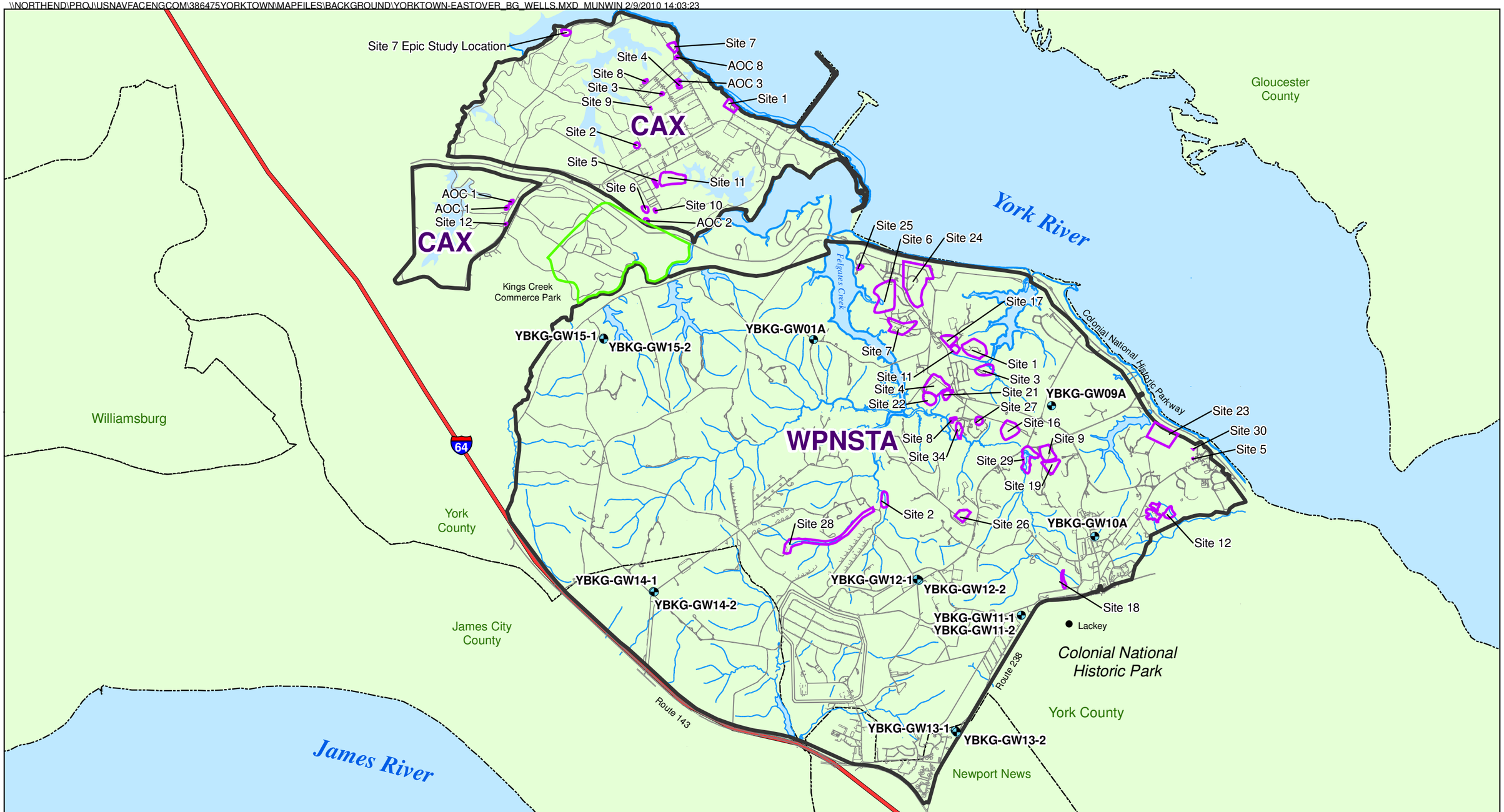
N

0 4,000 8,000 Feet

Cornwallis Cave Aquifer Background Wells
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\BACKGROUND\YORKTOWN-EASTOVER_BG_WELLS.MXD MUNWIN 2/9/2010 14:03:23



Legend

- Sampled Monitoring Well
- Roads
- Shoreline and Water Bodies
- Interstate 64
- Kings Creek Commerce Park
- City / County Boundaries
- Site Boundaries
- Activity Boundaries

N

0 4,000 8,000 Feet

Yorktown-Eastover Aquifer Background Wells
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

Responses to Comments

EPA’s Comments on Draft TM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Robert Thomson, P.E., R.E.M.
Office of Federal Facility Remediation

Direct Dial (215) 814-3357
Mail Code: 3HS11

Date: May 5, 2010

Mr. Thomas Kowalski
NAVFAC MIDLANT, Code EV3
9742 Maryland Avenue
Building N-26, Room 3208
Norfolk, VA 23511-3095

Re: Naval Weapons Station–Yorktown NPL site, Yorktown, Va.
Naval Supply Center – Cheatham Annex NPL site, Williamsburg, Va
Review of draft *Calculation of Background Concentrations Technical Memorandum*

Dear Mr. Kowalski:

Enclosed, please find the U.S. Environmental Protection Agency's (EPA's) comments pertaining to the review of the U.S. Navy's (Navy's) February, 2010 draft *Calculation of Background Concentrations Technical Memorandum* (TM) for the Naval Weapons Station-Yorktown (NWSY) NPL site, and the Naval Supply Center – Cheatham Annex (CAX) NPL site:

EPA Region 3 has evaluated the appropriateness of statistical methods used by CH2M HILL to evaluate background concentrations at the NWSY NPL site and the CAX NPL site. In order to address the objective of this evaluation, in addition to reviewing the CH2M HILL draft TM, an independent analysis of the background data was performed for selected contaminants at the NWSY and CAX. This review letter therefore summarizes: 1) results of the independent analysis performed by EPA for selected COCs; 2) presents review comments on the statistical background study performed by CH2MHILL; and 3) makes recommendations based upon the statistical analyses performed by EPA.

Establishing Background/Reference Data

Whenever possible, background data sets are collected from pristine unimpacted locations. When using onsite background data to establish site-specific background level concentrations, it is necessary to assure that the selected background/ reference locations are not impacted by onsite activities and/or contamination originating from other industrial activities potentially impacting the site background.

Outliers in Background Data Sets

Elevated outlying observations in a background data set potentially may represent locations impacted by the site activities, especially when background data are collected from locations (e.g., onsite reference area locations chosen at large federal facilities) potentially impacted by the site and/or other industrial activities. In such scenarios (as is the case for CAX and NWSY onsite reference areas), all potential outliers are removed from background data sets (EPA 2000, 2002) before computing decision statistics (e.g., UTLs, UPLs) to estimate site-specific background level concentrations.

Tests for Outliers

Dixon and Rosner tests (EPA 2006) are often used to identify outliers. However the use more effective robust outlier identification procedures (e.g., Tukey's Biweight function – Hoaglin, Mosteller, and Tukey,1983; PROP influence function - Singh, 1993, LMS and MCD methods - Rosseeuuw and Leroy, 1987) is desirable to identify multiple outliers and multiple populations (e.g., several soil associations). In the present case, in order to keep things simple and verify computations performed by CH2M HILL, only classical Dixon and Rosner tests were used.

1.0 Data

Groundwater, surface, and subsurface soil background data were collected from CAX and NWSY sites. These sites consist of four soil assocaition types. For some locations, duplicate samples were collected. In such cases, higher value was retained and used in the statistical analyses perfromed by CH2MHILL to establish background level concentrations. For comaprison sake, the reviewers also used the higher duplicate value, even though the use of the average of duplicates is a preferred method and is commonly used in practice.

However, for background evaluation studies, the use of the lower value of the duplicate results perhaps will be more appropriate resulting in a conservative estimate (95/95UTL) of the background level concentration.

2.0 Constituents studied in this report

The reviewers used EPA software packages, ProUCL 4.00.05 and Scout to perform statistical analyses for selected COCs described below. The notations used in the statistical computation tables are described in ProUCL technical guide. For an example, KM represents Kaplan Meier method used to compute a decision making statistic such as an upper tolerance limit (UTL) based upon data sets with nondetects (NDs). The following constituents have been used to verify the computations described in the Draft CH2M HILL Report (February, 2010).

2.1 Inorganics – surface and subsurface soils

1. Arsenic (data consist of nondetects with multiple detection limits)
2. Lead
3. Manganese
4. Vanadium

2.2 Organics – surface and subsurface soils

1. Benzaldehyde
2. Benzo(a)pyrene
3. Dieldrin
4. Endosulfan sulphate
5. Total Organics

2.3 Groundwater

1. Arsenic, dissolved
2. Mercury, dissolved (data with nondetects at multiple detection limits)
3. Chromium, dissolved (data with nondetects at multiple detection limits)
4. Nitrobenzene (data with nondetects at multiple detection limits)
5. Arsenic
6. Manganese (data with nondetects with multiple detection limits)

3.0 General Procedure to Compute UTLs

In order to compute defensible upper tolerance limits (UTLs) to estimate background level concentrations, outlier analysis was performed for each selected COC. Since outying observation may potentially represent impacted locations, identified outliers are not inlcuded in the computation of UTLs. Outlier analysis was performed using Rosner's test when the number of observations was greater than 25 and Dixon's outlier test when the number was less than 25. For data sets with nondetects (NDs), the outlier tests were performed on data sets obtained using half of the detection limit (DL/2) values for NDs.

In order to demonstrate the influence of outliers on the computations of various statistics, 95/95UTLs were computed in two ways - with and without outliers. Also in order to compute manaeable statistics and estimates, oneway analysis of variance (ANOVA) was performed to determine if concentrations for the COCs in the 4 soil associations differ significantly. If the concentration distributions of a contaminant are comparable for the four soil types, then it is desirable to compute a single UTL to estimate background concentration for all soil associations combined.Statistical tests are also performed to determine: 1) if concentrations of COCs differ significantly in surface and subsurface soils; and 2) if concentrations of COCs found in CAX and NWSY background areas differ significantly.

Background Analysis for Selected Organics and Inorganics in Soils

There are 4 soil associations present in CAX and NWSY sites. The first step is to compare concentrations of the 4 soil associations to see if they can be combined to

compute 95/95UTLs. This was performed using One-way ANOVA (Scout software) for surface and usbsurface soils. The next step is to search for high outliers since those outliers may represent impacted locations resulting in inflated UTL values. Once the outliers were removed, the UTLs were computed for the selected constituents. Depending upon the data distribution (parameteric, nonparametric) and NDs, appropriate 95/95 UTLs were calculated to estimate background level concentrations.

3.1 Background Statistics for CAX Area

3.1.1 CAX surface soils

Classical One-Way ANOVA was per formed to determine if the concentrations of COCs in the 4 soil associations in CAX area are comparable. The results of the ANOVA test are summarized in the Appendix, Table A-1. Based upon ANOVA test statistics, it is concluded that data for the four soil associations can be combined for arsenic, manganese and vanadium. Results of outlier tests performed on the combined data (4 soil associations) are summarized as follows. The outlier test on arsenic data was performed using ½ DL values for NDs.

Table 3.1: Outliers in CAX surface soils

Metals	N	# Outliers	Outlying Value (ID)
Arsenic	40	3	12.6 (BG4-SS01-00) 9.9 (BG1-SS03-00) 8.3 (BG1-SS06-00)
Lead	40	2	136 (BG1-SS03-00) 34.7 (BG1-SS09-00)
Manganese	40	1	435 (BG4-SS10-00)
Vanadium	40	2	50.3 (BG1-SS03-00) 41.2 (BG1-SS09-00)

ANOVA was performed again on lead data after removing the 2 outlying locations shown in the above table. Once the outliers were removed, ANOVA test results (Appendix, Table A-2) suggest that lead concentrations from the four soil associations can also be considered as coming from a single statistical population.

Table 3.2: 95/95UTLs based upon datasets with and without outliers for CAX - surface soil

Metals	N	Max	Raw Statistics		95/95 UTL	
			Mean	SD	No Outliers	With Outliers
Arsenic	37 (17 NDs)	6	1.178 (KM)	1.552 (KM)	4.501 KM	7.921 KM
Lead	38	16	8.963	3.195	15.78 Normal	136 Nonparametric
Manganese	39	304	95.52	74.52	332 HW Gamma	373.4 HW Gamma
Vanadium	38	26.1	9.626	5.848	27.38 Lognormal	36.8 Lognormal

3.1.2 CAX subsurface soils

A similar process was used for subsurface soil data collected from the CAX area. The ANOVA test statistics are given in Appendix, Table A-3. Based upon ANOVA test results, it is concluded that data for the four soil associations can be considered as coming from a single population. The following table summarizes outlier tests results. The outlier test on arsenic data was performed using ½ DL values for NDs.

Table 3.3: Outliers in CAX subsurface soils

Metals	N	# Outliers	Outliers Value (ID)
Arsenic	40	5	18.6 (BG4-SB01-01) 15.9 (BG2-SB01-01) 13.8 (BG4-SB10-01) 12.5 (BG1-SB09-01) 10.4 (BG1-SB03-01)
Lead	40	3	83.7 (BG1-SB08-01) 35.3 (BG1-SB09-01) 35.3 (BG1-SB03-01)

Manganese	40	2	208 (BG3-SB09-01) 195 (BG43-SB01-01)
Vanadium	40	1	53.8 (BG3-SB03-01)

Table 3.4: 95/95UTLs based upon datasets with and without outliers for CAX - subsurface soil

Metals	N	Max	Raw Statistics		95/95 UTL	
			Mean	SD	No Outliers	With Outliers
Arsenic	35 (20 NDs)	6.8	2.73 (KM)	1.202	5.323 KM	12.83 KM
Lead	37	8.3	5.889	1.375	8.831 Normal	83.7 Nonparametric
Manganese	38	154	46.29	39.32	172.5 HW Gamma	210.6 Gamma
Vanadium	39	37.8	17.37	10.15	38.94 Normal	54.98 Gamma

Conclusion: The concentrations of the selected metals found in four soil associations of CAX (for both surface and subsurface) are comparable. The four surface (and subsurface) soil associations can be considered to represent a single population. Therefore, background level concentrations (95/95 UTLs) can be computed using the combined surface (and combined subsurface) soil associations data sets.

