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ARCADIS U.S., Inc.
1114 Benfield Boulevard
Suite A
Millersville
Maryland 21108
Tel 410 987 0032
Fax 410 987 4392

Transmittal Letter

To:
Mr. Rob Hill
Maryland Department of the Environment
Land Management Administration
1800 Washington Boulevard, Suite 620
Baltimore, MD 21230-1719

Copies:
S. Bull, MDE
J. Richmond, MDE
K. Brandt, NPS – CD
J. Hewitt, NPS – CD
M. Carter, NPS – CD
P. Penoyer, NPS – CD
P. Kurzanski, CSXT – PS&E Web
S. Jarvela, USEPA - CD
L. Fischbeck, E&E – CD
L. Bohn, FCHD - CD
B. Cervi, E&E - CD

ENVIRONMENT

From:
Megan E. Kellner

Date:
November 26, 2013

Subject:
Revised Site Conceptual Model Addendum 1
CSXT Brunswick Yard, Brunswick, Maryland CSXT
Project # 9415381

ARCADIS Project No.:
MD843.11.05

We are sending you:

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Comments: On behalf of Mr. Paul Kurzanski of CSXT, please find enclosed a copy of the Revised Site Conceptual Model Addendum 1 with a copy on CD for the CSXT Brunswick Yard, Brunswick, Maryland. Two copies (one a complete hard copy) of the report were also delivered to Susan Bull with one electronic copy on CD. Please contact me with and questions. Thank you, Megan Kellner

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Revised Site Conceptual Model Addendum 1:

C&O Canal Investigation and NPS MW-18 Well Installation Summary Report

CSXT Brunswick Yard / C&O Canal,
Brunswick, Maryland
CSXT Project # 9415381

November 27, 2013

ARCADIS

Katie Moran
Staff Geologist

Josh Wilson
Project Scientist

Michael Kladias, P.G.
Technical Expert, Modeling Services

Megan E. Kellner, P.G.
Project Manager

Revised Site Conceptual Model Addendum 1-
C&O Canal Investigation and NPS MW-18 Well Installation Summary Report

Brunswick Yard,
Brunswick, Maryland
CSXT Project # 9415381

Prepared for:
CSX Transportation, Inc.

Prepared by:
ARCADIS U.S., Inc.
1114 Benfield Boulevard
Suite A
Millersville
Maryland 21108
Tel 410 987 0032
Fax 410 987 4392

Our Ref.:
MD000843.0011

Date:
November 26, 2013

ARCADIS

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List of Acronyms and Abbreviations

%	percent
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
AOC	Area of concern
ARCADIS	ARCADIS U.S., Inc.
AST	aboveground storage tank
B	laboratory qualifier indicating constituent was detected in a method blank
bgs	below ground surface
BRT	barrier/recovery trench
CAP	Corrective Action Plan
CCTV	closed circuit television
C&O	Chesapeake and Ohio
CAP	Corrective Action Plan
CSXT	CSX Transportation, Inc.
DPE	dual-phase extraction
DPT	direct-push technology
Eder	Eder Associates
E&E	Ecology and Environment, Inc.
EFR	enhanced fluid recovery
FID	flame ionization detector
GP	Geoprobe
J	laboratory qualifier indicating constituent concentration is estimated
LPH	liquid-phase hydrocarbon

Acronyms and Abbreviations (continued)

LNAPL	light non-aqueous phase liquid
MARC	Maryland Rail Commuter service
MDE	Maryland Department of the Environment
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	mean sea level
MTBE	methyl tert-butyl ether
MW	monitoring well
NPS	National Park Service
O&M	operation and maintenance
ORP	oxidation-reduction potential
OVA	organic vapor analyzer
PID	photoionization detector
ppm	parts per million
PVC	polyvinyl chloride
SI	Supplemental Investigation
SCM	Site Conceptual Model
SGC	silica gel cleanup
SIWP	Supplemental Investigation Work Plan
SVOC	semi-volatile organic compound
the Site	CSXT Brunswick Rail Yard
TPH	total petroleum hydrocarbon
TPH-DRO	diesel-range total petroleum hydrocarbons
TPH-GRO	gasoline-range total petroleum hydrocarbons
TPH-ORO	oil-range total petroleum hydrocarbons

Acronyms and Abbreviations (continued)

USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

1. Introduction

On behalf of CSX Transportation, Inc., (CSXT), ARCADIS U.S., Inc. (ARCADIS) has prepared this Revised Site Conceptual Model (SCM) Addendum 1 – C&O Canal Investigation and NPS MW-18 Well Installation Summary Report for the CSXT Brunswick Yard (the Site) in Brunswick, Maryland, as requested by the Maryland Department of the Environment (MDE) in letter correspondence dated September 6, 2012. This report is the first addendum to the Supplemental Investigation Report / Revised SCM (SI Report and Revised SCM), submitted to the MDE in April 2013 (ARCADIS 2013a). This Revised SCM Addendum presents data collected from May through October 2013, during the implementation of canal investigation activities detailed in the Revised Supplemental Investigation Work Plan (SIWP) (ARCADIS 2012) and the replacement of National Park Service (NPS) Monitoring Well (MW)-11 (previously destroyed) with new well NPS MW-18.

The SCM is the primary means to communicate and interpret technical data from both the Site and the NPS property located adjacent to the Site. The SCM consists of a narrative description of groundwater flow and solute transport at the Site and on NPS Property, including the locations and nature of contaminant sources. The original SCM was submitted to MDE on January 30, 2007, and has been revised four times (February 8, 2008; August 29, 2008; April 30, 2012; April 18, 2013) based upon data collected from several phases of Site investigations. In accordance with the approved CAP Addendum, this Revised SCM Addendum 1 presents data collected since the previous SCM submittal.

Liquid-phase hydrocarbon (LPH) recovery activities are currently conducted at the Site as required by the Consent Order between MDE and CSXT, signed on July 18, 2007 (MDE 2007). The primary goal, as stated in the Consent Order, is to remove light non-aqueous phase liquid (LNAPL) diesel fuel related to the aboveground storage tank (AST) system, to the extent practicable as determined by the MDE. The removal will alleviate the threat of migration of LNAPL, taking into consideration future re-watering of the Chesapeake and Ohio (C&O) canal. The Consent Order defines “extent practicable” as a sheen on the groundwater measurable to 1/8th of an inch using an interface probe capable of detecting oil and water to 0.01 feet. ARCADIS, on behalf of CSXT, submitted a CAP Addendum, per the Consent Order, on March 2, 2009 and MDE approved it on May 27, 2009 (MDE 2009). ARCADIS implemented the CAP Addendum in July 2009. The Consent Order specified a deadline of no longer than three years from approval of the CAP (Addendum), to be extended as reasonably

necessary, for completing the cleanup, by mutual agreement of MDE and CSXT. The agreement was documented in an amended Consent Order.

1.1 Site Description

The Site, which has been an active rail yard since 1892, is located adjacent to the C&O Canal in Brunswick, Maryland (Figure 1). The Brunswick Yard is bounded to the north by East Potomac Street, to the west by a Maryland Rail Commuter service (MARC) train commuter parking lot, and the C&O Canal to the south. Site features include a former AST Fuel Pump House, former Roundhouse, and the currently-operating ASTs, Fueling Station and Oil-Water Separator. Historic and current potential source areas for diesel-range total petroleum hydrocarbons (TPH-DRO) in groundwater are the former AST system, which included a fuel pumping house and a 500,000-gallon diesel fuel AST, and a current fueling area located near the former roundhouse (Figure 1). The Brunswick Yard handles both commuter and freight traffic. The diesel fueling station is currently operated by MARC and their subcontractors. Other areas of the Brunswick Yard are used for rail-related staging activities.

The C&O Canal is located south of the Brunswick Yard, and is bounded on the south by the Potomac River. Directly north of the canal is a dirt access road that is occasionally used by CSXT vehicles. Just to the south of the canal is the historic C&O Canal tow path, which is a maintained dirt/gravel road that leads to the Brunswick Camp Ground. The tow path receives moderate use from vehicular, bike and pedestrian traffic. The canal itself is approximately 25 to 30 feet wide, with steep banks approximately three to four feet in height. The bottom of the canal is relatively flat, and standing water is occasionally observed in portions of the canal for extended periods of time. The canal banks are covered with a mix of dense brush and plant debris. Vegetation within the canal prism consists of young trees, with large logs and branches littered on the surface.

1.2 CSXT Site History and Activities

A short summary of Site history and active remediation is presented below; a more detailed history is presented in the SI Report and Revised SCM. A tabular history of previous and recent environmental activities associated with the Site and the C&O Canal is also included as Table 1.

Remedial activities conducted by CSXT and their consultants were initiated in 1992 with the removal of a 16,000 gallon diesel fuel underground storage tank (UST)

adjacent to the fuel pumping house and approximately 100 cubic yards of petroleum impacted soil. A series of monitoring wells and piezometers were installed at the Site beginning in 1994, and efforts to recover LPH from Site wells began at CSXT MW-2 in January 1995. As requested by the MDE in 2002, a CAP prepared by Gannett Fleming, Inc. was submitted on April 19, 2002. The CAP proposed the installation of a barrier/recovery trench (BRT) with internal collection sumps in order to provide containment of LPH. The CAP was approved by MDE in November 2002, and construction of the BRT was completed in March 2004. Beginning in July 2004, enhanced fluid recovery (EFR) activities were initiated to increase LPH recovery. Approximately 32,466 gallons of total fluids (LPH and water) were recovered using EFR from July 2004 through June 2009. In September 2006, an automated product recovery pump was installed in CSXT MW-2 as requested by MDE. A total of 54 gallons of product were recovered by the pump from September 2006 through July 2008.

Subsequent to the August 2008 SCM revision (ARCADIS 2008), several phases of corrective measures were completed at the Site, including a dual-phase extraction (DPE) pilot study, implementation of the CAP, and additional well installations.

The CAP Addendum was approved by the MDE on May 27, 2009. Several actions were initiated in 2009 in accordance with the CAP Addendum, including the installation of three LPH skimmer pumps and five passive LPH skimmers to facilitate consistent LPH recovery. Three additional QED Environmental Systems ferret skimmer pumps were installed in September 2010. Operation and Maintenance (O&M) visits have been completed on a regular basis. O&M visits include gauging of wells which contained measurable LPH within the previous six months, and LPH recovery using a peristaltic pump or absorbent sock at wells containing measurable LPH where a skimmer pump or passive skimmer was not installed. Currently there are five active automated skimmer pumps, located in monitoring wells CSXT MW-41, CSXT MW-53, CSXT MW-54, CSXT MW-55, and CSXT MW-56. Total cumulative recovery by all methods since system implementation in July 2009 through September of 2013 is 799.8 gallons of LPH, with 626.1 gallons of LPH recovered via the skimmer pumps. LPH and water level monitoring data and LPH recovery data are presented in quarterly reports submitted to the MDE.

Groundwater sampling activities have been ongoing on at least a semi-annual basis since December 2006. Between 2006 and August 2008, all existing CSXT and NPS wells that did not contain measurable LPH were sampled. Following the August 2008 groundwater sampling event, the MDE approved a reduction in the number of

monitoring wells included in the groundwater sampling monitoring well network. The MDE also approved a reduction in groundwater sampling frequency, from quarterly to semi-annually. Groundwater analytical data are presented in quarterly reports submitted to the MDE.

1.3 National Park Service Property History and Activities

Soil investigative activities were conducted on NPS property beginning in approximately 1991 as part of the permitting process to restore and re-water a section of the C&O Canal. Based on the results of the soil sampling conducted by NPS, CSXT conducted initial surface soil sampling in March 1992 and additional soil delineation sampling in July 1993. The March 1992 surface soil sampling results indicated elevated concentrations of total petroleum hydrocarbons (TPH) in three areas, with concentrations ranging from 509 milligrams per kilogram (mg/kg) at sample location EA-7 to 4,270 mg/kg at location EA-3. Further delineation conducted in July 1993 focused on the three Areas of Concern (AOC): AOC 1 near location EA-3, AOC 2 near location EA-5, and AOC 3 near locations EA-7 and EA-8. As agreed upon by CSXT and NPS at the time of the investigation, each area would be delineated where soil samples had concentrations of TPH above 400 mg/kg. These areas were not associated with constituent concentrations in groundwater samples. Soil delineation samples collected during the July 1993 event further refined the boundaries of Areas 1, 2, and 3 as described in the investigation report (Eder Associates (Eder) 1994).