3.1.3 CAX surface soil and subsurface soils combined

It is always desirable to evaluate if there are significant differences in contaminants concentrations of surface and subsurface soils. Two sample hypotheses tests were performed to determine if surface and subsurface concentrations for the selected COCs are comparable.

Null Hypothesis H_0: Data from surface and subsurface soils are comparable and can be combined.
Alternate Hypothesis H_A: Surface and subsurface soils data are different and cannot be combined

Table 3.5: Two Sample Test Results – CAX surface soil versus CAX subsurface soil

Metals	Test	Conclusion	P value ($\alpha = 0.05$)
Arsenic	Gehan	Combine surface and subsurface soils	0.198
Lead	t-Test	Do not combine surface and subsurface soils	0
Manganese	t-Test	Do not combine surface and subsurface soils	0.001
Vanadium	t-Test	Do not combine surface and subsurface soils	0

Arsenic was the only metal where the surface and subsurface soil concentrations are comparable, and the two data sets may be merged to compute a UTL based upon the combined data set. The 95/95UTL for arsenic based upon the combined surface and subsurface soil data sets is given in the following table.

Table 3.6: 95/95UTLs based upon CAX surface and subsurface data combined

Metals	N	Max	Raw Statistics		95/95 UTL
			Mean	SD	
Arsenic	72 (37 NDs)	6.8	1.457 (KM)	1.763	4.947 KM

Conclusion: For most of the CAX COCs evaluated in this report, there are significant differences in contaminant concentrations of surface and subsurface soils, therefore, it is suggested to compute 95/95 UTLs separately for surface and subsurface soils.

3.2 Background Statistics for NWSY Site

The background analysis was performed for NWSY area following the similar procedure as used for CAX area.

3.2.1 NWSY surface soils

Classical ANOVA was performed to determine if the concentrations of the COC in four (4) soil associations are comparable. ANOVA test results are given in Appendix, Table A-4. Based upon the ANOVA test statistics, it is concluded that concentrations of selected

COCs in the 4 soil associations are comparable, and therefore just like the CAX area, 4 soil types can be considered to represent a single statistical populations. Site-wide background level concentrations for surface soils can be computed based upon the combined data set of the 4 soil types. Outlier tests were performed to identify any potentially impacted locations. As before, outlier test on arsenic data set was performed using ½ DL values. The following table summarizes the outlier test results.

Table 3.7: Outliers in NWSY surface soils

Metals	N	# Outliers	Outliers Value (ID)
Arsenic	35	2	63.9 (BGS21) 5.8 (BGS07)
Lead	35	4	43.1 (BGS07) 38.7 (BGS28) 25.3 (BGS22) 22.7 (BGS04)
Manganese	35	2	491 (BGS03) 413 (BGS38)
Vanadium	35	0	-

Table 3.8: 95/95UTLs based upon datasets with and without outliers for NWSY surface soil

Metals	N	Max	Raw Statistics		95/95 UTL	
			Mean	SD	Without Outliers	With Outliers
Arsenic	33	4.2	1.897	0.967	4.528 HW Gamma	63.9 Nonparametric
Lead	31	16.7	11.57	3.08	18.34 Normal	43.1 Nonparametric
Manganese	33	340	99.02	89.83	403.6 HW Gamma	508.1 HW Gamma
Vanadium	35	34.7	15.25	6.808	32.66 HW Gamma	32.66 HW Gamma

From the above table, it is easy to see how outliers inflate the decision statistics (e.g., arsenic) used to estimate background level concentrations.

3.2.2 NWSY subsurface soils

ANOVA test was performed to determine if concentration distributions of COCs in the 4 soil associations are comparable. The ANOVA test results are given in Appendix, Table A-5. Based upon ANOVA test results, it is concluded that concentrations of COCs found in 4 soil associations are comparable, and therefore data of the 4 soil associations can be combined to compute 95/95 UTLs. This means, a single background value can be computed for each of the selected COCs. In order to identify potentially impacted locations present in the site-specific data set, outlier tests were performed. The outlier test on arsenic data was performed using ½ DL values for NDs. The following table summarizes outlier test results.

Table 3.9: Outliers in NWSY subsurface soils

Metals	N	# Outliers	Outliers Value (ID)
Arsenic	13	2	42.7 (BGSB07-11) 26.2 (BGSB04-09)
Lead	13	0	
Manganese	13	3	2940 (BGSB07-11) 353(BGSB04-01) 284(BGSB04-09)
Vanadium	13	0	0

Table 3.10: 95/95UTLs based upon datasets with and without outliers for NWSY subsurface soil

Metals	N	Max	Raw Statistics		95/95 UTL	
			Mean	SD	No Outliers	With Outliers
Arsenic	11	13.8	5.615	4.983	19.64	78.54 Gamma
Lead	13	4.2	11.78	6.778	29.89	29.89 Normal
Manganese	10	94.5	39.88	37.11	325 Gamma	8011 Lognormal*
Vanadium	13	70.3	28.94	21.74	87.01 Normal	87.01 Normal

* It is easy to see how outliers inflate the decision statistics (arsenic, manganese) used to estimate background level concentrations.

Conclusion: The concentrations of the selected metals found in four soil associations of NWSY are (for both surface and subsurface) are comparable. The four surface (and subsurface) soil associations can be considered to represent a single population. Background concentrations (95/95 UTLs) can be computed based upon the combined surface (and subsurface) soil data set.

3.2.3 NWSY surface soil and subsurface soils combined

Just like the CAX site, hypothesis tests were conducted to determine if the concentrations of the COCs in surface and subsurface soils are comparable. The results are summarized in the following table.

Null Hypothesis H_0: Data from surface and subsurface soils are comparable and can be combined.
Alternate Hypothesis H_A: Surface and subsurface soils data are different and cannot be combined.

Table 3.11: Two Sample Test Results – NWSY surface soil versus NWSY subsurface soil

Metals	Test	Conclusion	P value ($\alpha = 0.05$)
Arsenic	WMW	Combine surface and subsurface soils	0.104
Lead	t-Test	Combine surface and subsurface soils	0.885
Manganese	WMW	Do not combine surface and subsurface soils	0.018
Vanadium	WMW	Combine surface and subsurface soils	0.074

Test results for arsenic, lead, and vanadium suggest that surface and subsurface soil data may be combined to compute 95/95UTLs. The following table summarizes UTLs computed using the combined data sets.

Table 3.12: 95/95UTLs based upon NWSY surface and subsurface data combined

Metals	N	Max	Raw Statistics		95/95 UTL
			Mean	SD	
Arsenic	44	13.8	2.826	3.02	13.8 Nonparametric
Lead	44	25.5	11.63	4.41	20.86 Normal
Vanadium	48	70.3	18.96	13.86	64.95

Conclusion: For CAX area, it is concluded that there are significant differences in concentrations of selected COCs found surface and surface soils. Since only four metals were evaluated for NWSY area, and manganese concentrations are found to be significantly different in surface and subsurface soils. In order to keep things simple and comparable for the two background areas, it is suggested that 95/95 UTLs be computed separately for surface and subsurface soils. Often in practice, separate background values are computed for surface and subsurface soils.

3.3 Background Statistics for CAX and NWSY Background Areas all soils combined

Next, hypothesis tests were conducted to determine if concentrations of COCs in surface and subsurface from CAX are comparable to corresponding surface and subsurface concentrations found in NWSY. The detailed test results for each of the metals are given in Appendix, Tables A-6 to A-9. The main results are summarized in the following table.

Null Hypothesis H_0: Data from CAX and NWSY can be considered coming from a single population
Alternate Hypothesis H_A: Data from CAX and NWSY represent different populations

Table 3.13: Two Sample Test Results – CAX soils versus NWSY soils – (surface and subsurface combined)

Metals	Test	Result	P value ($\alpha = 0.05$)
Arsenic	WMW	Do not combine CAX and NWSY soils	0.000
Lead	WMW	Do not combine CAX and NWSY soils	0.000
Manganese	WMW	Combine CAX and NWSY soils	0.504
Vanadium	WMW	Do not combine CAX and NWSY soils	0.0074

Table 3.14: NWSY/CAX Statistics – Using all background data

Metals	N	Max	Raw Statistics		95/95 UTL
			Mean	SD	
Manganese	121	340	76.26	72.05	259.5

For most of the COCs considered in this report, it is noted that concentrations of those COCs found in CAX and NWSY are not comaprable. Therefore, it is suggested that estimates (95/95UTLs) of background concentrations should be computed separately for the two background sites: CAX and NWSY.

Conclusion: Concentrtaions for the selected COCs in the two background areas: CAX and NWSY are significantlly different. Therefore, separate background level concentrations should be computed (95/95 UTLs) for the two background areas.

Error in Computation: While reviewing the CH2M HILL Report, some discrepancies were idenified. For an example, location BGSB04-09 (353) represents an outlier for manganese (also found in the CH2M report) for soil association 3 and not from soil association 1 (incorrectly included in calcluations for soil asscoiation type 1). It appears that this outlier has been incorrectly included in the calculation of manganese UTL of 244.8 for soil association 1.

It is suggested that CH2M HILL double check its calculations to assure that all statistics are correctly computed.

4.0 Background Analysis for Organics in Soils

CAX background data sets consist mostly of NDs for the four soil associations. Hence the data from the four soil associations for both surface and subsurface were combined to compute UTLs after testing for outliers. No organics background data are available for the NWSYsite. Due to lack of detected results, 95/95 UTLs are computed based upon the combined surface and subsurface data collected from the CAX site. Several (6) outliers were identified for total organics as summarized in Table 4.1.

Table 4.1: Outliers for Total Organics - Surface and Subsurface Data Combined

Chemical	N	# Outliers	Outliers Value (ID)
Total Organics	40	6	133000 (BG1-SB03-01) 55100 (BG1-SB09-01) 52360(BG1-SB06-01) 40740 (BG1-SB05-01) 34600 (BG1-SB04-01) 28660 (BG1-SB01-01)

The 95/95UTLs for selected COCs are summarized in Table 4.2.

Table 4.2: Statistics for Organic Compounds - Surface and Subsurface Data Combined

Organics	# Detects	# NDs	Max (detected)	Raw Statistics (using detects)		95/95 UTL	
				Mean	SD	EPA*	CH2M HILL
Benzaldehyde	4	75	100	76	27.72	123.1 KM UTL*	123 KM UTL
Benzo(a)pyrene	1	78	4.2	-	-	-	-

Dieldrin	7	72	4.5	3	0.927	3.282 KM UTL	3.54 KM UTL
Endosulfan Sulphate	7	72	3.4	2.6	0.735	3.516 KM UTL	3.54 KM UTL
Total Organics	34	0	10600	5315	2240	11314 HW Gamma	14900 Gamma

***EPA = EPA Las Vegas**

For Benzaldehyde, using the procedure used by CH2M HILL, the reviewers also get the same value for 95/95UTL. This gives us confidence in the computations made by CH2M HILL. However, based upon the sample size requirements summarized in ProUCL Tech Guide (Chapter 1), 95/95 UTL of 123.1 for Benzaldehyde (4detects and 75 NDs) deemed as an unreliable estimate of the background concentration.

For total organics, EPA identified 6 statistical outliers, and CH2M reported only 5 outliers (first 5 in Table 4.1 above). Inclusion of the last outlier, 28660 is the cause of a higher value, 14900 for 95/95UTL.

Dealing with nondetects: It is not easy to compute reliable decision statistics based upon data sets consisting of only a few detected values (e.g., 1 or 2). In a data set consisting mostly of NDs (e.g., >95%), a 95/95 UTL may also be considered a ND value. One can use nonparametric KM method to compute a 95/95UTL when number of detected observations is at least 4-5 (more are preferred for higher confidence) and percentage of NDs is less than 95%. However, the uncertainty associated with such a decision statistic (95/95 UTL) remains high. In such situations, one may want to use the largest or next largest detected value (provided they are not outliers) as an estimate of the background level concentration. However, it is the recommendation of EPA that organic background concentrations be eliminated given the high uncertainty surrounding the calculations involving a large number of nondetects.

5.0 Background Analysis for Groundwater

Following, a similar procedure as used for metals in soils, background evaluations were performed for groundwater data for the selected COCs identified by EPA. Results of outlier analysis performed on groundwater data are summarized in the following table.

Table 5.1: Outliers in groundwater

Chemical	N	# Outliers	Outliers Value (ID)
Arsenic, dissolved	32	3	6.5 (YBKG-GW09A-YE-0809) 2.5 (YBKG-GW08A-CC-0809) 2 (YBKL-GW01P-CC-0809)
Chromium, dissolved	32	1	27.8(YBKG-GW09A-YE-0809)
Arsenic	32	6	17.8 (YBKL-GW01P-CC-0809) 17.2 (YBKL-GW01-CC-0809) 15.4 (YBKG-GW01A-YE-0809) 8.9 (YBKG-GW07-CC-0809) 7.8 (YBKG-GW09A-YE-0809) 4.3 (YBKG-GW08A-CC-0809)
Manganese	32	4	279 (YBKG-GW01A-YE-0809) 126 (YBKG-GW10-CC-0809) 104 (YBKG-GW07-CC-0809)

Table 5.2: 95/95 UTLs with and without Outliers

Chemical	N (no outliers)	Max	Raw Statistics		UTLs		
			Mean	SD	EPA (no outliers)	EPA (with outliers)	CH2M
Arsenic, dissolved	29	1.6	0.614	0.329	1.552 HW Gamma	3.18 Lognormal	1.37 Gamma
Mercury, dissolved	32 (29 NDs)	0.14	0.104	0.0279	0.165 KM		0.118 KM
Chromium, dissolved	31 (19 NDs)	5.8	2.05	1.399	5.123 KM	13.1 Lognormal	6.04 KM
Nitrobenzene	32 (30 NDs)	9.4	2.613	1.183	5.199 KM		5.64 KM
Arsenic	26	2.5	0.903	0.552	2.518 HW Gamma	17.8 Nonparametric	2.21 Gamma
Manganese	28 (4 NDs)	13.4	29.54	12.97	58.66 KM	151.6 KM	57.9 Normal

Conclusion

For mercury, dissolved in groundwater, there are only 3 detects and they are all lower than the 29 nondetects with detection limit of 0.2. Three detected values for mercury are: 0.072, 0.1 and 0.14. The rest of the observations were nondetects with a detection limit of 0.2. As mentioned before, it is not possible to compute a reliable decision statistic (e.g., 95/95UTL) based upon such data sets with a few detects. In such situations, one may use the maximum or the next to the maximum detected value (provided that value is not an outlier) as an estimate of the background threshold concentration. As mentioned previously, EPA recommends that background concentrations calculated with a large number of nondetects be eliminated given the high uncertainty. For mercury, the below maybe acceptable to EPA, given that mercury is not identified as a COC for the Operable Unit. This should be discussed with the project team, as the statistics are highly suspect.

In the present case, for mercury one may use 0.1 (second largest detected value) as an estimate of the background level concentration.

For Nitrobenzene, there were only 2 detected values: 2.4 and 9.4, and rest of the 30 results are nondetects with detection limit of 0.25. It appears the detected value 9.4 may represent an outlier. Its cause should be determined as it may be a release. In such situation, the background concentration may be estimated by the next largest value which is = 2.613 or just a nondetect value. Alternatively, since most of the values for nitrobenzene are NDs, it can be determined that nitrobenzene is not present in background groundwater.

6.0 Summary and Conclusions

- For most of the COCs evaluated in this report, significant differences were found in contaminant concentrations of surface and subsurface soils (for both CAX and NWSY), therefore, it is suggested to compute 95/95 UTLs separately for surface and subsurface soils.

- The concentrations of the selected metals found in the four soil associations of CAX area (for both surface and subsurface individually) are comparable. Therefore, four surface (and subsurface) soil associations can be considered to represent a single surface (and subsurface) population for CAX area. Background concentrations (95/95 UTLs) can be computed based upon the combined surface soil data set, and combined subsurface soil data set. A similar conclusion is derived for the four soil associations of NWSY area.

  This is contrary to the CH2M Report which states that only soil associations 3 and 4 could be combined.

- Concentrations for the selected COCs in the two background areas: CAX and NWSY are significantlly different. Therefore, separate background level concentrations should be computed for the two background areas.

- As mentioned before, it is not possible to compute a reliable decision statistic (e.g., 95/95UTL) based upon data sets consisting mostly of nondetect results (e.g., mercury and nitrobenzene in groundwater). EPA recommends that background concentrations calculated with a large number of nondetects be eliminated given the high uncertainty. Mercury maybe an exception as discussed above, based upon input from the project team.

- Overall, 95/95 UTL computations made by CH2M HILL appear to be correct except in cases when the majority of data are nondetects.

- Since some errors were identified in the calculations performed, it is suggested that CH2M HILL double check its calculations to assure that all statistics are correctly computed.

- In some cases as identified in this report, it is noted that CH2M HILL included outliers in their compuations resulting in inflating values of UTLs. These outlier concentrations may have come from areas that have potentially been impacted by site operations. Elevated observations (outliers) from these areas may represent releases. Therefore, outliers should not be included in the computation of 95/95UTLs.

7.0 References

Hoaglin, D.C., Mosteller, F., and Tukey, J.W. 1983. *Understanding Robust and Exploratory Data Analysis*. John Wiley, New York.

Rousseeuw, P.J., and Leroy, A.M. 1987, *Robust Regression and Outlier Detection*, John Wiley and Sons, NY.

Singh, A. 1993, *Omnibus Robust Procedures for Assessment of Multivariate Normality and Detection of Multivariate Outliers, In Multivariate Environmental Statistics*, Elsevier Science Publishers, Patil G.P. and Rao, C.R., Editors, 1993, pp. 445-488.

Singh, A., Maichle, R.W. and S. Lee 2006. On the Computation of a 95% Upper Confidence Limit of the Unknown Population Mean Based Upon Data Sets with Below Detection Limit Observations. EPA 2006, EPA/600/R-06/022.

U.S. Environmental Protection Agency (EPA) U.S. Nuclear Regulatory Commission, *et al.* 2000. *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Revision 1. EPA 402-R-97-016*. Available at http://www.epa.gov/radiation/marssim/ or from http://bookstore.gpo.gov/index.html (GPO Stock Number for Revision 1 is 052-020-00814-1).

U.S. Environmental Protection Agency (EPA). 2002. *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites*. EPA 540-R-01-003-OSWER 9285.7-41. September, 2002.

U.S. Environmental Protection Agency (EPA). 2010. *ProUCL 4.00.05 Software for Calculating Upper Confidence Limits (UCLs)*, Office of Research and Development, April 2010. http://www.epa.gov/esd/tsc/TSC_form.htm

U.S. Environmental Protection Agency (EPA). 2010. *ProUCL 4.00.05 Technical Guide (Draft)* EPA/600/R-07/041, Office of Research and Development, April 2010.

U.S. Environmental Protection Agency (EPA). 2009. *Scout 2008 – A Robust Statistical Package*, Office of Research and Development, February 2009. http://www.epa.gov/esd/databases/scout/abstract.htm#Scout2008v101

Appendix

Table A-1 Classical One-Way ANOVA for the 4 metals in surface soil of the CAX Background Area

Arsenic

Group	Obs	Mean	SD	Variance
ssi-bk1	10	3.953	3.382	11.44
ssi-bk2	10	1.286	1.06	1.124
ssi-bk3	10	0.908	0.447	0.2
ssi-bk4	10	2.423	3.853	14.84
Grand Statistics (All data)	40	2.143	2.794	7.809

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	56.13	3	18.71	2.712	0.0593
Within Groups	248.4	36	6.9		
Total	304.5	39			
Pooled Standard Deviation		2.627			
R-Sq		0.184			
Adj (R-Sq)		0.116			

Lead

Group	Obs	Mean	SD	Variance
ssi-bk1	10	23.98	40.46	1637
ssi-bk2	10	8.5	1.57	2.464
ssi-bk3	10	9.07	2.161	4.669
ssi-bk4	10	9.58	3.631	13.18
Grand Statistics (All data)	40	12.78	20.63	425.5

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	1678	3	559.2	1.35	0.274
Within Groups	14917	36	414.4		
Total	16595	39			
Pooled Standard Deviation		20.36			
R-Sq		0.101			
Adj (R-Sq)		0.0262			

Manganese

Group	Obs	Mean	SD	Variance
ssi-bk1	10	42.94	35.02	1227
ssi-bk2	10	128.2	62.29	3880
ssi-bk3	10	112.7	86.69	7515
ssi-bk4	10	132.2	132.5	17548
Grand Statistics (All data)	40	104	91.06	8292

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	51850	3	17283	2.291	0.0947
Within Groups	271533	36	7543		
Total	323383	39			
Pooled Standard Deviation		86.85			
R-Sq		0.16			
Adj (R-Sq)		0.0904			

Vanadium

Group	Obs	Mean	SD	Variance
ssi-bk1	10	18.78	16	256
ssi-bk2	10	8.49	2.938	8.634
ssi-bk3	10	9.21	5.532	30.6
ssi-bk4	10	9.25	6.711	45.04
Grand Statistics (All data)	40	11.43	9.853	97.08

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	723.5	3	241.2	2.835	0.0518
Within Groups	3063	36	85.08		
Total	3786	39			
Pooled Standard Deviation		9.224			
R-Sq		0.191			
Adj (R-Sq)		0.124			

Table A-2 Classical One-Way ANOVA for Lead in surface soil of the CAX Background Area after removing the 2 outliers

Lead

Group	Obs	Mean	SD	Variance
ssi-bk1	8	8.638	5.183	26.87
ssi-bk2	10	8.5	1.57	2.464
ssi-bk3	10	9.07	2.161	4.669
ssi-bk4	10	9.58	3.631	13.18
Grand Statistics (All data)	38	8.963	3.195	10.21

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	6.913	3	2.304	0.211	0.888
Within Groups	370.9	34	10.91		
Total	377.8	37			

Pooled Standard Deviation	3.303
R-Sq	0.0183
Adj (R-Sq)	-0.0683

Table A-3 Classical One-Way ANOVA for the 4 metals in subsurface soil of the CAX Background Area

Arsenic

Group	Obs	Mean	SD	Variance
sbi-bk1	10	4.427	4.083	16.67
sbi-bk2	10	4.82	4.222	17.83
sbi-bk3	10	1.173	0.444	0.197
sbi-bk4	10	4.526	6.297	39.65
Grand Statistics (All data)	40	3.737	4.407	19.42

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	88.46	3	29.49	1.586	0.21
Within Groups	669.1	36	18.59		
Total	757.5	39			

Pooled Standard Deviation	4.311
R-Sq	0.117
Adj (R-Sq)	0.0432

Lead

Group	Obs	Mean	SD	Variance
sbi-bk1	10	17.9	25.37	643.6
sbi-bk2	10	6.86	1.251	1.565
sbi-bk3	10	5.2	1.169	1.367
sbi-bk4	10	6.06	1.274	1.623
Grand Statistics (All data)	40	9.005	13.3	177

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	1069	3	356.2	2.198	0.105
Within Groups	5834	36	162		
Total	6902	39			

Pooled Standard Deviation	12.73
R-Sq	0.155
Adj (R-Sq)	0.0844

Manganese

Group	Obs	Mean	SD	Variance
sbi-bk1	10	24	25.8	665.5
sbi-bk2	10	65.76	37.65	1418
sbi-bk3	10	46.68	58.87	3466
sbi-bk4	10	79.78	62.85	3950
Grand Statistics (All data)	40	54.06	51.41	2642

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	17565	3	5855	2.465	0.0779
Within Groups	85492	36	2375		
Total	103057	39			

Pooled Standard Deviation	48.73
R-Sq	0.17
Adj (R-Sq)	0.101

Vanadium

Group	Obs	Mean	SD	Variance
sbi-bk1	10	18.09	16.09	258.8
sbi-bk2	10	22.44	8.491	72.1
sbi-bk3	10	13.42	9.647	93.07
sbi-bk4	10	19.16	10.43	108.7
Grand Statistics (All data)	40	18.28	11.56	133.6

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	417.4	3	139.1	1.045	0.385
Within Groups	4794	36	133.2		
Total	5211	39			

Pooled Standard Deviation	11.54
R-Sq	0.0801
Adj (R-Sq)	0.00343

Table A-4 Classical One-Way ANOVA for the 4 metals in surface soil of the NWSY Background Area

Arsenic

Group	Obs	Mean	SD	Variance
1	3	2.233	1.106	1.223
2	12	2.101	1.227	1.505
3	13	2.054	1.296	1.679
4	7	10.53	23.55	554.6
Grand Statistics (All data)	35	3.78	10.52	110.7

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	398.4	3	132.8	1.223	0.318
Within Groups	3367	31	108.6		
Total	3765	34			

Pooled Standard Deviation	10.42
R-Sq	0.106
Adj (R-Sq)	0.0193

Lead

Group	Obs	Mean	SD	Variance
1	3	15.63	7.537	56.81
2	12	10.42	3.325	11.05
3	13	16.88	11.6	134.5
4	7	13.87	1.161	1.349
Grand Statistics (All data)	35	13.96	7.911	62.58

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	270.3	3	90.1	1.504	0.233
Within Groups	1857	31	59.91		
Total	2128	34			

Pooled Standard Deviation	7.74
R-Sq	0.127
Adj (R-Sq)	0.0426

Manganese

Group	Obs	Mean	SD	Variance
1	3	184	126.4	15988
2	12	162	158.6	25146
3	13	82.67	89.5	8011
4	7	85.91	72.86	5309
Grand Statistics (All data)	35	119.2	120.8	14595

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	59658	3	19886	1.412	0.258
Within Groups	436571	31	14083		
Total	496229	34			

Pooled Standard Deviation	118.7
R-Sq	0.12
Adj (R-Sq)	0.0351

Vanadium

Group	Obs	Mean	SD	Variance
1	3	16.43	6.679	44.6
2	12	13.28	4.607	21.22
3	13	15.79	8.378	70.19
4	7	17.13	7.43	55.21
Grand Statistics (All data)	35	15.25	6.808	46.34

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	79.53	3	26.51	0.549	0.652
Within Groups	1496	31	48.26		
Total	1576	34			

Pooled Standard Deviation	6.947
R-Sq	0.0505
Adj (R-Sq)	-0.0414

Table A-5 Classical One-Way ANOVA for the 4 metals in subsurface soil of the NWSY Background Area

Arsenic

Group	Obs	Mean	SD	Variance
3	3	12.83	12.63	159.5
2	5	6.14	4.37	19.09
4	5	12.29	17.83	317.8
Grand Statistics (All data)	13	10.05	12.22	149.3

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	124.8	2	62.41	0.374	0.697
Within Groups	1667	10	166.7		
Total	1792	12			

Pooled Standard Deviation	12.91
R-Sq	0.0697
Adj (R-Sq)	-0.116

Lead

Group	Obs	Mean	SD	Variance
3	3	8.767	4.486	20.12
2	5	15.74	7.963	63.4
4	5	9.64	5.678	32.24
Grand Statistics (All data)	13	11.78	6.778	45.95