On behalf of the NPS, in March 1996, Ecology and Environment, Inc. (E&E) prepared a Draft Site Assessment and Characterization Report based on additional sediment and soil sampling. The results of the collection and analysis of subsurface soils within the canal prism indicated there were no polycyclic aromatic hydrocarbon compounds exceeding the U.S. Environmental Protection Agency (USEPA) Region III Risk-Based Concentrations for industrial exposure (E&E 1996).

In order to evaluate groundwater quality along the C&O Canal, the NPS installed five monitoring wells (NPS MW-1 through NPS MW-5) along the canal in August 1996 (E&E 1997). The NPS collected four rounds of groundwater samples from these monitoring wells between 1996 and 1999 before installing additional wells (NPS MW-10 through NPS MW-17) in 2001. Only one NPS well, NPS MW-4, ever exhibited measurable LPH, at thicknesses ranging from 0.01 to 0.65 feet. LPH has not been observed at NPS MW-4 since October 2007. From December 2002 through January 2006, the NPS collected groundwater samples from the monitoring wells on their

property approximately every six months (December 2002, June 2003, January 2004, July 2004, December 2004, July 2005, and January 2006).

Groundwater samples collected from the NPS wells have historically been analyzed for TPH-DRO. The current groundwater sampling program includes seven of the NPS monitoring wells, which are analyzed for TPH-DRO and full-suite volatile organic compounds (VOCs) including fuel oxygenates. Water-level and LPH measurements are collected at all NPS wells on a quarterly basis.

1.3.1 Groundwater Sampling Summary

All existing NPS monitoring wells were sampled during four consecutive quarterly groundwater sampling events in 2007. After the August 2008 groundwater sampling was completed, the MDE approved a reduction in the groundwater sampling monitoring well network and groundwater sampling frequency. The current groundwater sampling monitoring well network consists of CSXT MW-3, CSXT MW-6R, CSXT MW-22, CSXT MW-24, CSXT MW-25, CSXT MW-29, CSXT MW-43, CSXT MW-51, NPS MW-1, NPS MW-2, NPS MW-4, NPS MW-5, NPS MW-13, NPS MW-14, and NPS MW-16, which are sampled on a semi-annual basis. Additionally, groundwater samples are collected from new monitoring wells CSXT MW-59 through CSXT MW-70 (wells installed since March 2012) on a quarterly basis.

2. Canal Investigation Activities

The Revised SIWP described several investigation activities to further characterize the nature and extent of the LPH pool and groundwater impacts from dissolved-phase constituents. A series of on-site investigations were completed in early 2013 to support characterization of LPH mobility at the Site, the results of which were presented in the fourth revision of the SCM (April 2013). However, the C&O Canal prism soil investigation was postponed due to access issues caused by standing water within the canal prism footprint. The canal prism became accessible in August 2013, and the investigation was completed. The objectives of the canal investigation were two-fold:

- Understand how potential petroleum impacts to soil/sediment in and below the canal prism would affect future use of the canal, including re-watering the canal; and,
- Further evaluate off-Site groundwater quality.

The investigation activities and results of the canal investigation are described below.

2.1 Investigation of Canal Prism Soils

In order to fully characterize potential petroleum-related impacts to soil and groundwater within and beneath the C&O Canal prism, 30 soil borings were installed in the canal prism between towpath mile marker 55 and 54 in Brunswick, Maryland, as prescribed in the SIWP. A total of 60 soil/sediment and 6 groundwater samples were collected from three separate AOCs, shown on Figure 1, to characterize the geology and identify any soil and/or groundwater impacts beneath the canal. The samples were collected using a direct-push drill rig between August 19, 2013 and August 22, 2013. Figures 2, 3, and 4 depict the boring locations from each of the three AOCs, which were identified during a previous canal investigation in 1993 (Eder 1994). Each area is described below:

- AOC 1 begins approximately 240 feet east of South Maple Avenue, and extends approximately 300 feet to the east within the canal. Existing well CSXT MW-20 marks the approximate western extent of the AOC, and NPS MW-4 marks the approximate eastern extent of AOC 1, as shown on Figure 2. The eastern extent of AOC 1 was extended further east than was originally planned in the SIWP at the request of the NPS, to characterize the soils and sediment within the canal prism downgradient of the eastern extent of the BRT. AOC 1 also straddles a historic stone drainage culvert which transects the canal.

- AOC 2 is located approximately 300 feet east of AOC 1. It extends approximately 200 feet to the east, along the canal. Existing well NPS MW-10 marks the approximate western extent of AOC 2 and NPS MW-13 marks the approximate eastern extent, as shown on Figure 3.
- AOC 3 is the eastern-most area, and is located approximately 300 feet east of the eastern boundary of AOC 2. AOC 3 extends approximately 200 feet along the canal to the east. Existing well NPS MW-14 marks the approximate western extent of AOC 3 and NPS MW-15 marks the approximate eastern extent, as shown on Figure 4.

Ten direct-push technology (DPT) boring locations were completed in each AOC as displayed on Figures 1 through 4. In AOC 2 and AOC 3, borings were located in two rows along the length of each AOC, with five boring locations per row. In AOC 1, the series of paired borings was altered to complete characterization of soil and sediments from a longer portion of the canal prism, as requested by NPS. Sample locations were evenly spaced in each AOC. Soil sample locations in each AOC are shown on Figures 2, 3 and 4.

2.1.1 Utility Location

Utility location due diligence was conducted prior to drilling activities to identify and avoid any existing infrastructure in the vicinity of the planned soil boring locations. Miss Utility was notified of the planned intrusive activities, and a private utility locating contractor, Underground Services of West Chester, PA, also completed utility locating and mark out services at the Site. Utility locating was completed using ground-penetrating radar and radio detection within the canal prism on June 24, 2013.

2.1.2 Soil Boring Installation

A total of thirty soil borings were installed during the canal investigation, ten soil borings in each AOC. Each soil boring was installed to approximately 10 feet below ground surface (bgs) using a small direct-push rig. An excavator was used to lift the drill rig in and out of the canal and between boring locations to minimize disturbance of the original surface of the canal. The canal was accessed under NPS Special Use Permit #NCR-3100-5700-12.076.

To install each boring, a core sampler with a clear acetate liner was hydraulically driven into the subsurface using a direct-push drill rig at each sample location. Soil samples were recovered in 4-foot intervals. The geology of each boring location, including the

depth and thickness of the clay liner, was continuously logged and screened with a photo-ionization detector (PID) to the terminal depth of each boring, with soil lithology descriptions recorded on standard ARCADIS boring logs (Appendix A). A flame-ionization detector (FID) was also prescribed for screening soils in the SIWP, and was initially used for screening, but was discontinued due to unresolved drift in instrument calibration.

A total of six 1-inch temporary piezometers were constructed in the canal prism, at two representative soil borings within each AOC. Piezometers were constructed using 1-inch diameter polyvinyl chloride (PVC) riser, with five feet of 1-inch PVC 10-slot well screen. The temporary piezometers were used to measure water levels in the vicinity of the canal and for groundwater sample collection.

Each boring, including the borings where temporary piezometers were installed, were properly abandoned after sample collection by removing the well materials (if needed) and filling the boring with bentonite to the surface grade of the canal prism. The ground surface of each boring was then restored to the original condition of the canal.

2.1.3 Soil Sample Collection

Soil samples were collected from two depth intervals at each boring location; one sample from the sediments above the clay canal liner where the highest PID reading was observed, and one sample from the soils below the clay canal liner where the highest PID reading was observed. Nine of the thirty soil borings did not have a distinguishable clay liner. At boring locations without a detected clay liner, samples were collected from intervals consistent with depths above and below the clay liner as observed in nearby soil borings. PID soil screening yielded non-detect readings for the entire core length at seven of the thirty soil boring locations. At these locations, samples were collected from depths above and below the clay liner that were consistent with nearby locations. Soil and sediment investigation-derived waste was disposed of in a 55-gallon drum, which will be characterized and properly disposed of off-site.

All soil/sediment samples were shipped to TestAmerica Laboratories located in Pensacola, FL; Nashville, TN; and Savannah, GA for the following analyses:

Total Petroleum Hydrocarbon-Gasoline Range Organics (TPH-GRO) via USEPA method 8015 (TestAmerica Pensacola);

Total Petroleum Hydrocarbon-Diesel Range Organics/Oil Range Organics (TPH-DRO/ORO) via USEPA method 8015C (TestAmerica Nashville);

Full-suite VOCs including fuel oxygenates via USEPA method 8260 (TestAmerica Pensacola); and

Semi-volatile Organic Compounds (SVOCs) via USEPA method 8270 (TestAmerica Savannah).

Additionally, soil and sediment samples from each of the sampled intervals were sent to Alpha Analytical in Mansfield, MA for preservation and fingerprint analysis to support characterization of any impacts to the subsurface at the Brunswick Yard and C&O Canal. Only ten of the soil/sediment samples were analyzed for fingerprinting. The samples that were analyzed for fingerprinting were selected based upon review of the TestAmerica analytical results and the location of each soil boring. The highest detections from each AOC were fingerprinted, while maintaining appropriate representation of the entire AOC.

2.2 Installation of Temporary Piezometers

A total of six temporary piezometers were constructed at two representative soil borings within each AOC. The temporary piezometers were installed at soil boring locations SB01-04, SB01-09, SB02-04, SB02-08, SB03-04 and SB03-08 (Figures 2, 3, and 4). In AOC 2 and 3, temporary piezometers were installed in the pre-determined locations. In AOC 1, temporary piezometers were installed in borings that ARCADIS field staff identified as the most likely to yield a sufficient volume of groundwater for sample collection, based on a higher proportion of coarser-grained materials at depth and observed moisture content of soil cores (Figure 1). The piezometers were constructed using 1-inch diameter PVC riser, with five feet of 1-inch PVC 10-slot well screen. Water levels were measured throughout the week and groundwater samples were collected from each of the temporary piezometers.

Temporary piezometers were properly abandoned following collection of groundwater samples. Each boring was then properly abandoned by filling the boring with bentonite to the surface grade of the canal prism.

2.2.1 Groundwater Sample Collection

Groundwater samples were collected from each of the temporary piezometers using a peristaltic pump. Prior to purging, the depth-to-water in each piezometer was gauged and recorded. A three-volume purge and sample methodology was attempted at each piezometer; however, of the six piezometers, only PZ03-08 produced sufficient volume for a continuous purge. The remaining piezometers were purged dry then sampled following water level recovery. Field parameters [pH, conductivity, temperature, dissolved oxygen, and oxidation-reduction potential (ORP)] were measured and recorded (Appendix B) prior to sampling.

Groundwater samples were shipped to TestAmerica Laboratories under routine chain-of-custody for the following analyses:

- TPH-GRO via USEPA method 8015C (TestAmerica Savannah);
- TPH-DRO/ORO with and without silica gel cleanup (SGC) via USEPA method 8015C (TestAmerica Nashville);
- Full-suite VOCs including fuel oxygenates via USEPA method 8260B (TestAmerica Pensacola); and
- SVOCs via USEPA method 8270D (TestAmerica Savannah).

The USEPA 8015C method for TPH-DRO encompasses the complex mixture of hydrocarbons in the diesel and heavy oil ranges, including the C-12 to C-28 petroleum hydrocarbons, reported in aggregate as a single TPH-DRO concentration.

The use of a SGC procedure for TPH-DRO can result in a more representative concentration of petroleum hydrocarbons, as detailed in the SI Report and Revised SCM. In addition, understanding the fraction of TPH-DRO concentrations that represents actual petroleum compounds, as opposed to naturally occurring and degradation compounds, allows for a more accurate and relevant comparison to risk-based regulatory standards.

2.2.2 Water Levels

Water-level measurements were collected from the six temporary piezometers and at select nearby existing monitoring wells in order to characterize groundwater flow

directions and gradients in the vicinity of the canal. Water levels were collected from existing Site monitoring wells NPS MW-1, CSXT MW-6R, CSXT-MW-8, CSXT-MW-9, NPS MW-10, NPS MW-13, NPS MW-14, NPS MW-15, NPS MW-17, NPS MW-18 and CSXT MW-20.

A contoured groundwater elevation map for each AOC showing the August 21, 2013 elevation data is included as Figure 5. The contour maps present groundwater elevations and inferred groundwater flow directions relative to each AOC. Groundwater flow conditions are discussed further in Section 3.2.

2.3 Site Survey

Soil boring locations were surveyed on September 10, 2013 by KCI Technologies of Fulton, MD. This survey included ground surface elevations and horizontal coordinates (northing and easting). Temporary piezometer casing stick-up measurements were collected and recorded by ARCADIS personnel prior to abandonment of each piezometer so that correct groundwater elevations could be calculated. Surveyed horizontal coordinates and elevation data for each boring are presented in Table 2, and the survey report is included as Appendix C.