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	128.5	2	64.27	1.52	0.265
Within Groups	422.8	10	42.28		
Total	551.4	12			

Pooled Standard Deviation	6.502
R-Sq	0.233
Adj (R-Sq)	0.0798

Manganese

Group	Obs	Mean	SD	Variance
3	3	243.8	133.8	17916
2	5	40.5	38.2	1459
4	5	608.4	1304	1699605
Grand Statistics (All data)	13	305.8	799	638437

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	821153	2	410576	0.6	0.567
Within Groups	6840087	10	684009		
Total	7661240	12			

Pooled Standard Deviation	827
R-Sq	0.107
Adj (R-Sq)	-0.0714

Vanadium

Group	Obs	Mean	SD	Variance
3	3	32.83	23.02	529.7
2	5	33.06	17.85	318.5
4	5	22.48	27.39	750
Grand Statistics (All data)	13	28.94	21.74	472.7

Classical One-Way Analysis of Variance Table

Source	SS	DOF	MS	V.R.(F Stat)	P-Value
Between Groups	339	2	169.5	0.318	0.735
Within Groups	5334	10	533.4		
Total	5673	12			

Pooled Standard Deviation	23.09
R-Sq	0.0598
Adj (R-Sq)	-0.128

Table A-6 Gehan's Test for Arsenic in CAX and NWSY Background Areas

Sample 1 Data: Arsenic(cax)

Sample 2 Data: Arsenic(nwsy)

Raw Statistics

	Sample 1	Sample 2
Number of Valid Samples	72	44
Number of Non-Detect Data	37	0
Number of Detect Data	35	44
Minimum Non-Detect	0.23	N/A
Maximum Non-Detect	3.1	N/A
Percent Non detects	51.39%	0.00%
Minimum Detected	0.094	0.36
Maximum Detected	6.8	13.8
Mean of Detected Data	2.709	2.826
Median of Detected Data	2.4	1.65
SD of Detected Data	1.816	3.02

Sample 1 vs Sample 2 Gehan Test

H0: Mu of Sample 2 = Mu of Sample 1

Gehan z Test Value	3.453
Lower Critical z (0.025)	-1.96
Upper Critical z (0.975)	1.96
P-Value	5.5409E-4

Conclusion with Alpha = 0.05

Reject H0, Conclude Sample 2 <> Sample 1

P-Value < alpha (0.05)

Table A-7 WMW Test for Lead in CAX and NWSY Background Areas

Sample 2 Data: Lead(nwsy)

Sample 1 Data: Lead(cax)

Raw Statistics

	Sample 1	Sample 2
Number of Valid Samples	75	44
Number of Distinct Samples	47	38
Minimum	1.1	4.2
Maximum	16	25.5
Mean	7.447	11.63
Median	6.8	11.4
SD	2.901	4.41
SE of Mean	0.335	0.665
W-Stat Rank Scores	3515	3626
Expected W Scores (H0)	4500	2640
SD of W Scores (H0)	181.7	181.7

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 2 = Mean/Median of Sample 1

Sample 2 Rank Sum W-Stat	3626
WMW U-Stat	2636
WMW Expected U	1650
WMW SD of U	181.7
Standardized WMW U-Stat	5.422
Lower Critical Value (0.025)	-1.96
Upper Critical Value (0.975)	1.96
Approximate P-Value	5.8855E-8

Approximate P-Value < alpha (0.05)

Conclusion with Alpha = 0.05

Reject H0, Conclude Sample 2 <> Sample 1

Table A-8 WMW Test for Manganese in CAX and NWSY Background Areas

Sample 2 Data: Manganese(nwsy)

Sample 1 Data: Manganese(cax)

Raw Statistics

	Sample 1	Sample 2
Number of Valid Samples	77	43
Number of Distinct Samples	74	43
Minimum	2.9	3.5
Maximum	304	340
Mean	71.23	85.27
Median	51.1	68.9
SD	64.37	84.16
SE of Mean	7.335	12.83
W-Stat Rank Scores	4573	2688
Expected W Scores (H0)	4659	2602
SD of W Scores (H0)	182.7	182.7

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 2 = Mean/Median of Sample 1

Sample 2 Rank Sum W-Stat	2688
WMW U-Stat	1742
WMW Expected U	1656
WMW SD of U	182.7
Standardized WMW U-Stat	0.468
Lower Critical Value (0.025)	-1.96
Upper Critical Value (0.975)	1.96
Approximate P-Value	0.64

Approximate P-Value >= alpha (0.05)

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 2 = Sample 1

Table A-9 WMW Test for Vanadium in CAX and NWSY Background Areas

Sample 2 Data: Vanadium(nwsy)

Sample 1 Data: Vanadium(cax)

Raw Statistics

	Sample 1	Sample 2
Number of Valid Samples	77	48
Number of Distinct Samples	71	44
Minimum	2.1	1.2
Maximum	37.8	70.3
Mean	13.55	18.96
Median	10.9	14.9
SD	9.13	13.86
SE of Mean	1.041	2
W-Stat Rank Scores	4324	3552
Expected W Scores (H0)	4851	3024
SD of W Scores (H0)	197	197

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 2 = Mean/Median of Sample 1

Sample 2 Rank Sum W-Stat	3552
WMW U-Stat	2376
WMW Expected U	1848
WMW SD of U	197
Standardized WMW U-Stat	2.675
Lower Critical Value (0.025)	-1.96
Upper Critical Value (0.975)	1.96
Approximate P-Value	0.00747

Approximate P-Value < alpha (0.05)

Conclusion with Alpha = 0.05

Reject H0, Conclude Sample 2 <> Sample 1

This concludes EPA's review of the Navy's February, 2010 draft *Calculation of Background Concentrations TM* for the NWSY NPL site, and the CAX NPL site. If you have any questions, please feel free to call me at (215) 814-3357,

Sincerely,

Robert Thomson, P.E., R.E.M.
Federal Facility Remediation (3HS11)

Cc: Wade Smith (VaDEQ, Richmond)
Dawn Ioven (USEPA, 3HS41)

Navy's Response to EPA's Comments on Draft TM

CH2M HILL
5700 Cleveland Street, Suite 101
Virginia Beach, VA 23462
Tel 757.518.9666

June 30, 2010

358549.RP.FR

Mr. Robert Thomson, P.E., R.E.M.
Office of Federal Facility Remediation
United States Environmental Protection Agency (EPA), Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Subject: Response to USEPA Comments: Draft Technical Memorandum, *Calculation of Background Concentrations Technical Memorandum at Naval Weapons Station Yorktown and Cheatham Annex*, Naval Weapons Station Yorktown (WPNSTA), Yorktown, VA and Cheatham Annex (CAX), Williamsburg, VA

Dear Mr. Thomson:

This letter is in response to comments received on May 5, 2010 regarding the referenced draft document. Each comment is presented in *italics*, followed by the Navy's response. The order of the comments and responses, as provided by USEPA, has been modified slightly to allow for the most broad-reaching issues to be addressed first.

Comments and Responses:

- *Concentrations for the selected COCs in the two background areas: CAX and NWSY are significantly different. Therefore, separate background level concentrations should be computed for the two background areas.*

Response: Although USEPA's analysis indicates a statistical difference between the soils at Yorktown and CAX, it should be noted that these facilities are immediately adjacent to each other, are part of the same watershed and have undergone the same environmental genesis (i.e., hydrology, erosion, deposition). The bases consist of identical soil types as presented in the Soil Conservation Survey for York County. Some of the statistical differences may, in part, be a result of slightly different depths at which the samples were collected at each base. However, the Navy believes that in order to best support the decision making process, a wider range of data should be considered in the data set. The data set should not be determined solely on the statistical fit of the data. USEPA agreed to the approach presented in the work plan to combine the data sets based on the physical setting of the bases. The amount of data, particularly for the groundwater dataset at Cheatham Annex, is insufficient to separate the sets. Additional data collection would unnecessarily delay site decisions and is currently not funded. Therefore, the Navy believes that the sample data should be combined.

Further information on the soils, geology, and hydrology of the two bases may be found in the following publications:

Thomas, P. and Harper, D., *Soil Survey of Tidewater Cities Area, Virginia.* U.S. Department of Agriculture, Natural Resources Conservation Service. 2008.

Brockman, A., Nelms, D. and others. *Geohydrology of the Shallow Aquifer System, Naval Weapons Station Yorktown, Yorktown, Virginia.* U.S. Geological Survey Water-Resources Investigations Report 97-4188. 1997.

- *For most of the COCs evaluated in this report, significant differences were found in contaminant concentrations of surface and subsurface soils (for both CAX and NWSY), therefore, it is suggested to compute 95/95 UTLs separately for surface and subsurface soils.*

Response: Calculating separate UTLs for surface and subsurface soils is acceptable to the Navy. The background UTLs in the draft final document will be updated accordingly.

- *The concentrations of the selected metals found in the four soil associations of CAX area (for both surface and subsurface individually) are comparable. Therefore, four surface (and subsurface) soil associations can be considered to represent a single surface (and subsurface) population for CAX area. Background concentrations (95/95 UTLs) can be computed based upon the combined surface soil data set, and combined subsurface soil data set. A similar conclusion is derived for the four soil associations of NWSY area.*

  This is contrary to the CH2M Report which states that only soil associations 3 and 4 could be combined.

Response: The Navy agrees to combine all soil associations for the purpose of UTL calculation.

- *As mentioned before, it is not possible to compute a reliable decision statistic (e.g., 95/95UTL) based upon data sets consisting mostly of non-detect results (e.g., mercury and nitrobenzene in groundwater). EPA recommends that background concentrations calculated with a large number of non-detects be eliminated given the high uncertainty. Mercury maybe an exception as discussed above, based upon input from the project team.*

Response: It is agreed that UTL calculations will not be completed for constituents for which data sets consist of a large number of non-detects.

- *Overall, 95/95 UTL computations made by CH2M HILL appear to be correct except in cases when the majority of data are non-detects.*

Response: Comment noted. Please see the previous response of proposed use of data with a majority of non-detects.

- *Since some errors were identified in the calculations performed, it is suggested that CH2M HILL double check its calculations to assure that all statistics are correctly computed.*

Response: The Navy is aware that one soil sample (BGSB04-09) may have been grouped within the wrong soil type. Following final resolution of sample groups, the statistics will be recalculated, but the incorrect grouping based on soils types will not have an impact on the final statistics. If there were any additional errors which were identified which would impact the new calculations, the Navy would appreciate the USEPA's help in identifying these.

- *In some cases as identified in this report, it is noted that CH2M HILL included outliers in their computations resulting in inflating values of UTLs. These outlier concentrations may have come from areas that have potentially been impacted by site operations. Elevated observations (outliers) from these areas may represent releases. Therefore, outliers should not be included in the computation of 95/95UTLs.*

Response: The intended approach during development of UTLs was to complete calculations without using outliers. There were probably some discrepancies in the outliers identified based on the grouping of soil associations in the USEPA calculations compared to the original Navy calculations. Any outliers will be excluded during the recalculations.

- *Groundwater, surface, and subsurface soil background data were collected from CAX and NWSY sites. These sites consist of four soil association types. For some locations, duplicate samples were collected. In such cases, higher value was retained and used in the statistical analyses performed by CH2M HILL to establish background level concentrations. For comparison sake, the reviewers also used the higher duplicate value, even though the use of the average of duplicates is a preferred method and is commonly used in practice.*

  However, for background evaluation studies, the use of the lower value of the duplicate results perhaps will be more appropriate resulting in a conservative estimate (95/95UTL) of the background level concentration.

Response: The Navy does not agree that use of the lower value of a pair of background duplicate samples is appropriate. During the comparison of site data to screening levels (e.g., RSLs, MCLs and background UTLs), the higher of the two site values is required in the comparison which reflects a more conservative measure. However, selecting the lower (and more conservative) duplicate value in the background data set will result in comparison of a conservatively high site value with a conservatively low background value. This may lead to unnecessary concerns of a release or clean up values below levels actually representative of background. The Navy requests the inclusion of the maximum duplicate number into the background data set for the purpose of UTL calculation.

- *When reviewing the CH2M HILL report, some discrepancies were identified. For an example location BGSB04-09 (353) represents an outlier for manganese (also found in the CH2M HILL report) for soil association 3 and not from soil association 1 (incorrectly included in calculations for soil association type 1. It appears this outlier has been incorrectly included in the calculation of manganese UTL of 244.8 for soil association 1.*

Response: Background calculations will be reevaluated and checked following agreement on the grouping of the data sets. After data partitioning decisions are completed, it will be determined if this result remains an outlier and the data may be excluded from the UTL calculation, as appropriate.

- *"However, it is the recommendation of EPA that organic background concentrations be eliminated given the high uncertainty surrounding the calculations involving a large number of nondetects."*

Response: The Navy agrees that a high degree of variability may exist with organic background concentrations and UTLs for these compounds will not be included in the revised calculations.

If you have any questions or comments regarding the above response to comments, please feel free to contact me at 757-873-1442, x41634.