3. Canal Investigation Results

The following sections present the results of soil and groundwater investigation activities conducted as part of the canal investigation. They include a characterization of the lithology, groundwater flow, and extent of constituent detections at the Site and the C&O Canal.

3.1 Site Geology

3.1.1 General Site Geology

A full description of Site geology is presented in the SI Report and Revised SCM; however, a brief summary of the geologic setting is provided here. In general, site data indicate geologic conditions consistent with fluvial sediments deposited on a metamorphic bedrock surface. The alluvium is associated with the Potomac River and its tributaries, and consists of heterogeneous layers of clay, silt, sand, and gravel. Underlying the Site and NPS Property are two distinct overburden deposits. Directly overlying the saprolite is an orange-brown medium- to coarse-grained sand and gravel unit. The sand and gravel unit thins south of the Site approaching the Potomac River. Overlying the sand and gravel is a silty-clay unit, described as greenish-gray or brown and up to 15 feet thick. This unit varies in composition and thickness across the Site, and is thought to thin to the south as it approaches the Potomac River. Various types of fill materials, including sand and cinders, overlie the silty-clay unit. The thickness of the fill unit varies from two to ten feet at the Site.

The overburden units are illustrated in a series of geologic cross-sections. Each cross-section prepared is described in the following sections and included as Appendix D. Soil screening data, including PID/FID /organic vapor analyzer (OVA) concentrations recorded during boring activities (Appendix A), and the results of TPH-DRO analyses of soil samples, are also included on each cross-section. Duplicate or similar PID/FID/OVA results recorded at successive intervals were eliminated to reduce extraneous information on each cross-section. The locations of the cross-sections are shown on Figure D-1, Appendix D. New cross-sections were generated to present conditions across the C&O Canal, based on information collected during the Canal Investigation; these are described in detail in the following sections. In addition, existing cross-sections A-A', B-B', C-C', E-E', and F-F' were revised to incorporate new information, and are also discussed below. Existing cross-section G-G' was revised to include new well NPS MW-18; however, the lithology at this location was consistent with previous interpretation; therefore, this cross-section revision is not discussed

below. Cross-sections not discussed below are presented in Appendix D; previous interpretations of these data were included in the SI Report and Revised SCM.

3.1.2 C&O Canal Cross-sections

Initial characterization of canal geology and conditions was presented in a 1992 report submitted by Eder Associates, based on soil sampling conducted in the canal prism footprint (Eder 1992). This investigation characterized a discontinuous clay canal liner underlying the "canal proper", defined as the flat part of the canal. It also indicated that sections of the canal had been disturbed by "considerable earth movement" over time, due to the presence of cinders, metal fragments, and debris in surficial canal sediments and fill materials overlying the clay liner. This report did not indicate whether or not the clay canal liner extended along the banks of the canal.

Based on recent investigations, the unconsolidated materials observed in the canal consist of heterogeneous layers of clay, silt, sand, and gravel. Three distinct alluvial deposits were identified in the canal. Directly overlying the saprolite is a yellowish-brown medium- to coarse-grained sand and gravel unit. This unit appears within the last foot of several soil borings (SB01-01, SB01-03, SB01-04, SB01-09, and SB01-10), with the interpretation that it is continuous, but not present within 10 feet of ground surface along much of the canal. Overlying the sand and gravel is a silty-clay unit, described as dark olive-brown to reddish-brown. This unit was observed in all soil borings, but it appears to be thinner in AOC 1. Directly overlying the silty-clay is the clay canal liner, characterized as yellowish-brown to brownish-yellow sandy-clay with low plasticity. This clay canal liner varied between 0 and 3.5 feet thick and was dry at all soil boring locations where observed. The clay liner may have been originally derived from natural clays; therefore, the absence of a distinguishable clay liner in some soil boring locations may be due to the similarity of underlying native clays. The clay liner is thickest in the western-most reaches of the canal at the Site, thins in the region of the canal south of the former roundhouse, and appears again in the eastern AOC. Various types of fill materials, including sand, cinders, and brick, as well as natural sediments/organic debris and topsoil, overlie the clay liner. The thickness of the fill and sediment varies from 0.25 to 2.8 feet in the canal.

3.1.2.1 Section L-L'

This section (Figure D-13, Appendix D) illustrates the continuity of the silty-clay unit on the western portion of the canal located on NPS property. The thickness and continuity of the upper clay canal liner is also evident in AOC 1. The clay canal liner is continuous

throughout AOC 1, varying in thickness between 0.5 and 3.9 feet, and is consistently dry. The silty-clay unit is directly beneath the clay canal liner and is relatively uniform in composition in AOC 1. Five of the ten soil borings in this area penetrated the top of the sand and gravel unit, between 9 and 10 feet bgs. This does not indicate that the sand and gravel is not continuous within this area, but instead indicates that the contact between the two units occurs around 10 feet bgs. The composition of the sand and gravel unit in AOC 1, as encountered in soil borings, varies widely in particle size, from a sandy-clay to pebbles and gravels. The canal liner is overlain by fill and natural sediments, silt and sand with some pebbles toward the eastern extent of AOC 1.

The two temporary piezometers installed in AOC 1, PZ01-04 and PZ01-09, were screened through the silty-clay semi-confining unit and penetrated the sand and gravel below. Soil boring logs for SB01-01 through SB01-10 indicate that the clay is dry to a depth of 8-9 feet bgs, which indicates that this material acts as a confining unit in this location (with water levels at 3.9 and 1.4 feet bgs).

Soil screening concentrations (PID) for soil samples within AOC 1 vary between non-detect and 309 parts per million (ppm) (SB01-01). In general, soil screening concentrations are highest for samples collected from the clay canal liner and just below the liner. The highest concentrations measured in AOC 1, however, were encountered at SB01-01 and occur near the clay-silt and sand/gravel unit contact, at approximately 9 feet bgs. TPH-DRO concentrations for soil/sediment samples collected from AOC 1 vary between non-detect and 47 mg/kg. Except in the samples collected at SB01-04, TPH-DRO concentrations are generally higher in sediments collected above the clay canal liner than soils collected below the liner. TPH-DRO concentrations were non-detect at soil borings SB01-09 and SB01-10. All TPH-DRO soil results in AOC 1 are well below the MDE Residential Cleanup Standard of 230 mg/kg.

3.1.2.2 Section M-M'

This section (Figure D-14, Appendix D) also illustrates the thickness and continuity of the silty-clay unit. This unit is encountered at depths of 0.6–4.0 feet bgs and extends to the bottom of each of the ten borings. The uppermost five-to-seven feet of the silty-clay was dry in all borings, with moisture and/or saturation noted only in the bottom one-to-three feet at each boring. Unlike the previous section of the canal (AOC 1), the clay liner is discontinuous across AOC 2. This is likely a result of the clay liner's composition and proximity to the surface of the canal; the liner may have weathered away or mixed with the native lithology. Where present, the clay liner varies from 0.3 to

2.9 feet thick and is dry. The clay liner (where present) and native silty-clays are overlain in AOC 2 by fill or sediments consisting of sands, silts, and pebbles.

Soil screening concentrations (PID) recorded at all boring locations within AOC 2 exhibit relatively few detections, with a maximum screening concentration of 27.2 ppm in SB02-04. TPH-DRO concentrations are also relatively low, ranging between non-detect and 6.7 mg/kg, which is well below the MDE residential cleanup standard for soils.

3.1.2.3 Section N-N'

Similar to Section L-L', this section (Figure D-15, Appendix D) illustrates the continuity of the clay canal liner and the native silty-clay. The silty-clay unit is at least 8.0 feet thick in this section of the canal. This section of the canal is wetter than the previous two sections; borings in the canal indicate that clay became wetted at approximately 6 feet bgs. Although soil samples collected at SB03-07, SB03-09, and SB03-10 did not feature an identifiable clay canal liner, a dry clay liner between 0.2 and 1.0 feet thick was observed at the other boring locations in AOC 3. As in other areas of the canal prism, the clay liner is overlain by a combination of fill and natural sediments. The sand and gravel unit was not encountered at a depth of ten feet in AOC 3 soil borings; however, an isolated gravel bed was identified from 7.5 to 8.1 feet bgs in soil borings SB03-09 and SB03-10.

Detected soils screening (PID) concentrations were encountered within each of the soil borings in AOC 3, and ranged from non-detect to 211 ppm (SB03-07). In general, soil screening concentrations were highest in samples collected below the clay canal liner. TPH-DRO concentrations varied between 4.2 and 230 mg/kg. The TPH-DRO concentration of 230 mg/kg corresponds to the shallow sediment sample collected above the clay liner in SB03-06. This measurement is equal to the MDE Soil Residential Cleanup Standard of 230 mg/kg. In general, TPH-DRO concentrations in AOC 3 are higher in the sediments collected above the clay liner than in the soils below the clay liner.

3.1.3 Revisions to Existing Site Cross-sections

Revisions to several existing site cross-sections (A-A', B-B', C-C', E-E', F-F') were made to incorporate results of the recent canal investigation. Cross-sections that were not revised are not interpreted below, but are described in detail in the SI Report and Revised SCM.

3.1.3.1 Section A-A'

This section (Figure D-2, Appendix D) illustrates the continuity of the lower gravelly sand unit on the western portion of the Site and NPS Property. The wells installed on the western area of the Site, including CSXT MW-33, CSXT MW-29 and CSXT MW-20, are screened through the silty-clay semi-confining unit and penetrate the sand and gravel. The boring SB01-01 also passed through the silty-clay semi-confining unit and penetrated the sand unit below. Soil screening concentrations (PID) recorded at CSXT GP-44, CSXT MW-33, CSXT MW-29, and SB01-01 indicate that PID concentrations generally increase with depth at these locations. TPH-DRO concentrations are highest in the wells nearer the location of the historic LPH footprint (CSXT MW-29 and CSXT MW-33), and are two orders of magnitude lower in the canal area. Measurable LPH was recorded at CSXT MW-33 in 2009; however, free product has not been detected in any of the wells shown on this cross section since that time.

3.1.3.2 Section B-B'

This section (Figure D-3, Appendix D) illustrates the location of the BRT where it cuts across the entire thickness of the silty-clay unit, thereby restricting groundwater flow in the unit and reducing hydraulic gradients upgradient of the BRT. Because the BRT is only 15 feet deep and only partially completed in the lower gravelly sand unit, the increased hydraulic head upgradient of the BRT results in underflow of groundwater in the gravelly sand unit. Water-level data on the east side of the BRT also indicates that underflow of groundwater occurs rather than lateral flow around the BRT.

This section also illustrates the continuity of the lower sand and gravel unit across the canal. Taking into account boring log data from NPS MW-1 and GP-42A, (which are proximate to CSXT MW-9), CSXT MW-9 is screened across the same elevation as the gravelly sand unit observed in the boring logs for NPS MW-1 and GP-42A. Therefore, CSXT MW-9 is considered to be screened across the sand unit, and historical analytical sample data from CSXT MW-9 is valid for comparison with sample data from other wells also screened in the gravelly sand unit. Historically, samples from this well have shown no pattern of reported concentrations of TPH-DRO, which have always been at least one order of magnitude lower than concentrations in samples from the source area wells. TPH-DRO concentrations from the canal borings SB01-05 and SB01-06 are also at least one order of magnitude lower than concentrations closer to the source area. No detections were recorded during PID soil screening of CSXT MW-9, indicating minimal soil contamination at this location. The thickness and continuity of the upper silty-clay layer is also evident in this section. Boring log data for SB01-06 and

SB01-05 further delineate the thickness and continuity of the upper silty-clay layer. PID readings in the canal borings are relatively low, with the highest readings recorded within the clay canal liner.

3.1.3.3 Section C-C'

Similar to Section A-A', this section (Figure D-4, Appendix D) shows the continuity of the upper silty-clay and the lower sand and gravel units. The boring log for CSXT MW-51 indicates that the gravelly sand unit is present at the north boundary of the Site. Boring logs for wells on CSXT property (CSXT MW-22, CSXT MW-5, and CSXT MW-4R) and NPS property (NPS MW-4, SB01-09, and CSXT MW-8) also show the gravelly sand unit. At the south end of the cross-section, the boring log for GP-42A, installed adjacent to CSXT MW-8, indicates the top of the sand unit is located at approximately 213 feet above mean sea level (msl), which is across the screened intervals of monitoring wells CSXT MW-8 and CSXT MW-9.

PID soil screening concentrations for wells within this section indicate minimal contamination at the upgradient and downgradient edges of the Site (represented by CSXT MW-51 and CSXT MW-8/GP-42A). Soil screening concentrations above 0.0 ppm were not detected at CSXT MW-8/GP-42A. Soil screening concentrations at wells CSXT MW-22 and CSXT MW-4R, and at soil boring SB01-09, are relatively low in the unsaturated zone, increase within the saturated portion of the clayey-silt and sand, and decrease within the sand and gravel unit. TPH-DRO concentrations are highest near historically contaminated wells and are not detected downgradient of the BRT.

3.1.3.4 Section E-E'

This section (Figure D-6, Appendix D) indicates that the geology present here is consistent with the geology across the Site. The upper silty-clay unit was observed at all GP locations (GP-53, GP-54, GP-56, GP-61, GP-63, and GP-66), at all monitoring well locations (NPS MW-11, NPS MW-18, and NPS MW-13), and at both canal boring locations (SB02-09 and SB02-10) in this cross-section. The lower sand and gravel unit is continuous in this section and has a greater amount of gravel as described in the boring logs for NPS MW-11, NPS MW-18 and NPS MW-13. LPH has never been observed in these NPS monitoring wells. The clay and silt unit is relatively thick at this location; PID soil screening data from CSXT GP-56 indicate that the highest soil vapor readings are near the center of this unit. Additionally, PID soil screening data from the canal indicate that the highest soil vapor readings occur in the middle of the clay unit.

TPH-DRO concentrations indicate that levels of soil contamination at this area of the site are relatively low or not detected.

3.1.3.5 Section F-F'

This section (Figure D-7, Appendix D) indicates that site geology east of the oil-water separator in the vicinity of AOC 3 is consistent with the typical Site geology. The upper silty-clay unit is observed in all borings on the cross-section. Additionally, three wells in the section (CSXT MW-50, NPS MW-17, and NPS MW-14) are screened at least partially in the lower gravelly sand.

Soil screening data and TPH-DRO soil concentrations indicate that levels of soil contamination at this area of the Site are relatively low or below detection limits. The highest results were identified in canal soil boring SB03-02 and occur at a shallow depth bgs.

3.2 Groundwater Occurrence and Flow

The SCM identifies three general hydrogeologic units in the surficial aquifer. These three units correspond to the fill materials and/or shallow sediments; the fine-grained silts and clays; and the underlying sand and gravel unit, which is partially confined by the silt and clays. The fate and transport of LPH and dissolved-phase TPH-DRO are governed by the shallow groundwater flow dynamics.

Initial soil moisture and/or saturated conditions were first observed at depths of approximately 5.5 to 6 feet bgs in canal investigation soil borings. Groundwater elevations collected from temporary piezometers and nearby existing wells during the canal investigation are presented on Table 3. Water-level measurements collected from temporary piezometers indicate that the potentiometric surface is encountered between 1.07 and 3.91 feet bgs at the bottom of the canal. In each of the six piezometers, the static depth-to-water measurement indicate that the potentiometric surface is higher than the top of wet or saturated material, which suggests that the silty-clay is a confining unit in this location.

Figure 5 presents contoured groundwater elevations in the vicinity of the canal. This figure indicates that flow directions and groundwater gradients in the vicinity of the canal are consistent with previous interpretations, with a primary inferred flow direction towards the Potomac River. This figure combines data collected from wells screened

within the silt-clay confining unit and the sand and gravel unit below, and is intended only for general flow direction information.

3.3 Analytical Results

The analytical results of the samples collected during the canal investigation, submitted to TestAmerica Laboratories for analysis, are summarized in Tables 4 (soils) and 5 (groundwater), and discussed below. Full TestAmerica Laboratory Packages are included as Appendix E. Results of the chemical fingerprinting analysis performed by NewFields Companies, LLC, presented in Appendix F, are summarized in section 3.3.3.

3.3.1 Soils and Sediments

A total of 60 soil and sediment samples were collected from the 30 soil borings in AOCs 1, 2, and 3. Samples were collected from intervals above and below the clay canal liner with the highest respective PID screening concentrations; these samples are referred to as sediment and soil samples, based on their location either above or below the liner, respectively. Typically, sediment samples were collected above three feet bgs (from 0.0 to 3.0 feet bgs) and soil samples were collected below 3 feet bgs (3.0 to 10.0 feet bgs). Table 4 presents analytical results from soil and sediment samples; concentrations are presented only for constituents that were detected in soils.

3.3.1.1 AOC 1

In AOC 1, a total of five VOCs (2-Butanone, Acetone, CFC-11, Methyl tert-butyl ether [MTBE], and Methylcyclohexane) were detected in soil. These constituents were detected only in soils below the clay liner, with the exception of CFC-11, which was detected at a concentration of 2.4 (J) micrograms per kilogram (µg/kg) in sediments collected from SB01-07 (1.0-1.5).

A total of 23 SVOCs were detected in AOC 1. SVOCs were detected in eight of ten sediment samples and two of the ten soil samples. SVOCs were not detected in either the sediment or soil samples collected at SB01-05 or SB01-08.

TPH-GRO were detected in 15 of the 20 total samples from AOC 1, at concentrations up to 40 mg/kg from SB01-04 (5.0-5.5). TPH-GRO were not detected in either sample from SB01-01. SB01-03, SB01-09, and SB01-10 only had TPH-GRO detections from

sediment samples collected above the clay liner, whereas SB01-06 had one detection from the soil sample collected below the liner.

TPH-DRO were detected in eight of ten AOC 1 borings, at concentrations up to 47 mg/kg from soil at SB01-04 (5.0-6.0). TPH-DRO were not detected in samples from borings SB01-09 and SB01-10. With the exception of borings SB01-04 and SB01-05, higher TPH-DRO concentrations were measured from sediment samples collected above the clay canal liner than from soil samples collected below the liner. TPH-ORO were detected in all twenty samples collected from soil borings in AOC 1. Concentrations ranged from 5.9 mg/kg in sediment collected above the liner from SB01-04 (0.0-1.0) to 2 mg/kg in soil collected below the liner from SB01-02 (5.0-6.0). All AOC 1 samples had measured concentrations of TPH-DRO well below the MDE Residential Cleanup Standard of 230 mg/kg.

3.3.1.2 AOC 2

Two VOCs, acetone and CFC-11, were detected in samples from AOC 2. SB02-03 and SB02-04 had detections from sediments above the liner; SB02-09 had detections from soils below the liner; and SB02-07 had detections in both the soil and sediment samples. CFC-11 was only detected in sediment samples collected above the clay liner.

A total of 22 SVOCs were detected in AOC 2, with SVOCs detected in eight of ten sediment samples and two of the ten soil samples. The three constituents detected in soils below the clay liner were fluoranthene, bis(2-Ethylhexyl)phthalate, and 2,6-Dinitrotoluene. SVOCs were not detected in either sample from borings SB02-03 and SB02-06.

Detections of TPH-GRO were observed in each of the AOC 2 sediment samples, and four of the ten soil samples. The highest concentration of TPH-GRO was 7.6 mg/kg from sediment at SB02-04 (0.5-1.0). TPH-DRO were detected in all but three of the sediment samples collected from AOC2; TPH-DRO were not detected in either sample from SB02-01, SB02-03, or SB02-05. TPH-DRO concentrations ranged from non-detect to 6.7 (J) mg/kg from sediments at SB02-07 (1.0-1.5); however, the range of detected concentrations is similar to the range of detection limits of TPH-DRO for these samples. All AOC 2 samples had measured concentrations of TPH-DRO well below the MDE Residential Cleanup Standard of 230 mg/kg.

Detectable concentrations of TPH-ORO were measured in most of the AOC 2 samples. TPH-ORO were not detected in the samples from SB02-07 (soil), SB02-09 (sediment), or either sample from SB02-10. Concentrations ranged from non-detect to 7.9 mg/kg in sediment from SB02-02 (0.5-1.0).

3.3.1.3 AOC 3

VOCs were detected in each of the samples collected from AOC 3. A total of nine constituents were detected, including acetone, which was detected in 16 of the 20 samples. VOC concentrations were relatively low; other than acetone (measured at a concentration of 54 µg/kg in the sediment sample from SB03-04 [0.5-1.0]), the highest concentration measured at AOC 3 was of 1,2-Dichlorobenzene, at a concentration of 13 µg/kg in the sediment sample from SB03-06 (0.5-1.0). Measured ranges of VOCs were relatively similar to the range of reporting limits for these samples.

A total of 19 SVOCs were observed in soil borings from AOC 3. SVOCs were not detected in the soil samples collected from SB03-01, SB03-03, SB03-10, or in either of the samples collected at SB03-09.

TPH-GRO were not detected in either sample from SB03-01, SB03-09, or SB03-10, but were detected at concentrations up to 52 mg/kg (the soil sample from SB03-05 [4.0-4.5]) in other samples from AOC 3.

TPH-DRO were detected in each of the AOC 3 soil borings. The highest concentration measured was 230 mg/kg in sediment from SB03-06 (0.0-1.0). This concentration is equal to the MDE Residential Cleanup Standard for TPH-DRO. TPH-ORO were detected in all samples, except the sediment sample from SB03-04, at concentrations up to 79 mg/kg in soil from SB03-08 (3.0-4.0).

3.3.2 Groundwater

Groundwater samples were collected at six temporary piezometers in August 2013, and submitted for laboratory analysis for TPH-GRO, TPH-DRO with and without SGC, VOCs, and SVOCs. Analytical results are presented in Table 5, for detected constituents only.

Two VOCs were detected in temporary piezometers PZ01-04, PZ01-09, and PZ03-04. Acetone was detected in PZ03-04 at a concentration of 16 micrograms per liter (µg/L), and MTBE was detected in PZ01-04 at 0. 87 µg/L and PZ01-09 at 3 µg/L. SVOCs

were detected in four of the six groundwater samples. A single constituent, caprolactam, was detected at a concentration of 6.1 (J) µg/L in the sample from PZ02-08. Two, five, and seven constituents were detected in the samples from PZ03-08, PZ03-04, and PZ01-04, respectively. SVOC concentrations, where detected, were relatively low, with a maximum concentration of 12 µg/L (benzo(g,h,i)perylene at PZ01-04).

TPH-GRO were detected in each of the six samples, at concentrations from 0.013 milligrams per liter (mg/L) (JB) (PZ02-08) to 0.079 mg/L (B) (PZ03-08).TPH-DRO were also detected in each of the six groundwater samples. The highest concentration of TPH-DRO was 27 mg/L (B), detected in the sample from PZ03-04. In general, the concentrations from AOC 3 samples were approximately an order of magnitude higher than the concentrations measured at the other areas.

The TPH-DRO concentrations following SGC, which removes naturally-occurring DRO compounds and products of petroleum hydrocarbon degradation, are marginally lower than the original TPH-DRO concentrations, indicating that for the most part, these TPH-DRO concentrations are representative of petroleum hydrocarbons.

3.3.3 Chemical Fingerprinting

NewFields Companies, LLC performed a chemical fingerprinting analysis of five LPH samples collected from Site monitoring wells and ten soil/sediment samples collected from canal investigation soil borings. The selection for fingerprinting of ten of the sixty soil/sediment samples collected from the canal prism was based upon the results of the TestAmerica analyses, relative sampling location, and soil screening data. The objectives of this analysis were to characterize the potential sources and age of LPH and dissolved-phase TPH present at the Site and the C&O Canal. The complete analysis is provided as Appendix F. The primary conclusions of the chemical fingerprinting analysis are summarized below:

- The LPH present at the Site consists only of diesel fuel compounds (diesel fuel #2).

- LPH samples from locations west of the former roundhouse, within the extent of the historic LPH pool, are very similar, and exhibit significant effects of weathering. The sample from CSXT MW-70, located east of the former roundhouse in the area of recent LPH detections, shows minimal weathering.

- Sulfur concentrations of the LPH samples indicate that the source of the LPH pool located west of the former roundhouse is historic high-sulfur diesel, which has not been permitted in on-road diesel fuel since 1993 or in off-road diesel fuel since 2007. The sulfur concentration of the sample from CSXT MW-70 is significantly lower, indicating that a significant proportion of the original source of diesel at this location is from low-sulfur diesel fuel, required for off-road diesel after 2007.

- Fingerprinting of soils and sediments identified impacts from weathered diesel fuel in AOC 1 (soils below the clay canal liner) and AOC 3 (above and below the clay liner). However, the TPH chemical fingerprints for the majority of these samples were identified as natural organic matter and/or urban runoff, rather than weathered diesel fuel. Characteristics of urban runoff were identified in sediment samples (collected above the clay liner) in each AOC; however, fingerprints consistent with urban runoff were not identified for any samples collected below the clay liner.

4. NPS MW-18 Well Installation

NPS MW-18 was installed at the Site in June 2013 in accordance with email correspondence from MDE received on March 15, 2013. The primary purpose of installing this well was to replace monitoring well NPS MW-11, which was destroyed in 2012. An additional objective was to install a monitoring point within the silty-clay hydrostratigraphic unit, to facilitate additional characterization of these materials at the Site.