Sincerely,

CH2M HILL

Marlene Ivester
Project Manager

cc: Mr. Chris Murray/NAVFAC Mid-Atlantic
Mr. Tom Kowalski/NAVFAC Mid-Atlantic
Ms. Sue Haug/USEPA
Mr. Wade Smith/VDEQ
Mr. Bill Friedmann/CH2M HILL
Ms. Laura Cook/CH2M HILL
Ms. Stephanie Sawyer/CH2M HILL
Mr. Adam Forshey/CH2M HILL

EPA’s Review of Navy’s Response

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Robert Thomson, P.E., R.E.M.
Office of Federal Facility Remediation

Direct Dial (215) 814-3357
Mail Code: 3HS11

Date: August 5, 2010

Mr. Thomas Kowalski
NAVFAC MIDLANT, Code EV3
9742 Maryland Avenue
Building N-26, Room 3208
Norfolk, VA 23511-3095

Re: Naval Weapons Station–Yorktown NPL site, Yorktown, Va.
Naval Supply Center – Cheatham Annex NPL site, Williamsburg, Va
Calculation of Background Concentrations Technical Memorandum
Review of the Navy's 6/30/10 response to EPA's 5/5/10 letter

Dear Mr. Kowalski:

The U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Navy's (Navy's) June 30, 2010 response to EPA's May 5, 2010 letter pertaining to the Navy's February, 2010 draft *Calculation of Background Concentrations Technical Memorandum* (TM) for the Naval Weapons Station-Yorktown (NWSY) NPL site, and the Naval Supply Center – Cheatham Annex (CAX) NPL site. Based upon that review, we offer the following:

1. Based upon rigorous statistical evaluations, it was concluded that concentrations of the COCs in CAX and NWSY base areas are significantly different. The EPA did not, as the Navy's response contends, agree to ultimately combine the data sets without first evaluating the appropriateness of doing so. Statistically, the data sets are different. Thus, any rationale for combining the data sets has not been clearly presented by the Navy. For evaluating the appropriateness of combining said data sets outside the realm of statistics, it is recommended that a sensitivity analysis be performed to determine the degree of variation between data sets. For such a comparison, EPA recommends using the old Yorktown inorganic background data set, the new Yorktown inorganic background data set, and the new/existing Cheatham Annex inorganic background data set (even though it is small). Comparison of inorganic background concentrations between the three data sets should be illustrated for discussion with the EPA. We are looking for the range of variability between the data sets.

2. For site versus background comparisons, typically the higher duplicate site value is compared with background statistics or some other screening level. For the

computation of background statistics, the use of the higher duplicate value may yield inflated values of background statistcis (e.g., 95/95UTLs). This is especially true when the difference between the duplicate values is large.

It is suggested again that the Navy use an appropriate duplicate value (e.g., average or lower) to compute background statistics. If the use of the lower duplicate value is not acceptable, the Navy may just use the commonly used average value.

This concludes EPA's review of the Navy's 6/30/10 response to EPA's 5/5/10 letter pertaining to the Navy's February, 2010 draft *Calculation of Background Concentrations TM* for the NWSY NPL site, and the CAX NPL site. Please note that the remaining Navy responses not directly addressed above are considered acceptable. Additionally, based upon the Navy's responses, recalculation of the background data is necessary given the responses by the Navy. It is noted that such recalculations may also be affected by the outcome of the two remaining issues outlined above.

If you have any questions, please feel free to call me at (215) 814-3357.

Sincerely,

Robert Thomson, P.E., R.E.M.
Federal Facility Remediation (3HS11)

Cc: Wade Smith (VaDEQ, Richmond)
Dawn Ioven (USEPA, 3HS41)

Navy's Response to EPA's Review

WPNSTA and CAX Background Study

Review of Latest EPA Comments and Team Consensus on Path Forward

August 2010

Presentation Purpose

- Review EPA's 8/5/10 response to the Navy's 6/30/10 RTC letter
- Discuss the appropriateness of combining the CAX and Yorktown data sets
- Team consensus on path forward for CAX background (BG) values

Review of EPA's 8/05/10 Response

- EPA Comment 1:

"Based upon rigorous statistical evaluations, it was concluded that concentrations of the COCs in CAX and NWSY base areas are significantly different. The EPA did not, as the Navy's response contends, agree to ultimately combine the data sets without first evaluating the appropriateness of doing so. Statistically, the data sets are different. Thus, any rationale for combining the data sets has not been clearly presented by the Navy. For evaluating the appropriateness of combining said data sets outside the realm of statistics, it is recommended that a sensitivity analysis be performed to determine the degree of variation between data sets. For such a comparison, EPA recommends using the old Yorktown inorganic background data set, the new Yorktown inorganic background data set, and the new/existing Cheatham Annex inorganic background data set (even though it is small). Comparison of inorganic background concentrations between the three data sets should be illustrated for discussion with the EPA. We are looking for the range of variability between the data sets."

Review of EPA's 8/05/10 Response continued

- Navy Response:

The EPA's 5/5/10 comments on the BG Study calculations technical memorandum provided examples of how the variability differed between the Yorktown and Cheatham Annex data sets. CH2M HILL's analysis of variance (ANOVA) indicated there were statistical differences. Therefore, performing a sensitivity analysis would simply reiterate this statistical finding and would not advance the discussion. The Navy contends that the statistical difference between the data sets should not preclude them from being combined. To view the combination of these data from strictly a statistical standpoint is academic and not practical for real world application, as non-statistical conditions, such as the environmental genesis (deposition, erosion, etc.) of both bases, are important and should be considered as well.

The next several slides that follow discuss why it is appropriate to combine the data sets.

Appropriateness to Combine the Data Sets

- Provides CAX with a more robust, useful BG set

- Example 1 - Inorganics in Surface Soil:

Constituent*	CAX UCLs/MAX BG (mg/kg)				WPNSTA UCLs/MAX BG (mg/kg)				EPA Vegas 95/95 UTL** (mg/kg)	
	Soil Assoc 1	Soil Assoc 2	Soil Assoc 3	Soil Assoc 4	Soil Assoc 1	Soil Assoc 2	Soil Assoc 3	Soil Assoc 4	CAX	WPNSTA
Arsenic	1.75/9.9	1.75/4.1	1.17/1.7J	4.48/12.6	2.82/3.4	2.92/4.2	2.71/5.8	17.66/63.9	4.501	4.528
Lead	9.41/136	9.41/11	10.32/12.2	12/16	18.98/22.7	11.81/16.5	20.40/43.1	20.08/38.7L	15.78	18.34
Manganese	164/257	164/257	163/278	209/435	242.17/298	208.38/413	262.89/340	190.53/491	332	403.6
Vanadium	10.19/50.3	10.19/15.2	12.42/22.1	13.14/26.1	19.38/21.2	16.35/20.8	19.39/27.8	22.69/34.7	27.38	32.66

Inorganic Data Qualifier Definition:
J = The associated value is an estimated quantity.
L= The analyte is present. The reported values may be biased low. The actual value is expected to be higher than reported.

*USEPA Vegas studied these constituents in their report on the draft *Background Calculation of Background Concentrations Technical Memorandum*, as provided in USEPA's May 5, 2010 comment letter.
**Without Outliers

Appropriateness to Combine the Data Sets, continued

- Example 2 - Inorganics in Subsurface Soil:

Constituent*	CAX UCLs/MAX BG (mg/kg)				WPNSTA UCLs/MAX BG (mg/kg)	EPA Vegas 95/95 UTL** (mg/kg)	
	Soil Assoc 1	Soil Assoc 2	Soil Assoc 3	Soil Assoc 4	Combined (no per Soil Assoc values)	CAX	WPNSTA
Arsenic	6.66/12.5	7.20/15.9	0.99/2.1	8.00/18.6	13.41/42.7	5.323	19.64
Lead	33/83.7	7.59/8.3	5.89/6.7	6.80/8.1	15.66/25.5L	8.831	29.89
Manganese	39/86.2	99/135	81/208	116/195	582.51/2940	172.5	325
Vanadium	27/53.8	27.36/33.2	2.39/36	25.2/35.1	36.59/70.3L	38.94	87.01

Inorganic Data Qualifier Definition:
J = The associated value is an estimated quantity.
L= The analyte is present. The reported values may be biased low. The actual value is expected to be higher than reported.

*USEPA Vegas studied these constituents in their report on the draft *Background Calculation of Background Concentrations Technical Memorandum*, as provided in USEPA's May 5, 2010 comment letter.
**Without Outliers

Appropriateness to Combine the Data Sets, continued

- From a geologic, hydrologic, and geomorphologic perspective, the soils of Yorktown and CAX are the same, and it is appropriate to combine the data.
  - The bases are adjacent.
  - Both bases derived from the same geomorphologic and geologic processes and are part of the same physiographic province.
  - Both have the same soil associations and underlying aquifers.

WPNSTA and CAX are Adjacent to Each Other

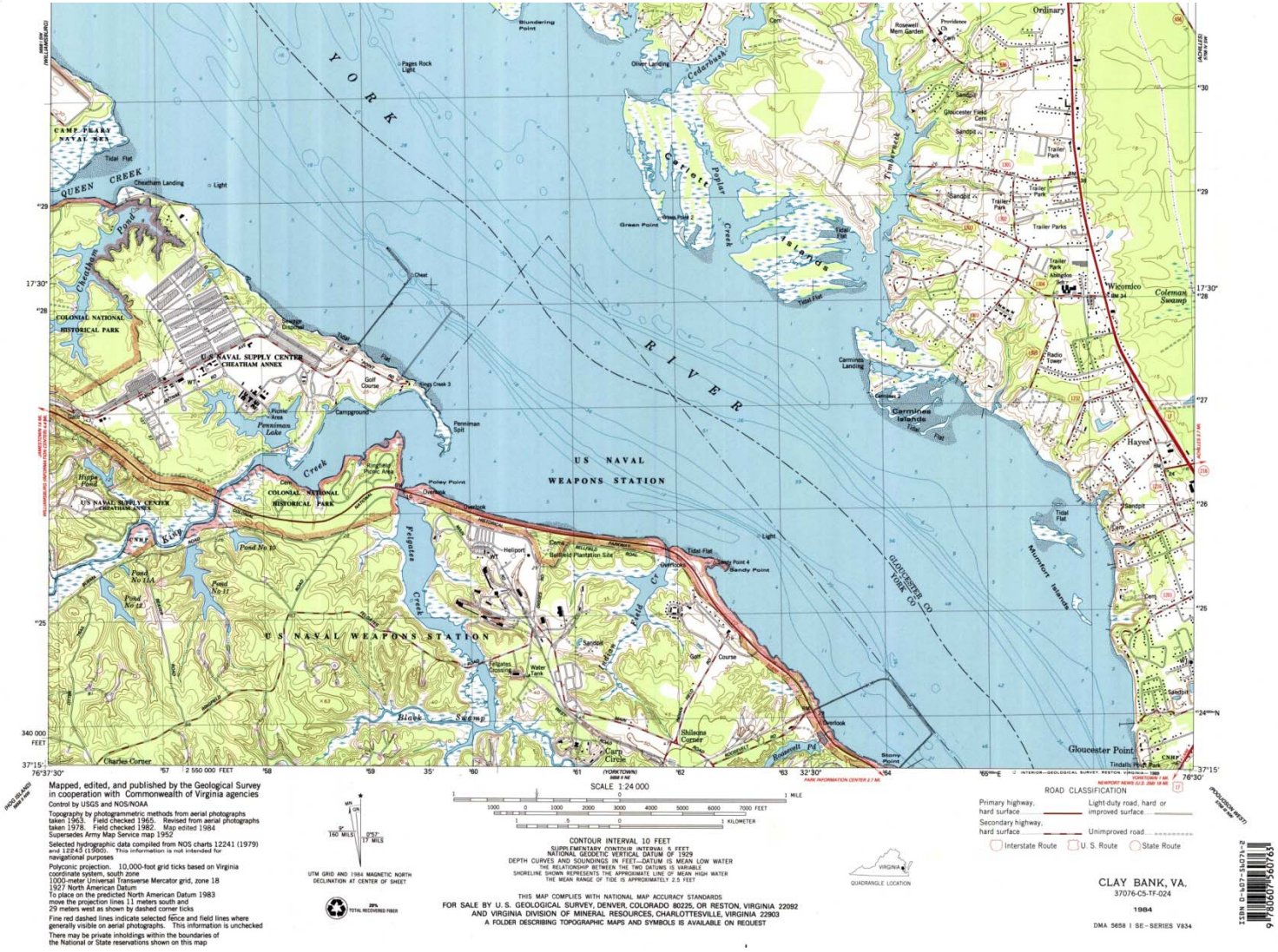
Legend
Activity Boundaries
City/County Boundaries

N
0 0.6 1.2 Miles

Figure 1-1
Location of WPNSTA Yorktown and CAX
Site Management Plan for FY 2010 to 2011
WPNSTA Yorktown, Yorktown, Virginia
CAX, Williamsburg, Virginia