4.1 Well installation and Development

Utility location due diligence was conducted prior to drilling activities to identify and avoid any existing infrastructure in the vicinity of the planned well location. The utility locate contractor, SoftDig, conducted an on-site ground-penetrating radar and radio detection survey of the planned well location on June 24, 2013.

The drilling subcontractor, DTCI of Jarrettsville, Maryland, installed NPS MW-18 on June 24, 2013 using a hollow-stem auger. The well was constructed of 4-inch PVC riser and 4-inch PVC 20-slot screen. NPS MW-18 was screened from 7 to 15 feet bgs. Well construction details for NPS MW-18 are presented in Table 3. NPS MW-18 boring and well construction logs are included in Appendix G.

NPS MW-18 was developed on July 3, 2013 via surging and pumping. Purge water generated during development was containerized and disposed of in the on-site CSXT oil/water separator. LPH was not observed in the purge water during development. Soil cuttings generated during drilling were containerized in 55-gallon drums for off-site disposal. All activities on NPS property were conducted in accordance with the requirements of the NPS Special Use Permit #NCR 3100-5700-12.047.

NPS MW-18 was surveyed on September 10, 2013 by KCI Technologies of Fulton, Maryland. The survey included top of casing and ground surface elevations, and horizontal coordinates (northing and easting). Survey data are presented on Table 3. The survey report is included as Appendix C. The location of NPS MW-18 is presented on Figure 1.

4.2 Soil Screening and Soil Sampling Results

Split-spoon samplers were driven ahead of the hollow-stem auger during drilling and continuous soil samples were collected at each boring from ground surface to final

boring depth. Soil samples were screened using a PID during logging of the lithology. PID readings varied between 0 ppm to 35 ppm, which was observed at a depth of 8.0 to 8.5 feet bgs. PID screening values and subsurface lithology are presented on the NPS MW-18 boring log (Appendix G). Soil cuttings were containerized in glass jars and released to NPS on June 25, 2013, immediately following the completion of drilling activities.

Grab soil samples for laboratory analysis were collected from split-spoon samples retrieved at each boring. One sample was collected from the depth interval exhibiting the highest PID reading, 8.0 to 8.5 feet bgs (8.0 to 9.0 feet bgs for samples collected for TPH-DRO/ORO and SVOCs). Soil samples were shipped to TestAmerica Laboratories in Savannah, Georgia under routine chain-of-custody for the following analyses:

- TPH-GRO via USEPA method 8015;
- TPH-DRO/ORO via USEPA method 8015;
- Full-suite VOCs including fuel oxygenates via USEPA method 8260; and
- SVOCs via USEPA method 8270.

Analytical results are summarized in Table 6. The complete laboratory analytical report is included as Appendix E. A summary of soil analytical results from the sampling event conducted on June 24, 2013 is included below:

Just one VOC was detected in NPS MW-18 soil samples. CFC-11 was detected at a concentrations of 6.3 µg/kg. TPH-DRO was detected at concentrations of 12 mg/kg. TPH-GRO was detected at concentrations of 0.034 (J) mg/kg. TPH-ORO was not detected in NPS MW-18 soil samples.

4.3 Hydraulic Testing

Rising head tests (slug tests) were performed at NPS MW-18 on July 25, 2013. Slug testing was conducted in accordance with the procedures presented in the revised SIWP, with water-levels recorded via submerged transducers at a 0.25-second frequency. Testing was comprised of three rising head tests, using two different size slugs (disposable bailers) with calculated displacements of 1.7 feet and 0.4 feet for a 4-inch casing diameter. Response data (elapsed time and corresponding changes in

water levels) collected during each test were converted to displacement data, plotted as normalized head versus time to identify coincidence of repeat tests, and analyzed using AQTESOLV for Windows® (Duffield 2007) to obtain near-well hydraulic conductivity estimates. Appropriate analytical solutions available in AQTESOLV were applied following the guidelines presented in *The Design, Performance, and Analysis of Slug Tests* (Butler 1998).

Normalized test data for NPS MW-18 indicated coincident curves for tests 1 and 2, which were performed using the larger bailer (1.7-feet displacement); however, the data for test 3 (0.4-feet displacement) did not match tests 1 and 2. The lack of coincidence of test data for different slug sizes (different initial displacements) indicates the presence of a low-permeability well skin at NPS MW-18. This inference was confirmed by diagnostic testing in AQTESOLV; application of the Cooper et al. solution (Cooper et al. 1967) yielded implausibly-low storativity estimates, which indicates the presence of well skin or significant vertical flow components.

Tests 1 and 3 were analyzed using the Peres (1989) solution. Hydraulic conductivity estimates of 0.26 feet/day (test 1) and 0.34 feet/day (test 3) were calculated by dividing estimated transmissivity by the screen length (8 feet). The normalized displacement curves for NPS MW-18 and AQTESOLV plots are presented in Appendix H.

4.4 Summary of NPS MW-18 Results

The primary objective of constructing well NPS MW-18 was to isolate the silty-clay material in order to collect additional, high-quality physical and chemical characterization data for the silty-clay unit that is encountered at most boring locations at the Site. As indicated in Appendix G, NPS MW-18 is screened exclusively within the silty-clay unit, but did not fully penetrate the unit, which indicates that this unit is at least 10.7 feet thick at this location, and relatively homogeneous with little to no interbedded sand or gravel zones. Water-level measurements collected during development indicate that the silty-clay unit is confining at this location. This well does not penetrate the underlying sand and gravel unit, but the presence of confined conditions within the silty-clay indicates that the alluvium is likely also confined at this location.

5. Evaluation of the Site Conceptual Model

Canal investigation activities collected a significant amount of additional Site data for characterization of conditions in the vicinity of the C&O Canal. The following sections discuss the results of the canal investigation and NPS MW-18 installation in the context of the SCM.

5.1 Geology of the Canal

Completion of thirty soil borings within the three AOCs along the canal indicates that the geology of the canal is largely consistent with previous investigations and interpretations. The distinguishing functional feature of the canal prism is the clay canal liner. This liner is as thick as 3.5 feet, where present. The absence of a distinguishable liner in some borings from AOCs 2 and 3 indicates that this feature is discontinuous. The clay canal liner is overlain by 0.25 to 2.8 feet of fill, sediments, and topsoil. The composition of the material superficial to the liner varies by location. Soil borings were not completed along the banks of the canal; as such, it is unknown if the clay canal liner extends upwards along the banks of the canal or is only present within the canal proper.

Subsurface units beneath the clay canal liner are consistent with those observed across the Site, and are comprised of a fine-grained silty-clay unit underlain by sands and gravels. The sand and gravel unit was not encountered in all of the canal investigation soil borings, likely due to the termination of each boring at approximately 10 feet bgs. Beneath the canal, the silty-clay unit is relatively uniform in composition, with few to no interbedded coarser materials, and was observed to be a minimum of 5.9 feet thick at SB01-04.

5.2 Site Hydrogeology

Soil sample logging within the canal proper indicated that the clay canal liner and a variable thickness of underlying clays and silts were dry in all soil boring locations. Comparison of the depths of initial soil moisture and saturated conditions to water-level measurements collected at temporary piezometers completed within the silty-clays and/or sands and gravels beneath indicate that the silty-clay functions as a confining unit in the vicinity of the canal. Confining conditions were also observed at NPS MW-18.

The clay canal liner and underlying fine-grained materials are assumed to limit vertical flow within the canal proper, due to the unsaturated conditions observed in these materials. This is further evidenced by the presence of standing water in sections of the canal over a period of several months in early-to-mid 2013.

Results of slug testing conducted at NPS MW-18 indicates that the hydraulic conductivity of the silty-clay is relatively low (average hydraulic conductivity of 0.3 feet/day). Low conductivity is also assumed based on relatively poor production of temporary piezometers located within the canal; however, the rate of water-level recovery in the temporary piezometers may not be a reliable indicator of material permeability due to the use of pre-packed well screens.

Water-level measurements collected from temporary piezometers within the canal proper are similar to water-levels at nearby existing Site wells. Interpreted flow directions and groundwater gradients are consistent with previous interpretations of groundwater flow at the Site.

5.3 Site Chemistry

5.3.1 LPH Assessment

Comprehensive fingerprinting analysis of LPH samples at the Site confirms previous interpretations of the nature of the historic diesel pool located west of the former roundhouse. The LPH in this area was characterized as highly-weathered, high-sulfur diesel, which indicates that the original diesel release(s) were of historic (non-modern) diesel fuel that has been subject to environmental degradation in the subsurface for a relatively long period of time. Chemical fingerprinting of these samples indicate that they show relatively similar characteristics. Alternatively, the LPH sample collected from CSXT MW-70 was characterized as a modern diesel mixture, with relatively little weathering, which indicates that potential release(s) to this area are relatively recent and consist of primarily modern low-sulfur diesel fuel. This is consistent with the results of a closed circuit television (CCTV) survey conducted on October 9, 2013 which identifies an underground pipe linking the Maryland Transit Authority fueling station spill pans to the Site oil-water separator as a potential source of the recently-observed LPH in well locations east of the former roundhouse (CSXT MW-70 and CSXT MW-39). Preliminary findings of this CCTV investigation were submitted to MDE via email correspondence on October 17, 2013. Further investigation in this area will be conducted before the end of 2013 as detailed in the Supplemental LPH Delineation Work Plan, submitted to the MDE on October 23, 2013 (ARCADIS 2013b).

LPH fingerprinting analysis was unable to conclusively link the TPH-DRO signature in soil/sediment samples collected during the canal investigation to the on-site LPH sample characteristics; therefore, it is unknown if the original source of TPH-DRO in the vicinity of the canal is derived from releases originating on-Site or off-Site.

5.3.2 Constituent Concentrations in Soil

In general, the most constituents were detected in soil boring samples from AOC 1 and AOC 3, while AOC 2 showed relatively few detections and low concentrations. VOCs were detected in samples from each area, at relatively low concentrations on the order of 5 to 50 µg/kg. Acetone was the most-frequently detected VOC in soil and sediment samples. SVOCs were also detected in samples from each AOC; however, these constituents were detected more frequently in sediment samples (above the clay canal liner) than the soils below the clay liner. Chemical fingerprinting analysis of the samples with the highest SVOC concentrations in each AOC indicates that these chemical signatures are consistent with urban runoff. TPH-GRO were detected in samples collected from all but four canal soil borings. TPH-GRO concentrations were generally higher in the sediment sample than the soil sample from each soil boring.

TPH-DRO concentrations in soils and sediments beneath the canal showed significant variation among each of the three AOCs. The lowest concentrations were observed in AOC 2; TPH-DRO were detected at concentrations up to an order-of-magnitude higher in AOC 1, and an additional order-of-magnitude higher in AOC 3. TPH-DRO were detected in each sample collected from AOC 3. The relatively low concentrations of TPH identified in AOC 2 are consistent with the fingerprinting analysis, which identifies the sources of these constituents as natural organic matter and/or trace urban runoff. However, the TPH-DRO measured in all of the canal soil and sediment samples were at concentrations at or below the MDE Residential Cleanup Standard of 230 mg/kg.

Chemical fingerprinting results indicate that much of the TPH present in canal soil boring samples are derived from natural organic matter and/or urban runoff. However, one sample collected from AOC 1 (SB01-04) and four samples from AOC 3 are characterized as having components of weathered diesel fuel.

5.3.3 Dissolved-phase Constituent Concentrations

Groundwater sampling results from temporary piezometers installed within the canal prism are generally consistent with the trends noted from soil sample analysis. Samples from AOC 2 feature few detections, and relatively low concentrations of TPH-DRO and TPH-GRO. Samples from AOC 3 exhibit the highest concentrations of TPH-DRO and TPH-GRO. The relatively high number of constituents detected at PZ01-04 may be due to the completion of this temporary piezometer well screen into the sand-and-gravel unit as well as the silty-clay; this is consistent with the role of the sand and gravel hydrostratigraphic unit as the primary zone for constituent migration at the Site. In addition, PZ01-04 is located in close proximity to well CSXT MW-06R, which has shown detections of TPH-DRO, TPH-GRO, SVOCs, and fuel-derived VOCs in recent sampling events.

Comparison of results from groundwater samples collected from temporary piezometers to samples collected from permanent Site monitoring wells should be considered on a qualitative basis only, due to the use of pre-packed screens and lack of well development at the temporary piezometers. In general, dissolved-phase constituents and concentrations identified in samples collected beneath the canal prism are consistent with historic Site data, with the exception of the relatively higher TPH-DRO concentrations identified in AOC 3.

6. Conclusions

The following conclusions summarize the results of recent Site investigations and the current understanding of the Site conditions as they relate to the SCM.

- The geology of the canal is consistent with previous interpretations and Site cross-sections. Water-level data for the area of the canal indicate the silty-clay unit is confining in this location. A relatively low hydraulic conductivity of 0.3 feet/day was estimated from slug tests performed at NPS MW-18, which is screened within this hydrostratigraphic unit. This hydraulic conductivity is lower than the values estimated for the sand and gravel hydrostratigraphic unit at the site from slug testing conducted in January 2013, and indicates a low potential for horizontal migration of contaminants at the Site within this unit.

- Soil and groundwater sample analysis results from the canal investigation and installation of NPS MW-18 are similar to recent and historic constituent concentrations detected in these areas. LPH was not detected in any of the thirty soil borings installed within the canal prism footprint.

- TPH-DRO concentrations in soil were at or below the MDE Residential Cleanup Standard of 230 mg/kg in each of the sixty soil samples collected within the C&O Canal.

- Chemical fingerprinting of LPH collected from Site monitoring wells indicates that the LPH recently-detected at wells CSXT MW-39 and CSXT MW-70 is significantly different from the existing LPH found in areas to the west of the former roundhouse. This analysis concludes that the LPH from the sample collected at CSXT MW-70 is unweathered and fits the profile of a modern diesel fuel.

- Chemical fingerprinting of soil samples collected in the canal indicate that these samples contain petroleum hydrocarbons derived from weathered diesel fuel, natural organic matter, and urban runoff sources. Comparison of soil samples to LPH fingerprints was inconclusive and did not provide a definite link between on-Site LPH and the TPH-DRO in soils and sediments of the C&O Canal.

Further investigation and delineation of the LPH encountered in 2013 at wells CSXT MW-70 and CSXT MW-39 is ongoing. The laser induced fluorescence investigation is planned for December 2013 as outlined in the Revised Supplemental LPH Delineation Work Plan originally submitted to MDE on October 23, 2013.

7. References

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ARCADIS

Tables

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
September 1991	NPS	Investigation	National Park Service (NPS) conducted a soil survey evaluating the presence of petroleum residuals in the C&O canal silt near CSXT property in support of a bid for a rewatering permit. Reportedly, visual identification of petroleum was made in three areas; however, no samples were submitted for analysis of petroleum constituents.
March 1992	CSXT/Eder	Remediation	CSXT/Eder Associates (Eder) provided oversight for removal of a 16,000 gallon diesel underground storage tank (UST) adjacent to the former pump house and 500,000 gallon aboveground storage tank (former AST System). The UST had been previously pumped out and taken out of service in 1974. Approximately 100 cubic yards of impacted soils related to the UST were excavated and properly treated/disposed off-site. Analysis of soil confirmation sampling from the excavation showed total petroleum hydrocarbon (TPH) concentrations below the current MDE non-residential cleanup level of 620 mg/kg.
March 1992	CSXT/Eder	Investigation	CSXT/Eder collected soil samples to characterize soils identified in the 1991 NPS report as petroleum impacted.
July 1993	CSXT/Eder	Investigation	CSXT/Eder conducted a focused sediment/soil boring investigation performed to further investigate the extent of residual petroleum compounds in the C&O Canal in the three primary areas of concern and a small area near Lock #30.
January 20, 1994	MDE	Correspondence	Maryland Department of the Environment (MDE) required that CSXT install four monitoring wells on CSXT property between the C&O Canal and four suspected source areas, including the 500,000 gallon AST, the tank car diesel fuel unloading racks, the diesel fueling pump house, and the roundhouse.
July 1994	CSXT/Eder	Investigation	CSXT/Eder installed four monitoring wells (CSXT MW-1, 2, 3, and 4) to investigate the groundwater quality between the suspected source areas and the C&O Canal. Groundwater samples collected from the four monitoring wells were analyzed for BTEX and TPH-DRO. Liquid-phase hydrocarbons (LPH) were later observed at MW-2. CSXT/Eder recommended installation of two additional monitoring wells downgradient of CSXT MW-1, 2, and 4 on the northern canal tow path.
August 30, 1994	MDE	Correspondence	MDE approves the installation of the two additional wells and requests that CSXT install three additional monitoring wells with at least one installed on the south side of the C&O Canal.

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
November 1994	CSXT/Eder	Investigation	CSXT/Eder conducts a product baildown test at MW-2. Results indicate a very slow LPH recovery rate. Based upon the slow recovery rate, a passive product recovery system was recommended by Eder.
January 1995	CSXT/Eder	Remediation	CSXT/Eder initiated passive free product recovery utilizing a Siphons Without a Pump (SWAP) 4 unit at MW-2.
August-September 1995	CSXT/Eder	Investigation	After coordination with NPS for property access, CSXT/Eder installed additional monitoring wells (CSXT MW-5, 6, 8, and 9) to further evaluate groundwater quality downgradient and in the vicinity of the former AST System. Groundwater samples were collected from CSXT MW-1, 3, 5, 6, 8, & 9 (LPH at CSXT MW-2 and CSXT MW-4). Groundwater samples were analyzed for BTEX, naphthalene, and TPH-DRO.
March 1996	NPS/E&E	Site Assessment and Characterization	On behalf of the NPS, Ecology and Environment, Inc. (E&E) prepared a Draft Site Assessment and Characterization Report based on additional sediment and soil sampling. The results of the collection of subsurface soils within the canal prism indicated that there were no PAH compounds exceeding the EPA Region III Risk-Based Concentrations for industrial exposure.
August – September 1996	NPS/E&E	Investigation	E&E installed five monitoring wells (NPS MW-1, 2, 3, 4, and 5) along the Canal on NPS property to determine if there has been any migration of residual petroleum compounds onto NPS property. Groundwater samples were collected from the five NPS wells and three CSXT wells (MW-6, 8, and 9) by NPS and analyzed for VOCs, SVOCs, and TPH. Dissolved phase total petroleum hydrocarbons (TPH) were detected in seven of the eight samples (all except NPS MW-4). PAH concentrations in groundwater were detected at two monitoring wells (NPS MW-4, and MW-6). These results were reported in the July 1997 Investigation Report (below).

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
July 1997	NPS/E&E	Investigation Report	On behalf of the NPS, E&E prepared and submitted an investigation report including the results of the surface and subsurface soil sampling conducted in August and September 1996 and monitoring well installation and groundwater sampling conducted during the same timeframe. Groundwater sampling results are discussed above. Surface soil analytical results indicated detectable PAH concentrations below screening criteria in all three samples and one TPH concentration above the MDE cleanup standard at NPS-SS-1 collected in the canal. The other TPH concentrations collected from surface soils were below MDE cleanup standards. Results of subsurface soil sampling (10 samples collected from 9 borings) indicated detectable PAH concentrations in 8 of the samples (all below screening criteria) and one TPH concentration (1,000 mg/kg) above the MDE cleanup standard detected in sample NPS-SB-4 collect from 8 to 10 ft below ground surface.
February 1998	CSXT/Eder	Investigation	LPH baildown tests were conducted at two CSXT wells (MW-1 and MW-6). The results of the baildown tests indicated that free product entered both wells at an extremely low rate. The water table rose several feet in November and no product was measured in either well, suggesting a strong association between water table fluctuations and the presence of free product.
1998	CSXT/Eder/ Gannett-Fleming	Remediation	CSXT/Gannett Fleming (purchased Eder) expanded LPH recovery to include MWs 1, 2, 4, and 6.
February 8, 1999	CSXT/Gannett-Fleming	Investigation	CSXT/Gannett Fleming submitted a Conceptual Investigation Plan (CIP) to evaluate any potential threat to surface water and to consider scenarios for adjusting the product recovery program, if necessary. The CIP also included a remedial alternatives analysis.
November 1999 – August 2000	CSXT/Gannett-Fleming	Investigation	Eleven soil borings and temporary piezometers (TP-1 through TP-11) were installed near the area with LPH to delineate the extent of LPH. Two soil samples are collected for geotechnical purposes.
December 2000	CSXT/Gannett-Fleming	Feasibility Report	CSXT/Gannett-Fleming submitted a Site Investigation Report including feasibility of remedial alternatives. The conclusion of the evaluation of remedial alternatives was that a collection trench recovery system located along the CSXT/NPS property line should be considered, carefully evaluating safety and constructability due to rail operations.

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
2001	NPS/E&E	Investigation	E&E installed eight additional wells NPS MW-10 through NPS MW-17.
June 2003	NPS/E&E	Investigation	E&E conducted groundwater sampling of the NPS wells for analysis of TPH-DRO, LPH is observed at NPS-MW-4.
October 2003 – March 2004	CSXT/Gannett-Fleming	Remediation	CSXT/Gannett-Fleming constructs a barrier/recovery trench to stop migration of petroleum to NPS property. The initial design was to approximately 525 ft long and 12-15 feet deep. However, the design was revised after it could not be constructed solely on CSXT property. The design was revised a second time when the trench, running from west to east, could not be extended to a point south of TP-4 because construction would subvert a utility pole. The trench as constructed includes five collector sumps, accumulated LPH is removed via a vacuum truck. CSXT/Gannett Fleming installed barrier/recovery trench (BRT) with 5 internal collection sumps (CS-1 through CS-5).
July 2004	CSXT/Gannett-Fleming	Remediation	CSXT/Gannett-Fleming initiated monthly enhanced fluid recovery (EFR) events at monitoring wells/collector sumps with LPH. CSXT/Gannett Fleming began enhanced fluid recovery (EFR) activities to reduce measurable liquid phase hydrocarbons (LPH) at MW-2, EW-3, EW-4, and EW-5 and BRT collections sumps. EFR activities expanded to include all wells with measurable LPH.
January 2005	CSXT/ARCADIS	Remediation	CSXT/ARCADIS continued with monthly EFR events, Approximately 32,466 gallons of total fluids (LPH and water) were removed from July 2004 through June 2009.
September 2006	CSXT/ARCADIS	Remediation	CSXT/ARCADIS installed an automated LPH recovery pump in MW-2. A total of 54 gallons of LPH were recovered from September 2006 through July 2008.
January 30, 2007	CSXT/ARCADIS	SCM and Work Plan Submittal	CSXT/ARCADIS submitted the *Site Conceptual Model and Supplemental Work Plan* including installation of additional monitoring wells and abandonment of temporary wells.
April 16, 2007	MDE	Correspondence	MDE approved the *Site Conceptual Model and Supplemental Work Plan* dated January 30, 2007.
June 2007	CSXT/ARCADIS	Investigation	CSXT/ARCADIS abandoned 6 temporary wells (TP-1, TP-3, TP-4, TP-5, TP-10, and TP-11) and installed 8 permanent groundwater monitoring wells (MW-4R and MW-21 through MW-27).

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
July 18, 2007	CSXT/MDE	Consent Order	MDE and CSXT signed the Consent Order.
July/August 2007	CSXT/ARCADIS	Investigation	CSXT/ARCADIS installed 24 direct-push borings (GP-20 and GP-26 through GP-49) with soil and groundwater sampling.
October 3, 2007	CSXT/ARCADIS	Work Plan Submittal	CSXT/ARCADIS submitted the *Work Plan for Monitoring Well Installation and Groundwater Sampling*.
November 9, 2007	MDE	Correspondence	MDE approved the *Work Plan for Monitoring Well Installation and Groundwater Sampling* dated October 3, 2007.
November 2007	CSXT/ARCADIS	Investigation	CSXT/ARCADIS installed 17 permanent groundwater monitoring wells (MW-20, MW-28 through MW-33, MW-35, MW-37, MW-38, MW-39, MW-41, MW-43, and MW-49 through MW-52).
February 8, 2008	CSXT/ARCADIS	SCM Submittal	CSXT/ARCADIS submitted the *Revised Site Conceptual Model (SCM)* (second version of the SCM).
March 12, 2008	CSXT/ARCADIS	Work Plan Submittal	CSXT/ARCADIS submitted the *Additional Site Characterization Work Plan*.
May 30, 2008	MDE	Correspondence	MDE approved the *Additional Site Characterization Work Plan* dated March 12, 2008.
June 2008	CSXT/ARCADIS	Investigation	CSXT/ARCADIS installed 24 direct-push borings (GP-53 through GP-76) with soil and groundwater sampling.
August 29, 2008	CSXT/ARCADIS	SCM and CAP Submittal	CSXT/ARCADIS submitted the *Revised SCM* (third version of the SCM) and the *Corrective Action Plan*, including the Dual-Phase Extraction (DPE) pilot test.
October 28, 2008	MDE	Correspondence	MDE approved the DPE pilot test portion of the *Corrective Action Plan*, with modifications.
December 16-18, 2008	CSXT/ARCADIS	Investigation	CSXT/ARCADIS installed 6 permanent groundwater monitoring wells (MW-53 to MW-58) as monitoring points for the DPE pilot test.
January 7 - 13, 2009	CSXT/ARCADIS	Investigation	CSXT/ARCADIS conducted DPE Pilot Test at MW-41 and EW-2.