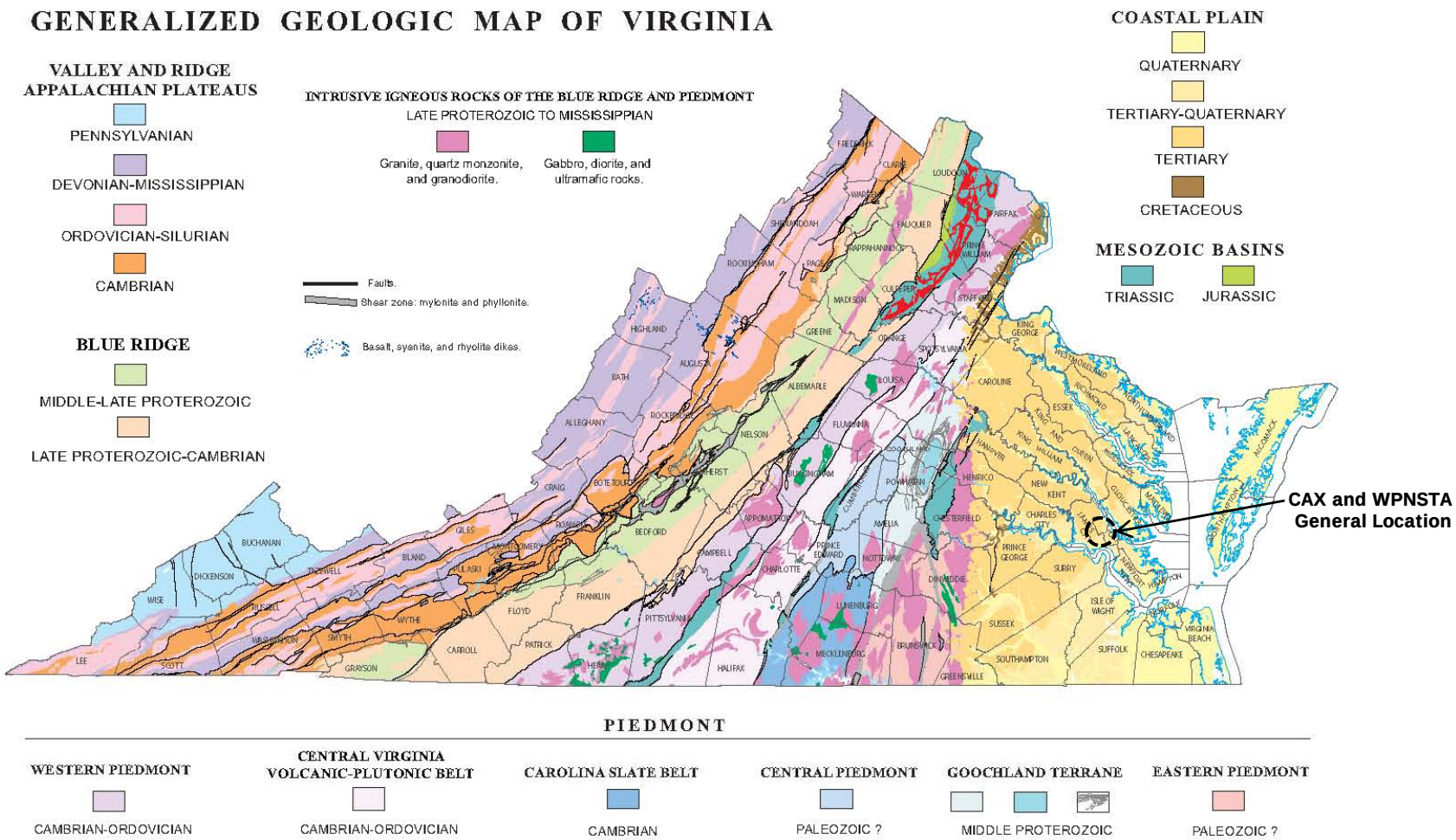
CH2MHILL

WPNSTA and CAX have the same Geomorphology



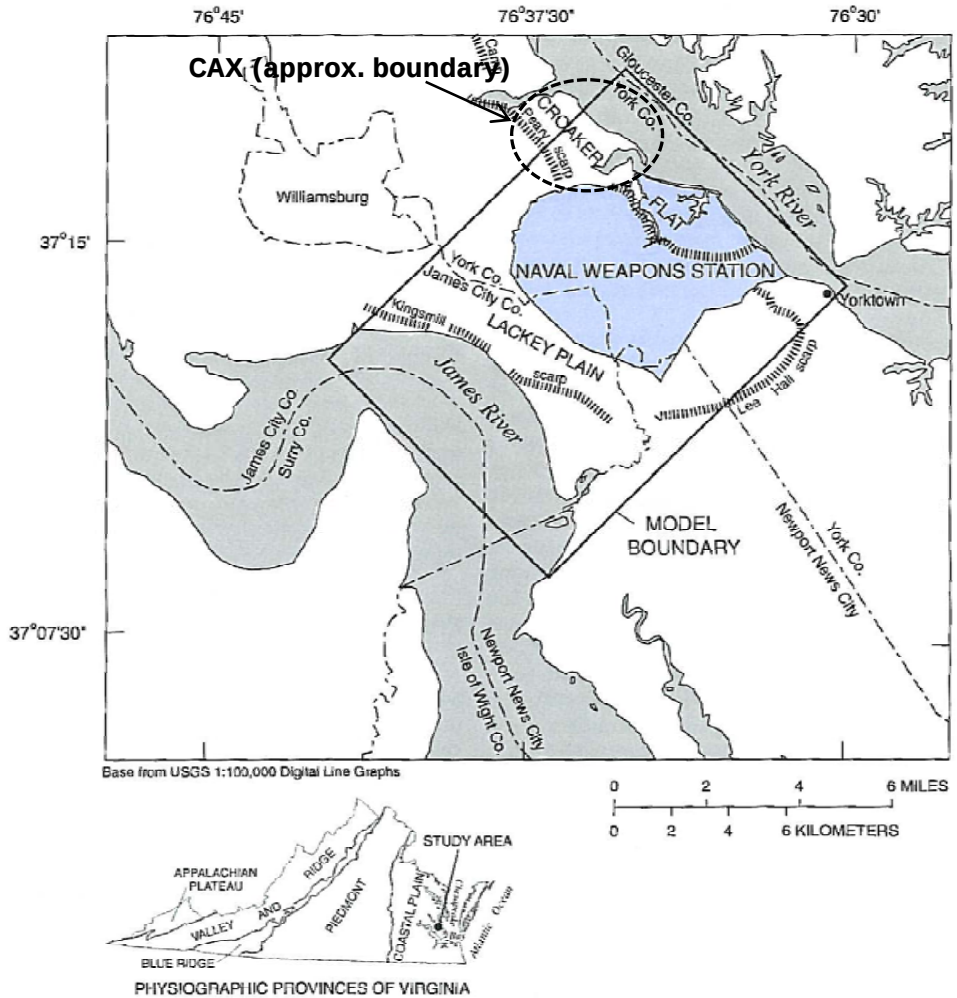
(Excerpt from: U.S. Geological Survey, Clay Bank Quadrangle, VA)

WPNSTA and CAX have the same Geology



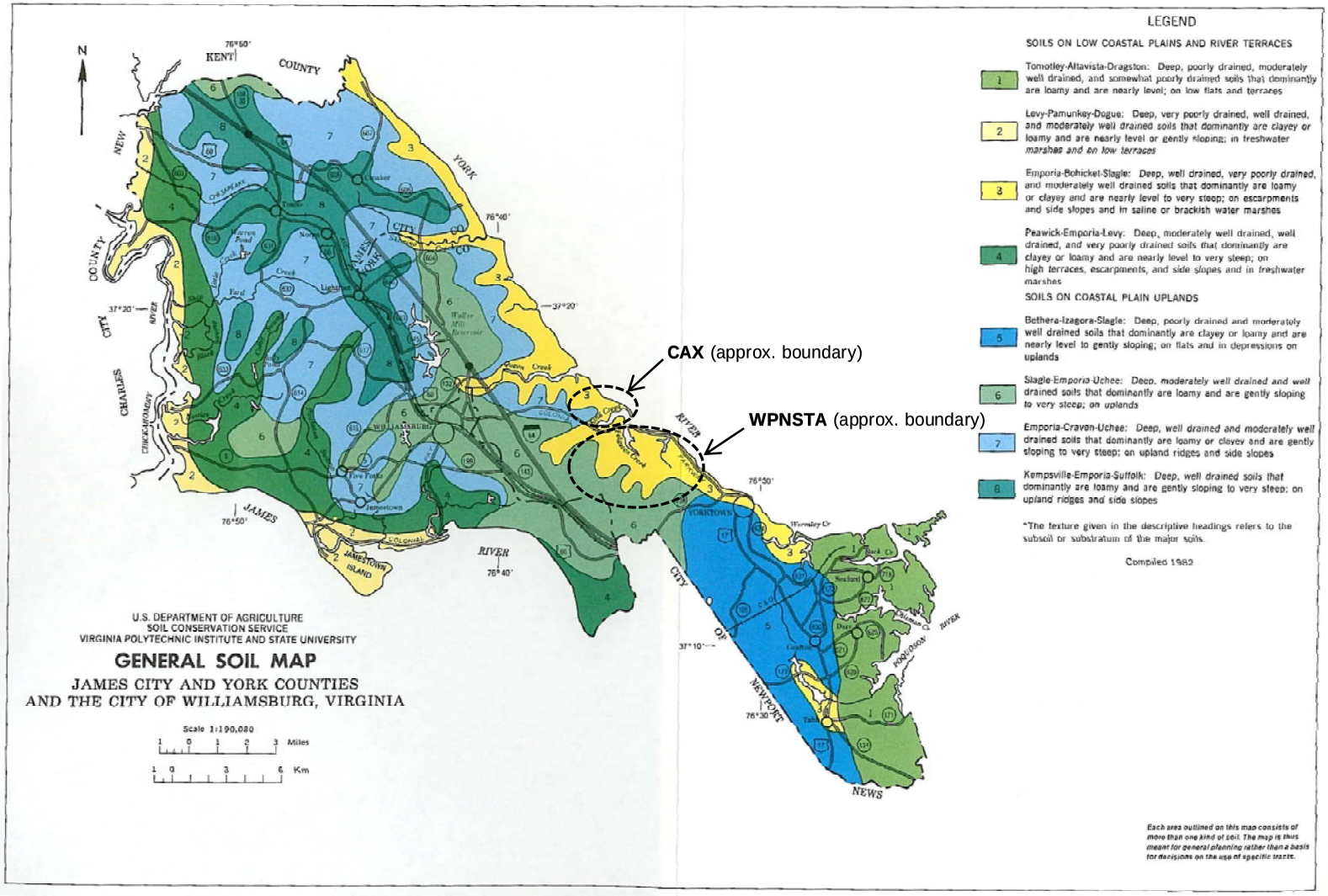
[Source: Virginia Department of Mines, Minerals, and Energy website. (http://www.dmme.virginia.gov)
Available 8/17/10: http://*www.dmme.**virginia**.gov/DMR3/dmrpdfs/VA%20geol%20**map**.pdf*]

WPNSTA and CAX are within the same Physiographic Province



(Source: Smith, Barry S. 2001. *Groundwater Flow in the Shallow Aquifer System at the Naval Weapons Station Yorktown, Virginia*. U.S. Geological Survey, Water-Resources Investigations Report 00-4077.)

WPNSTA and CAX have the same General Soils



(Source: U.S. Department of Agriculture, Soil Conservation Service. 1985. *Soil Survey of James City and York Counties and the City of Williamsburg Virginia.* April.)

Appropriateness to Combine the Data Sets, continued

- The approved background study work plan detailed the combination of the two data sets. The Navy was aware the EPA wanted to evaluate the data before agreeing on the calculation method (i.e., ProUCL vs. another method), however, was unaware that combining the data sets was in question.

- Separating the sets would require additional sample collection at CAX in order to calculate 95/95 UTLs. This would be a significant delay in the CAX Team schedule and goals and impacts the Draft SIs for 8 CAX sites. The current background study has been over 3 years in duration.

- Overall, background is one tool used to evaluate site data. Using the combined 95/95 UTLs does not mean a site that should be evaluated further will be eliminated. However, using CAX's current BG set does mean that a site or specific compounds could unnecessarily be elevated to an RI.

Review of EPA's 8/05/10 Response continued

- EPA Comment #2:

"For site versus background comparisons, typically the higher duplicate site value is compared with background statistics or some other screening level. For the computation of background statistics, the use of the higher duplicate value may yield inflated values of background statistics (e.g., 95/95UTLs). This is especially true when the difference between the duplicate values is large. It is suggested again that the Navy use an appropriate duplicate value (e.g., average or lower) to compute background statistics. If the use of the lower duplicate value is not acceptable, the Navy may just use the commonly used average value."

Review of EPA's 8/05/10 Response continued

- Navy Response:

The Navy disagrees that using the lower or average value is an appropriate comparison, and that maximum BG concentrations should be used.

- BG sample locations were selected based on a review of past activities at the base and represent areas not impacted by CERCLA releases.
- By not including all of the duplicate values is statistical bias and not representative of the background conditions. Lower duplicate values are being requested for BG, and higher duplicate values for the site.
- Duplicate values represent the natural variability of that constituent over a short distance.
- Mathematical outliers were excluded from the BG data set.
- Lower or average values for duplicate samples may require further investigation and remediation of non-CERCLA related releases.

Team Consensus on Path Forward

- Does each Team member agree it is appropriate to combine the CAX and WPNSTA data sets?
- Does each Team member agree with using the higher (or maximum) duplicate value for computing the 95/95 UTLs?
- Following Team consensus on the CAX BG values to use, they will be presented in a BG study report.

Questions or Comments?

Please contact:

Chris Murray
christopher.r.murray@navy.mil
(757) 341-0485

Team Agreement for Final TM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Susanne Haug, P.E.
NPL/BRAC Federal Facilities Branch

Direct Dial (215) 814-3394
Mail Code: 3HS11

Date: October 5, 2010

Mr. Christopher Murray
NAVFAC MIDLANT, Code OPHREV4
9742 Maryland Avenue, Bldg N-26
Norfolk, VA 23511-3095

Re: Calculation of Background Concentrations, Naval Weapons station Yorktown, Yorktown, Virginia and Cheatham Annex Williamsburg, Virginia, February 2010

Dear Mr. Murray:

The U.S. Environmental Protection Agency (EPA) has reviewed the responses to comments sent via an e-mail attachment on 9/21/2010 regarding the U.S. Navy's above referenced report. Although we disagree with the responses to the two remaining comments presented in that e-mail attachment we accept the report. This acceptance should not be construed as an acceptance to use the same methodology at other Facilities. We will accept the report in this case because the computed background numbers are within an acceptable range for that part of the country and are not expected to affect the outcomes of any studies since the computed background numbers are below risk numbers.

If you have any questions, please feel free to call me at (215) 814-3394.

Sincerely,

Susanne Haug, P.E.
Federal Facility Remediation (3HS11)

Cc: Wade Smith (VaDEQ, Richmond)

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

January 6, 2011

Mr. Thomas Kowalski
Mr. Chris Murray
NAVFAC MIDLANT, Building N-26
Hampton Roads Restoration Product Line, Code OPHREV4
9742 Maryland Avenue
Norfolk, VA 23511-3095

RE: Final Calculation of UTL Background Values
Technical Memorandum
Naval Weapons Station Yorktown
Yorktown, Virginia and
Cheatham Annex
Williamsburg, Virginia

Dear Mr. Kowalski and Mr. Murray:

The Virginia Department of Environmental Quality (DEQ) has received the *Calculation of UTL Background Values at Naval Weapons Station Yorktown and Cheatham Annex* (Tech Memo). The December 30, 2010 Tech Memo, prepared by CH2M HILL, was received by the DEQ (electronically) on January 4, 2011.