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
March 2, 2009	CSXT/ARCADIS	CAP Addendum Submittal	CSXT/ARCADIS submitted the *Corrective Action Plan Addendum* which included the *Dual-Phase Extraction Pilot Test Results*.
May 27, 2009	MDE	Consent Order Milestone	MDE approved the *Corrective Action Plan Addendum* dated March 2, 2009, start of three year remedial goal specified in Consent Order.
July 14, 2009	CSXT/ARCADIS	Remediation	CSXT/ARCADIS implemented LPH removal activities in accordance with the *Corrective Action Plan Addendum* dated March 2, 2009. Activities included the installation of 3 LPH skimmer pumps and 5 passive LPH skimmers.
May 2010	CSXT/ARCADIS	Remediation	Approximately 267 gallons of LPH recovered since implementation of LPH removal activities in accordance with the *Corrective Action Plan Addendum* in July 2009.
June 4, 2010	CSXT/ARCADIS	Remediation	CSXT/ARCADIS submitted *Proposed LPH Recovery System Enhancements.*
July 8, 2010	MDE	Correspondence	MDE approved *Proposed LPH Recovery System Enhancements*, dated June 4, 2010.
September 2, 2010	CSXT/ARCADIS	Remediation	CSXT/ARCADIS installed 3 additional LPH skimmer pumps per the *Proposed LPH Recovery System Enhancements*, dated June 4, 2010.
December 15, 2011	CSXT/ARCADIS	Investigation	CSXT/ARCADIS submitted a Proposed Additional Well Installation Letter Work Plan which included the installation of 8 additional monitoring wells (MW-59 through MW-66).
January 25, 2012	MDE	Correspondence	MDE approved the Proposed Additional Well Installation Letter Work Plan and requested the submittal of a Well Installation Summary Report by March 31, 2012 and an Updated SCM by April 30, 2012. CSXT/ARCADIS requested that the documents be combined into one for submittal on April 30, 2012.
March 2012	CSXT/ARCADIS	Investigation	Seven of the 8 proposed monitoring wells (MW-59 through MW-65) were installed and developed. MW-66 could not be installed due to subsurface infrastructure obstructions (i.e. the former roundhouse foundation).
April 30, 2012	CSXT/ARCADIS	Remediation	Approximately 600 gallons of LPH have been recovered since implementation of LPH removal activities in accordance with the *Corrective Action Plan Addendum* in July 2009. A Revised Site Conceptual Model was submitted to MDE.

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
July 18, 2012	CSXT/ARCADIS	Investigation	The Supplemental Investigation Work Plan (SIWP) was submitted to the MDE. The SIWP outlined investigation activities to support soil characterization of the C&O Canal prism, dissolved phase hydrocarbon fate and transport evaluation (monitoring well development, groundwater sampling, and rising head testing), and further evaluation of liquid phase hydrocarbons (monitoring well installation, LPH characterization, short-term LPH stress testing, and a LPH mobility/recoverability analysis) at the Site.
August 17, 2012	NPS	Correspondence	NPS provided comments to CSXT regarding the SIWP.
September 6, 2012	MDE	Correspondence	MDE conditionally approved the SIWP, provided several modifications were made to the SIWP.
October 12, 2012	CSXT/ARCADIS	Investigation	The SIWP was revised based on the comments provided by the MDE and NPS, and was resubmitted.
November 2012	CSXT/ARCADIS	Investigation	Well redevelopment activities outlined in the SIWP were completed.
January 15, 2013	MDE	Correspondence	MDE conditionally approved the Revised SIWP, provided several modifications were made to the Revised SIWP.
January 2013	CSXT/ARCADIS	Investigation	Well installations, semi-annual and SIWP groundwater sampling, hydraulic testing, and LPH stress testing was completed as outlined in the SIWP.
February 1, 2013	CSXT/ARCADIS	Correspondence	SIWP progress update was provided to the MDE.
March 5, 2013	MDE/CSXT/ARCADIS	Correspondence	MDE correspondence was provided approving the progress schedule CSXT/ARCADIS submitted on February 1, 2013. CSXT/ARCADIS letter was submitted to MDE, documenting the presence of LPH in new well CSXT MW-70.
March 8, 2013	CSXT/ARCADIS	Investigation	A Well Installation Summary Report was submitted to the MDE, documenting well installation activities at four new wells, CSXT MW-67, CSXT MW-68, CSXT MW-69, and CSXT MW-70.
March 15, 2013	CSXT/ARCADIS	Remediation	Approximately 720 gallons of LPH have been recovered since implementation of LPH removal activities in accordance with the *Corrective Action Plan Addendum* in July 2009.
April 19, 2013	CSXT/ARCADIS	Remediation	The Supplemental Investigation Report and Revised Site Conceptual Model was submitted to MDE.
May, 2013	CSXT/ ARCADIS	Investigation	Site wide gauging and quarterly groundwater sampling of wells installed in 2012 and 2013 completed as outlined in the SIWP.
June 18, 2013	MDE/CSXT/ARCADIS	Correspondence	MDE correspondence was provided acknowledging ARCADIS development of a work plan to investigate the presence of LPH in CSXT MW-39 and CSXT MW-70.

Table 1
History of Environmental Activities Associated with the Site and the C&O Canal
C&O Canal/Brunswick Rail Yard
Brunswick, Maryland

Date/Year	Company/Agency	Action Type	Description
June 24, 2013	CSXT/ ARCADIS	Investigation	Well installed at NPS MW-18 to replace NPS MW-11.
July 25, 2013	CSXT/ ARCADIS	Investigation	Hydraulic testing (slug tests) conducted at NPS MW-18.
August 20, 2013	MDE/CSXT/ARCADIS	Investigation	A Supplemental LPH Delineation Work Plan aimed at delineating LPH occurrence near CSXT MW-39 and CSXT MW-70 was submitted to MDE.
August, 2013	CSXT/ ARCADIS	Investigation	Direct push C&O Canal Investigation installed 30 soil borings and 6 temporary piezometers in the C&O Canal, and collected soil and water samples as outlined in the SIWP.
September 12 and 16, 2013	CSXT/ ARCADIS	Investigation	LPH samples were collected from 5 on site monitoring wells for chemical fingerprinting by NewFields Companies, LLC. as part of the Canal Investigation.
September, 2013	CSXT/ ARCADIS	Investigation	Semi-annual and SIWP groundwater sampling was completed as outlined in the SIWP.
October 9, 2013	CSXT/ ARCADIS	Investigation	Closed circuit television investigation (CCTV) conducted for the underground pipe connecting the MTA fueling station spill pans with the oil-water separator.
October 25, 2013	MDE/CSXT/ARCADIS	Remediation	A revised Supplemental LPH Delineation Work Plan was submitted to MDE. The revised work plan included observations made during the CCTV investigation.

Table 2
Soil Boring Summary
CSXT Brunswick Yard, Brunswick, Maryland

Soil Boring ID	Installation Date	Easting Coordinates	Northing Coordinates	Ground Surface Elevation (ft amsl)	Total Depth (ft bgs)	Depth to clay canal liner (ft bgs)	Thickness of Clay Liner (feet)	Shallow sample interval - sediment (ft bgs)*	Deep sample interval - soil (ft bgs)*
SB01-01	8/19/2013	1134997.5	599429.2	229.7	10.8	2.8	0.9	1.0 - 1.5 (1.0 - 2.0)	9.0 - 9.5 (9.0 - 10.0)
SB01-02	8/19/2013	1135040.7	599407.7	230.1	10.1	1.3	3.5	1.0 - 1.5 (0.5 - 1.5)	5.0 - 5.5 (5.0 - 6.0)
SB01-03	8/19/2013	1135040.3	599427	230.1	9.9	1.65	3.05	1.0 - 1.5 (0.5 - 1.5)	5.0 - 5.5 (5.0 - 6.0)
SB01-04	8/19/2013	1135091	599398.3	229.5	9.5	1.1	2.1	0.5 - 1.0 (0.0 - 1.0)	5.0 - 5.5 (5.0 - 6.0)
SB01-05	8/19/2013	1135142.6	599365.6	229.8	9.6	2.5	2.7	2.0 - 2.5 (1.5 - 2.5)	8.5 - 9.0 (8.5 - 9.5)
SB01-06	8/19/2013	1135153.6	599384.3	229.9	8.4	2.3	2.9	1.5 - 2.0 (1.0 - 2.0)	6.5 - 7.0 (6.5 - 7.5)
SB01-07	8/20/2013	1135178.8	599352.6	229.6	8.8	1.6	3.9	1.0 - 1.5 (0.5 - 1.5)	9.5 - 10.0 (9.0 - 10.0)
SB01-08	8/20/2013	1135187.9	599367	229.8	10	2.5	3	2.0 - 2.5 (1.5 - 2.5)	9.0 - 9.5 (9.0 - 10.0)
SB01-09	8/20/2013	1135241.4	599332.9	229.5	11.9	0.9	1.4	0.5 - 1.0 (0.0 - 1.0)	4.0 - 4.5 (4.0 - 5.0)
SB01-10	8/20/2013	1135281.1	599323	229.4	11.85	0.85	1.45	0.5 - 1.0 (0.0 - 1.0)	4.0 - 4.5 (4.0 - 5.0)
SB02-01	8/20/2013	1135539.2	599194.2	229.5	11.7	1.1	2.9	0.5 - 1.0 (0.0 - 1.0)	7.5 - 8.0 (7.0 - 8.0)
SB02-02	8/20/2013	1135549.3	599210.4	230	11.8	1	2	0.5 - 1.0 (0.0 - 1.0)	4.5 - 5.0 (4.5 - 5.5)
SB02-03	8/20/2013	1135585.9	599189.3	230.6	10	ND	ND	0.5 - 1.0 (0.5 - 1.5)	5.5 - 6.0 (5.0 - 6.0)
SB02-04	8/20/2013	1135577.8	599171.8	229.8	9.8	ND	ND	0.5 - 1.0 (0.5 - 1.5)	7.0 - 7.5 (7.0 - 8.0)
SB02-05	8/20/2013	1135616.8	599165.2	230.4	10.2	ND	ND	1.0 - 1.5 (0.5 - 1.5)	7.0 - 7.5 (7.0 - 8.0)
SB02-06	8/20/2013	1135609.3	599152.9	230	10.1	ND	ND	1.0 - 1.5 (0.5 - 1.5)	6.5 - 7.0 (6.5 - 7.5)
SB02-07	8/21/2013	1135801.5	599095.1	240.1	9.6	1.4	0.3	1.0 - 1.5 (0.5 - 1.5)	5.5 - 6.0 (5.5 - 6.5)
SB02-08	8/21/2013	1135801.5	599095.1	240.1	11	1.5	1.5	1.0 - 1.5 (0.5 - 1.5)	7.0 - 7.5 (7.0 - 8.0)
SB02-09	8/21/2013	1135801.5	599095.1	240.1	10.1	1.75	0.35	1.0 - 1.5 (0.5 - 1.5)	4.5 - 5.0 (4.5 - 5.5)
SB02-10	8/21/2013	1135659.1	599122.2	229.8	10.1	ND	ND	1.0 - 1.5 (0.5 - 1.5)	5.0 - 5.5 (5.0 - 6.0)
SB03-01	8/21/2013	1136014.7	598943.3	229.7	10	1.25	0.65	1.0 - 1.5 (0.5 - 1.5)	5.5 - 6.0 (5.0 - 6.0)
SB03-02	8/21/2013	1136003.9	598928.8	229.4	10.2	0.4	0.2	0.5 - 1.0 (0.0 - 1.0)	3.0 - 3.5 (3.0 - 4.0)
SB03-03	8/21/2013	1136032.3	598931.7	229.9	7.6	1.4	0.2	1.0 - 1.5 (0.5 - 1.5)	3.5 - 4.0 (3.0 - 4.0)
SB03-04	8/21/2013	1136023.5	598917.2	229.6	8.75	1.3	0.5	0.5 - 1.0 (0.5 - 1.5)	4.0 - 4.5 (4.0 - 5.0)
SB03-05	8/22/2013	1135801.5	599095.1	240.1	9.15	1.1	0.9	0.5 - 1.0 (0.0 - 1.0)	4.0 - 4.5 (3.5 - 4.5)
SB03-06	8/22/2013	1135801.5	599095.1	240.1	7.1	0.25	0.5	0.5 - 1.0 (0.0 - 1.0)	3.0 - 3.5 (2.5 - 3.5)
SB03-07	8/22/2013	1135801.5	599095.1	240.1	8.7	ND	ND	1.5 - 2.0 (1.5 - 2.5)	4.5 - 5.0 (4.5 - 5.5)
SB03-08	8/22/2013	1136073.1	598893.6	230.6	8.3	2.15	0.55	1.5 - 2.0 (1.0 - 2.0)	3.0 - 3.5 (3.0 - 4.0)
SB03-09	8/22/2013	1135801.5	599095.1	240.1	9.8	2.3	1	1.5 - 2.0 (1.0 - 2.0)	3.5 - 4.0 (3.5 - 4.5)
SB03-10	8/22/2013	1135801.5	599095.1	240.1	10.15	ND	ND	0.5 - 1.0 (0.5 - 1.5)	5.5 - 6.0 (5.5 - 6.5)