Thank you for providing the DEQ's Office of Remediation Programs the opportunity to review the above-referenced Tech Memo. Subsequent to DEQ's internal review, this office is in agreement with the approach for calculating upper tolerance limit (UTL) background values in soil and groundwater at Naval Weapons Station Yorktown, Yorktown, VA and Cheatham Annex, Williamsburg, VA.

Please contact me at (804) 698-4125 or wade.smith@deq.virginia.gov with any additional questions.

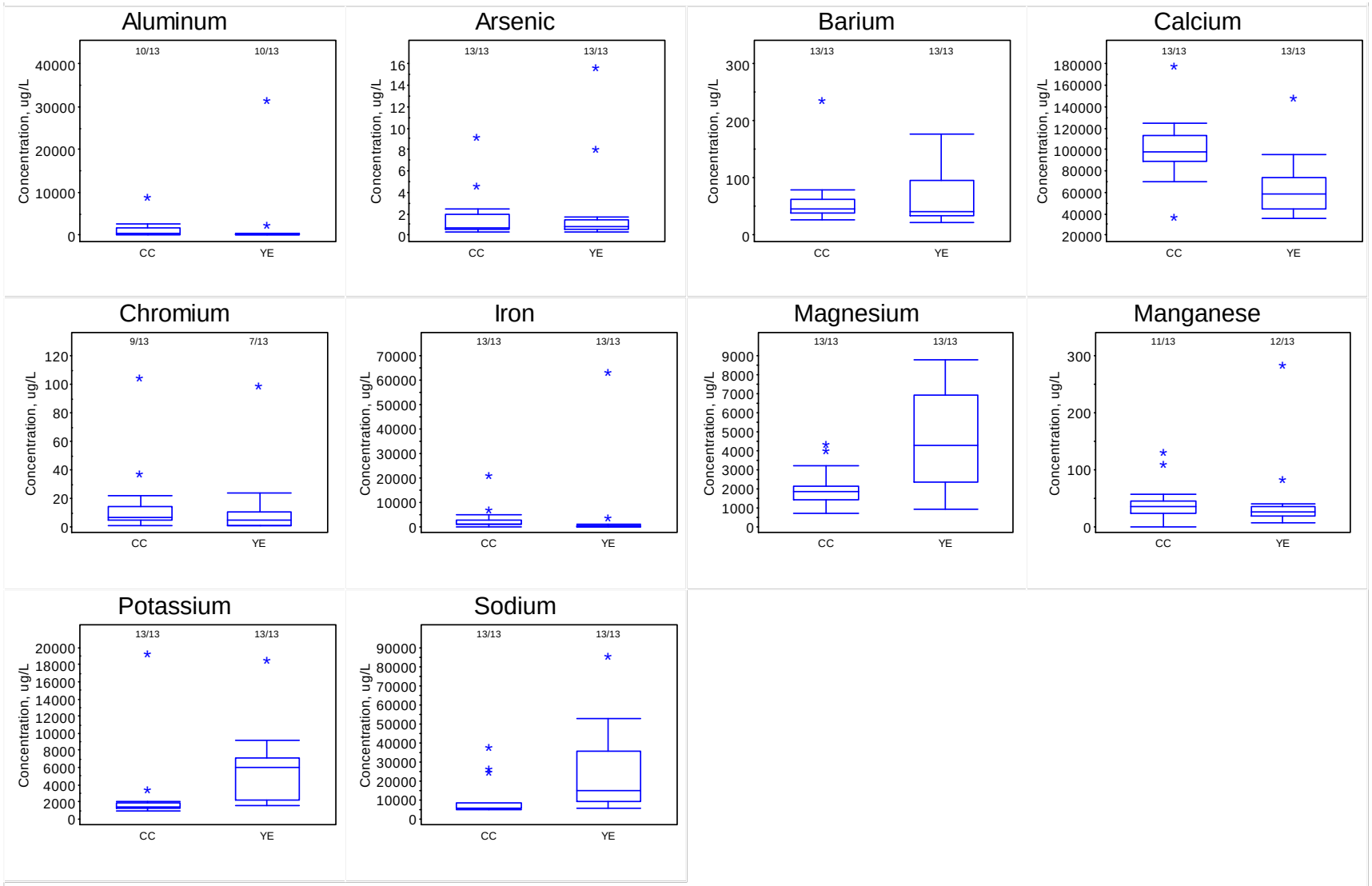
Sincerely,

Wade M. Smith
Remediation Project Manager
Office of Remediation Programs

cc: Robert Thomson, EPA
Susanne Haug, EPA

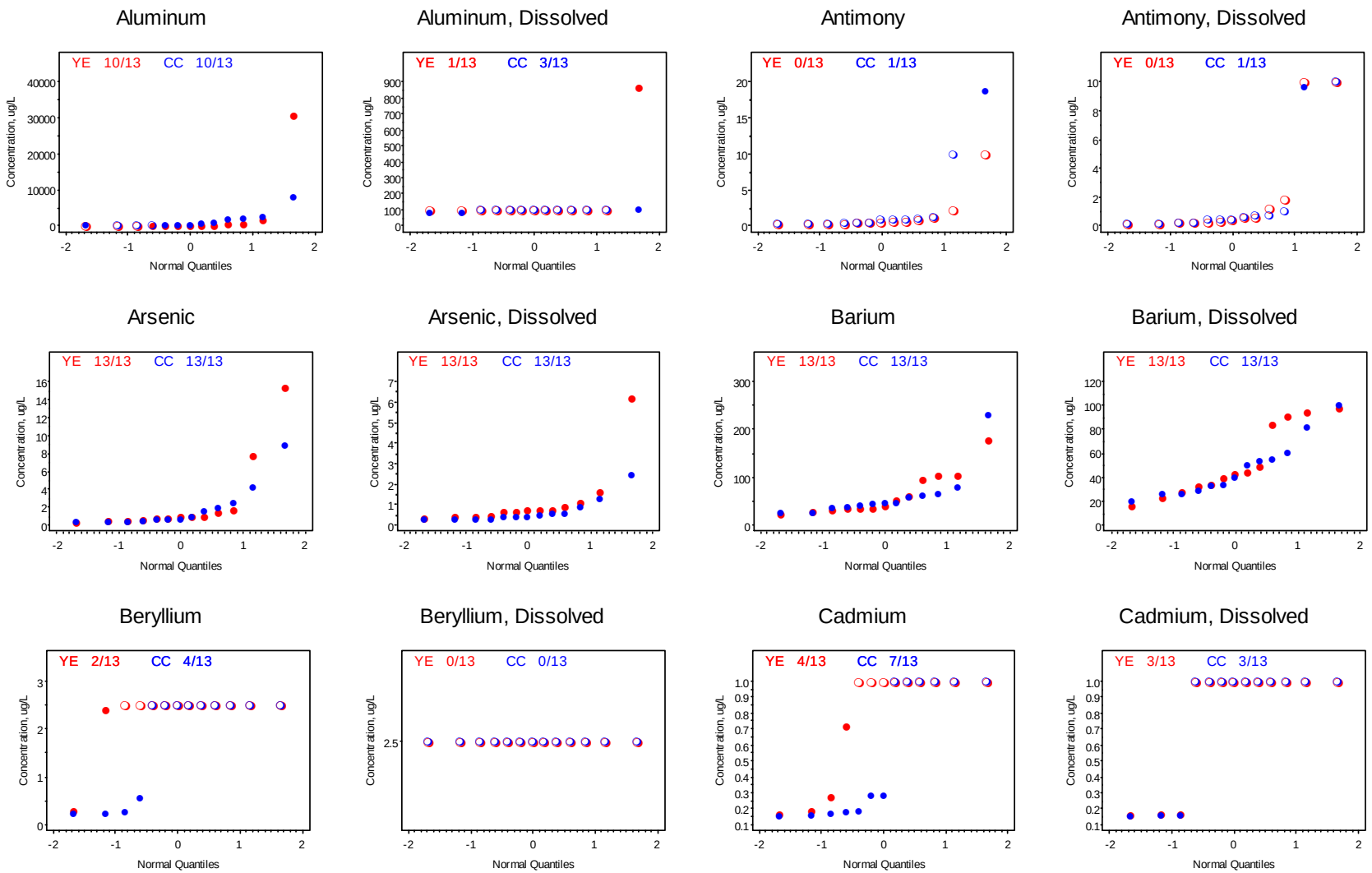
Appendix F
Groundwater Box Plots

Figure F-1: Box and Whisker Plots Comparing Groundwater Concentrations Between Aquifers for Frequently Detected Inorganics



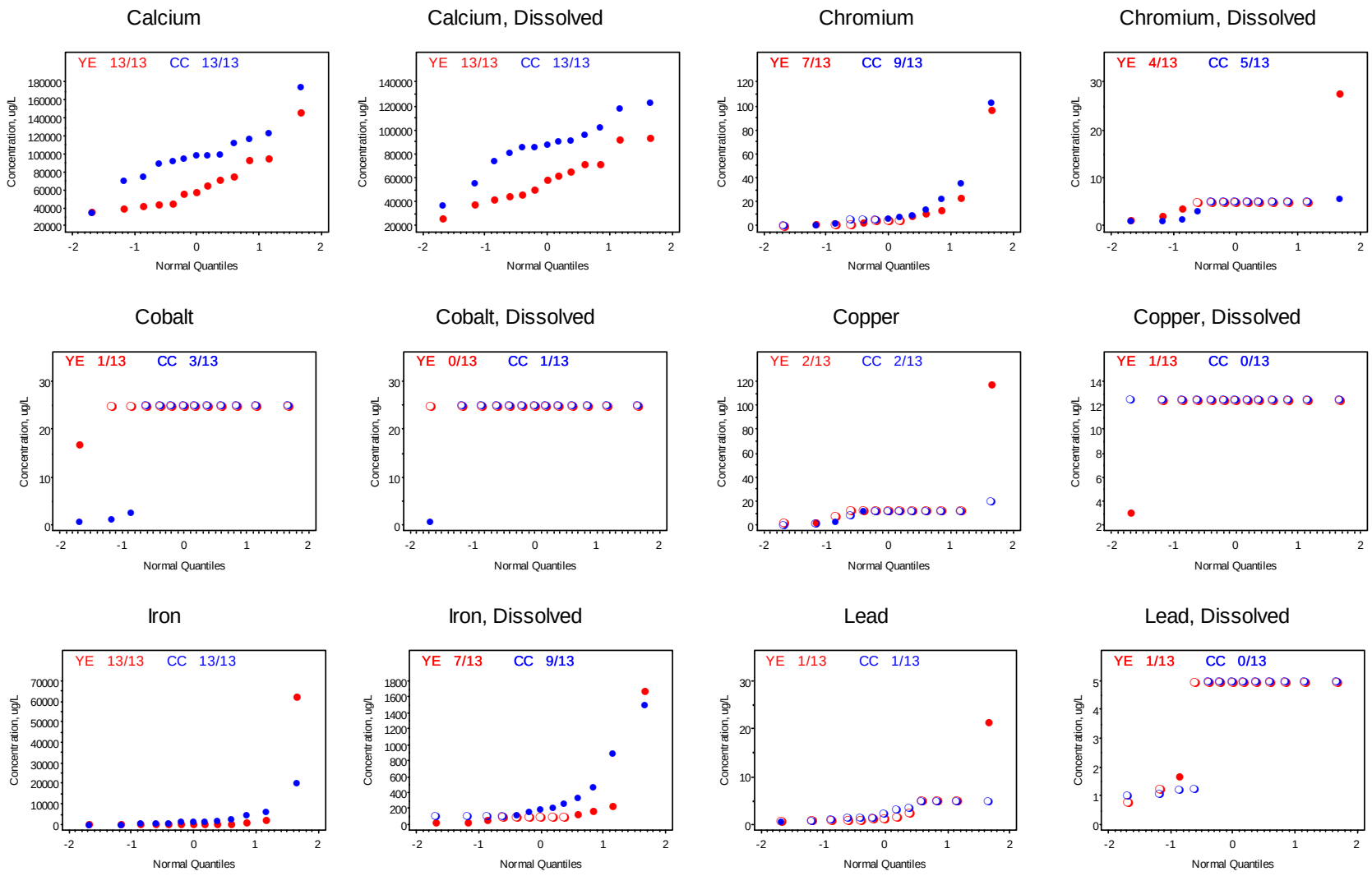
CC = Cornwallis Cave; YE = Yorktown-Eastover

Figure F-2: Probability Plots Comparing Groundwater Concentrations Between Aquifers



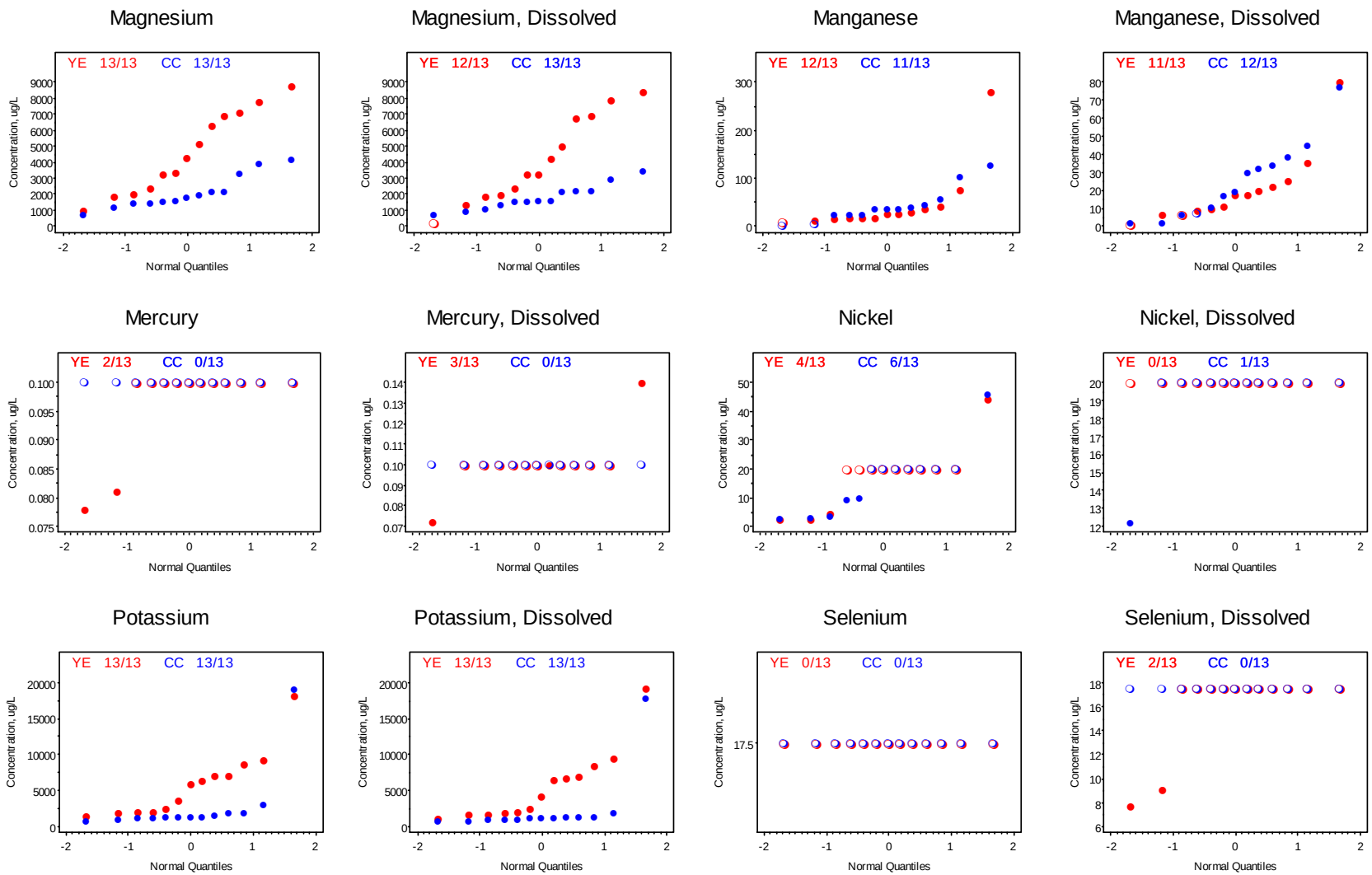
Open Symbol Represents Nondetected Value (1/2 DL); Frequency of Detection Provided for Each Aquifer

Figure F-2: Probability Plots Comparing Groundwater Concentrations Between Aquifers



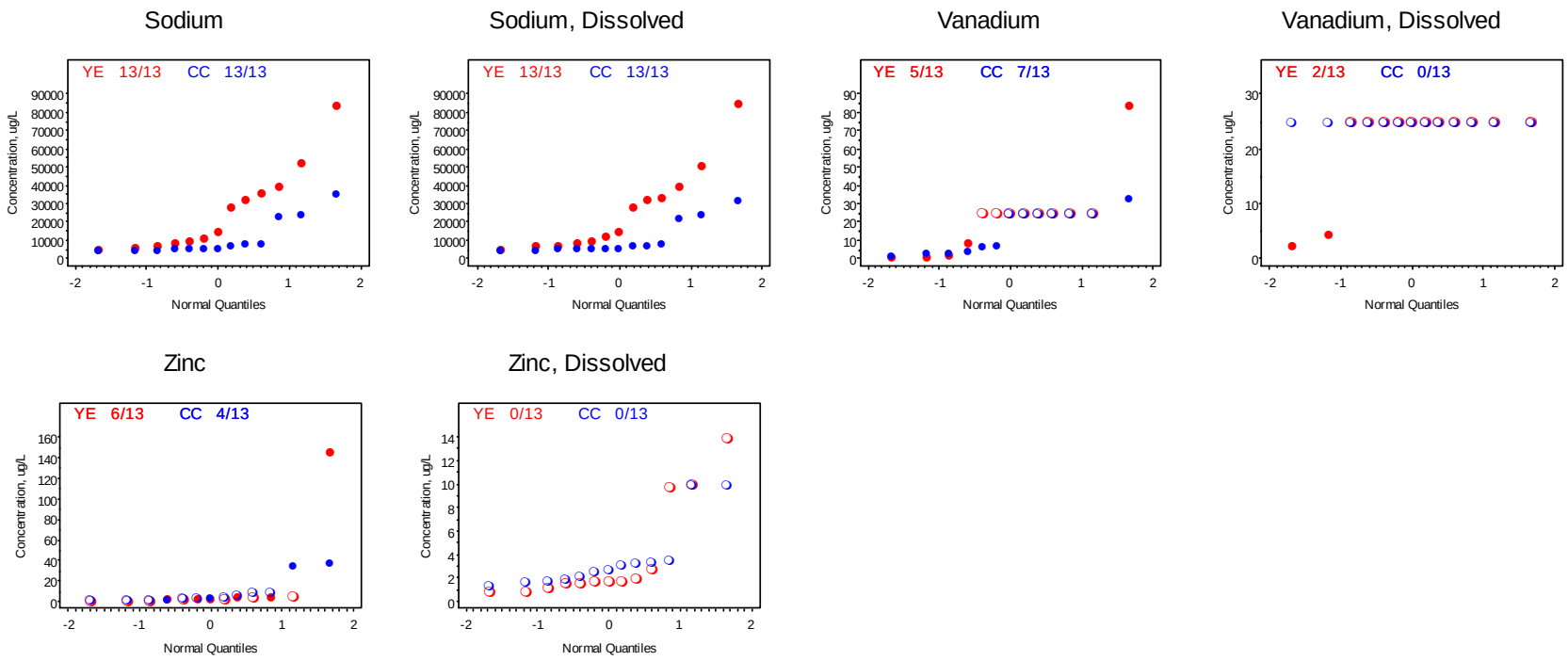
Open Symbol Represents Nondetected Value (1/2 DL); Frequency of Detection Provided for Each Aquifer

Figure F-2: Probability Plots Comparing Groundwater Concentrations Between Aquifers



Open Symbol Represents Nondetected Value (1/2 DL); Frequency of Detection Provided for Each Aquifer

Figure F-2: Probability Plots Comparing Groundwater Concentrations Between Aquifers



Open Symbol Represents Nondetected Value (1/2 DL); Frequency of Detection Provided for Each Aquifer

Table F-1: Statistical Comparisons Between Cornwallis Cave Aquifer (CC) and Yorktown-Eastover Aquifer (YE)

Constistuent	Statistical Comparison Test Performed	Statistical Decision with 0.05 Signficance Level	Mean of CC Detects	Mean of YE Detects	Median of CC Detects	Median of YE Detects	Number of CC Detects	Number of CC Samples	Number of YE Detects	Number of YE Samples	Percent Detects CC	Percent Detects YE	Overall Percent Detects
Constituents with Percent Detects Greater Than 50%													
Arsenic, Dissolved	WRS	nsd	0.676	1.16	0.46	0.71	13	13	13	13	100	100	100
Barium, Dissolved	WRS	nsd	47	51.8	39.9	42.5	13	13	13	13	100	100	100
Calcium, Dissolved	WRS	CC > YE	86800	58500	88000	58700	13	13	13	13	100	100	100
Iron, Dissolved	Gehan	CC > YE	460	333	260	130	9	13	7	13	69	54	62
Magnesium, Dissolved	WRS	YE > CC	1790	4400	1600	3710	13	13	12	13	100	92	96
Manganese, Dissolved	WRS	nsd	26	22.7	24.3	17.4	12	13	11	13	92	85	88
Potassium, Dissolved	WRS	YE > CC	2440	5560	1160	4280	13	13	13	13	100	100	100
Sodium, Dissolved	WRS	YE > CC	10800	25700	5970	15300	13	13	13	13	100	100	100
Aluminum	WRS	nsd	1710	3420	824	206	10	13	10	13	77	77	77
Arsenic	WRS	nsd	1.83	2.48	0.74	0.85	13	13	13	13	100	100	100
Barium	WRS	nsd	62.2	63.1	47	41.7	13	13	13	13	100	100	100
Calcium	WRS	CC > YE	98600	66600	97800	58100	13	13	13	13	100	100	100
Chromium	Gehan	nsd	22.3	22.2	9	10.3	9	13	7	13	69	54	62
Iron	WRS	YE > CC	3330	5360	1140	402	13	13	13	13	100	100	100
Magnesium	WRS	YE > CC	2100	4620	1830	4320	13	13	13	13	100	100	100
Manganese	WRS	nsd	50.4	50.2	36.6	27.6	11	13	12	13	85	92	88
Potassium	WRS	YE > CC	2860	5850	1400	5970	13	13	13	13	100	100	100
Sodium	WRS	YE > CC	11200	25900	5860	14600	13	13	13	13	100	100	100
Constituents with Percent Detects Less Than 50%													
Aluminum, Dissolved	Gehan	nsd	89.7	869	86.8	869	3	13	1	13	23	8	15
Antimony	Only One Detect		18.8	-	18.8	-	1	13	0	13	8	0	4
Antimony, Dissolved	Gehan	nsd	9.7	.	9.7	.	1	13	0	13	8	0	4
Beryllium	Gehan	nsd	0.328	1.34	0.255	1.34	4	13	2	13	31	15	23
Cadmium	Gehan	nsd	0.201	0.335	0.18	0.225	7	13	4	13	54	31	42
Cadmium, Dissolved	Gehan	nsd	0.157	0.167	0.16	0.17	3	13	3	13	23	23	23
Chromium, Dissolved	Gehan	nsd	2.42	8.73	1.2	2.9	5	13	4	13	38	31	35
Cobalt	Gehan	nsd	1.58	16.9	1.4	16.9	3	13	1	13	23	8	15
Cobalt, Dissolved	Only One Detect		0.7	-	0.7	-	1	13	0	13	8	0	4
Copper	Gehan	nsd	7.7	59.5	7.7	59.5	2	13	2	13	15	15	15
Copper, Dissolved	Only One Detect		-	3	-	3	0	13	1	13	0	8	4
Lead	Gehan	nsd	0.51	21.3	0.51	21.3	1	13	1	13	8	8	8
Lead, Dissolved	Only One Detect		-	1.7	-	1.7	0	13	1	13	0	8	4
Mercury	Only One Detect		-	0.0795	-	0.0795	0	13	2	13	0	15	8
Mercury, Dissolved	Only One Detect		-	0.104	-	0.1	0	13	3	13	0	23	12
Nickel	Gehan	nsd	12.4	13.2	6.45	3.3	6	13	4	13	46	31	38
Nickel, Dissolved	Only One Detect		12.2	-	12.2	-	1	13	0	13	8	0	4
Selenium, Dissolved	Only One Detect		-	8.4	-	8.4	0	13	2	13	0	15	8
Vanadium	Gehan	nsd	8.46	19.3	4.4	1.5	7	13	5	13	54	38	46
Vanadium, Dissolved	Only One Detect		-	3.4	-	3.4	0	13	2	13	0	15	8
Zinc	Gehan	nsd	19.4	27.1	19	3.5	4	13	6	13	31	46	38

CC = Cornwallis Cave
YE = Yorktown-Eastover

Team Concurrence

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Susanne Haug, P.E.
NPL/BRAC Federal Facilities Branch

Direct Dial (215) 814-3394
Mail Code: 3HS11

Date: May 3, 2011

Ms. Krista Parra
NAVFAC MIDLANT, Code OPHREV4
9742 Maryland Avenue, Bldg N-26
Norfolk, VA 23511-3095

Re: Draft Background Study Report, Naval Weapons Station Yorktown, Yorktown, Virginia and Cheatham Annex Williamsburg, Virginia, April 2011

Dear Ms. Parra:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced report and has no comments. Please forward one copy of the replacement pages changing the word "draft" to "final".

If you have any questions, please feel free to call me at (215) 814-3394.

Sincerely,

Susanne Haug

Susanne Haug, P.E.
Federal Facility Remediation (3HS11)

Cc: Wade Smith (VaDEQ, Richmond)

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

May 6, 2011

Mr. Thomas Kowalski
Ms. Krista Parra
NAVFAC MIDLANT, Building N-26
Hampton Roads Restoration Product Line, Code OPHREV4
9742 Maryland Avenue
Norfolk, VA 23511-3095

RE: Draft Background Study Report
Naval Weapons Station Yorktown
Yorktown, Virginia and
Cheatham Annex
Williamsburg, Virginia

Dear Mr. Kowalski and Ms. Parra:

The Virginia Department of Environmental Quality (DEQ) has received the *Draft Background Study Report* (Background Study) for Naval Weapons Station Yorktown, Yorktown, VA and Cheatham Annex, Williamsburg, VA. The April 2011 Background Study, prepared by CH2M HILL, was received by the DEQ on April 4, 2011.

Thank you for providing the DEQ's Office of Remediation Programs the opportunity to review the above-referenced Background Study. Subsequent to DEQ's internal review, this office has no comments and recommends preparation of the *Final Background Study Report* for Naval Weapons Station Yorktown, Yorktown, VA and Cheatham Annex, Williamsburg, VA.

Please contact me at (804) 698-4125 or wade.smith@deq.virginia.gov with any additional questions.

Sincerely,

Wade M. Smith
Remediation Project Manager
Office of Remediation Programs

cc: Moshood Oduwole, EPA
Susanne Haug, EPA