Notes:
ND = No clay liner detected ft amsl = feet above mean sea level ft bgs = feet below ground surface
* Sampling interval was expanded to a one-foot interval of split-spoon samples to allow collection of larger volume for SVOC and TPH-DRO analysis.
Coordinate data in MD SP NAD 83/91, NAVD88, ft

Table 3
Temporary Piezometer Summary and Groundwater Elevations
CSXT Brunswick Yard, Brunswick, Maryland

Piezometer / Monitoring Well ID	Installation Date	Abandonment Date	Easting Coordinates	Northing Coordinates	Ground Surface Elevation (ft amsl)	Top of casing Elevation (ft amsl)	Top of Screen Elevation (ft amsl)	Bottom of Screen Elevation (ft amsl)	Date of Water Level Measurement	Groundwater Elevation (ft amsl)	Depth to water (ft bTOC)
Canal Investigation Temporary Piezometers											
PZ01-04	8/19/2013	8/20/2013	1135091	599398.3	229.50	229.85	224.85	219.85	8/19/2013	225.59	3.91
PZ01-09	8/20/2013	8/21/2013	1135241.4	599332.9	229.50	229.70	224.70	219.70	8/20/2013	228.10	1.40
PZ02-04	8/20/2013	8/23/2013	1135577.8	599171.8	229.80	230.70	225.70	220.70	8/21/2013	227.51	2.29
PZ02-08	8/21/2013	8/23/2013	1135633.4	599141.6	229.90	230.20	225.20	220.20	8/21/2013	227.39	2.51
PZ03-04	8/21/2013	8/23/2013	1136023.5	598917.2	229.60	229.60	224.60	219.60	8/21/2013	228.53	1.07
PZ03-08	8/22/2013	8/23/2013	1136073.1	598893.6	230.60	230.90	225.90	220.90	8/22/2013	228.26	2.34
Permanent Site Monitoring Wells											
NPS MW-1	8/29/1996	NA	1135189.62	599332.935	235.27	234.94	224.94	214.94	8/21/2013	227.73	7.54
NPS MW-10	11/27/2001	NA	1135580.2	599215.1075	235.72	237.73	231.93	216.93	8/21/2013	228.61	7.11
NPS MW-13	11/28/2001	NA	1135662.04	599097.0312	235.26	234.72	220.42	210.42	8/21/2013	222.18	13.08
NPS MW-14	11/29/2001	NA	1136003.6	598904.9064	235.18	234.74	227.44	207.44	8/21/2013	225.01	10.17
NPS MW-15	11/30/2001	NA	1136110.04	598850.4938	234.83	234.38	226.58	211.58	8/21/2013	225.03	9.80
NPS MW-17	12/3/2001	NA	1136002.86	598994.5053	240.07	242.71	226.91	211.91	8/21/2013	223.78	16.29
NPS MW-18	6/24/2013	NA	1135665.9	599155.1	234.62	234.15	227.453	219.453	8/21/2013	231.57	3.05
CSXT MW-20	9/27/2007	NA	1135015.9	599454.6	236.88	236.27	233.77	213.77	8/21/2013	228.04	8.84
CSXT MW-6R	3/29/2004	NA	1135134.63	599418.6105	233.63	233.63	228.13	218.13	8/21/2013	226.73	6.90
CSXT MW-8	8/31/1995	NA	1135245.5	599282	234.81	235.51	229.06	209.06	8/21/2013	220.62	14.19
CSXT MW-9	8/31/1995	NA	1135100.1	599338.7	234.97	237.54	229.25	209.25	8/21/2013	221.24	13.73

Notes:
ft amsl = feet above mean sea level
ft bTOC = feet below top of casing
NA = not abandoned
Coordinate data in MD SP NAD 83/91, NAVD88, ft

Table 4
Analytical Results - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Location ID		SB01-01	SB01-01	SB01-02	SB01-02	SB01-03	SB01-03	SB01-04	SB01-04	SB01-05	SB01-05
Sample Date		8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013	8/19/2013
Sample Interval (ft bgs)		1 - 1.5	9 - 9.5	1 - 1.5	5 - 5.5	1 - 1.5	5 - 5.5	0.5 - 1	5 - 5.5	2 - 2.5	8.5 - 9
Secondary Sample Interval (ft bgs)[1]		1 - 2	9 - 10	0 .5 - 1.5	5 - 6	0.5 - 1.5	5 - 6	0 - 1	5 - 6	1.5 - 2.5	8.5 - 9.5
Constituent[2]	**Units**										
VOCs - USEPA Method SW8260B											
1,2-Dichlorobenzene	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
2-Butanone	µg/kg	< 30 U	< 20 U	< 20 U	< 57 U	< 28 U	< 23 U	< 41 U	< 2700 U	< 22 U	**32**
Acetone	µg/kg	< 30 U	< 20 U	< 20 U	< 57 U	< 28 U	< 23 U	< 41 U	< 2700 U	< 22 U	**150**
Carbon Disulfide	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
CFC-11	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
Ethylbenzene	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
m-Dichlorobenzene	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
Methyl tert-butyl ether	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
Methylcyclohexane	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
Toluene	µg/kg	< 5.9 U	< 4.1 U	< 3.9 U	< 11 U	< 5.6 U	< 4.7 U	< 8.1 U	< 540 U	< 4.5 U	< 5.5 U
Xylenes, Total	µg/kg	< 12 U	< 8.1 U	< 7.9 U	< 23 U	< 11 U	< 9.4 U	< 16 U	< 1100 U	< 9 U	< 11 U
SVOCs - USEPA Method SW8270D											
1,2-Benz-phenanthracene	µg/kg	**38 J**	< 400 U	**78 J**	< 430 U	**34 J**	< 400 U	**96 J**	< 430 U	< 380 U	< 430 U
2,6-Dinitrotoluene	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
2-Methyl naphthalene	µg/kg	**140 J**	< 400 U	**93 J**	< 430 U	**86 J**	< 400 U	**180 J**	**82 J**	< 380 U	< 430 U
Acenaphthene	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	**150 J**	< 380 U	< 430 U
Acenaphthylene	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Acetophenone	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Anthracene	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	**110 J**	< 380 U	< 430 U
Benzaldehyde	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	**87 J**	< 430 U	< 380 U	< 430 U
Benzo(a)anthracene	µg/kg	< 440 U	< 400 U	**47 J**	< 430 U	< 390 U	< 400 U	**55 J**	< 430 U	< 380 U	< 430 U
Benzo(a)pyrene	µg/kg	< 440 U	< 400 U	**79 J**	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Benzo(b)fluoranthene	µg/kg	< 440 U	< 400 U	**130 J**	< 430 U	< 390 U	< 400 U	**89 J**	< 430 U	< 380 U	< 430 U
Benzo(g,h,i)perylene	µg/kg	< 440 U	< 400 U	**94 J**	< 430 U	**86 J**	< 400 U	**34 J**	< 430 U	< 380 U	< 430 U
Benzo(k)fluoranthene	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
bis(2-Ethylhexyl)phthalate	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	**65 J**	< 400 U	< 410 U	**50 J**	< 380 U	< 430 U
Caprolactam	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Carbazole	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Dibenzo(a,h)anthracene	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Dibenzofuran	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	**46 J**	< 400 U	**57 J**	**45 J**	< 380 U	< 430 U
Di-n-octyl phthalate	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Fluoranthene	µg/kg	< 440 U	< 400 U	**58 J**	< 430 U	**66 J**	< 400 U	**110 J**	< 430 U	< 380 U	< 430 U
Fluorene	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	**510**	< 380 U	< 430 U
Indeno(1,2,3-cd)pyrene	µg/kg	< 440 U	< 400 U	**74 J**	< 430 U	**54 J**	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Naphthalene	µg/kg	**100 J**	< 400 U	**72 J**	< 430 U	**170 J**	< 400 U	**130 J**	< 430 U	< 380 U	< 430 U
N-Nitrosodiphenylamine	µg/kg	< 440 U	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	**500**	< 380 U	< 430 U
Phenanthrene	µg/kg	**81 J**	< 400 U	**64 J**	< 430 U	**75 J**	< 400 U	**150 J**	**79 J**	< 380 U	< 430 U
Phenol	µg/kg	**53 J**	< 400 U	< 380 U	< 430 U	< 390 U	< 400 U	< 410 U	< 430 U	< 380 U	< 430 U
Pyrene	µg/kg	< 440 U	< 400 U	**42 J**	< 430 U	**35 J**	< 400 U	**76 J**	< 430 U	< 380 U	< 430 U
TPH - USEPA Method SW8015C											
Diesel Range Organics [C10-C28]	mg/kg	**4.6 J**	**2.7 J**	**37**	**1.8 JB**	**21**	**1.8 JB**	**34**	**47**	**16**	**25**
Gasoline Range Organics (GRO)-C6-C10	mg/kg	< 0.33 U	< .32 U	**0.38 J**	**0.29**	**0.26 J**	< 0.24 U	**1.4**	**40**	**0.25**	**0.5**
ORO C24-C40	mg/kg	**7.6 B**	**3.40 JB**	**50 B**	**2 JB**	**43 B**	**2.4 JB**	**5.9 B**	**7.3 B**	**26 B**	**43 B**

Table 4
Analytical Results - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Location ID		SB01-06	SB01-06	SB01-07	SB01-07	SB01-08	SB01-08	SB01-09	SB01-09	SB01-10	SB01-10
Sample Date		8/19/2013	8/19/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013
Sample Interval (ft bgs)		1.5 - 2	6.5 - 7	1 - 1.5	9.5 - 10	2 - 2.5	9 - 9.5	0.5 - 1	4 - 4.5	0.5 - 1	4 - 4.5
Secondary Sample Interval (ft bgs)[1]		1 - 2	6.5 - 7.5	0.5 - 1.5	9 - 10	1.5 - 2.5	9 - 10	0 - 1	4 - 5	0 - 1	4 - 5
Constituent[2]	**Units**										
VOCs - USEPA Method SW8260B											
1,2-Dichlorobenzene	µg/kg	< 5.2 U	< 5.3 U	< 9 U	< 5.7 U	< 6.7 U	< 3.6 U	< 5.4 U	< 5.3 U	< 5.2 U	< 4.8 U
2-Butanone	µg/kg	< 26 U	< 26 U	< 45 U	**23 J**	< 34 U	< 18 U	< 27 U	< 26 U	< 26 U	< 24 U
Acetone	µg/kg	< 26 U	**65**	< 45 U	**110**	< 34 U	**22**	< 27 U	< 26 U	< 26 U	< 24 U
Carbon Disulfide	µg/kg	< 5.2 U	< 5.3 U	< 9 U	< 5.7 U	< 6.7 U	< 3.6 U	< 5.4 U	< 5.3 U	< 5.2 U	< 4.8 U
CFC-11	µg/kg	< 5.2 U	< 5.3 U	**2.4 J**	< 5.7 U	< 6.7 U	< 3.6 U	< 5.4 U	< 5.3 U	< 5.2 U	< 4.8 U
Ethylbenzene	µg/kg	< 5.2 U	< 5.3 U	< 9 U	< 5.7 U	< 6.7 U	< 3.6 U	< 5.4 U	< 5.3 U	< 5.2 U	< 4.8 U
m-Dichlorobenzene	µg/kg	< 5.2 U	< 5.3 U	< 9 U	< 5.7 U	< 6.7 U	< 3.6 U	< 5.4 U	< 5.3 U	< 5.2 U	< 4.8 U
Methyl tert-butyl ether	µg/kg	< 5.2 U	< 5.3 U	< 9 U	**2.1 J**	< 6.7 U	< 3.6 U	< 5.4 U	**1.7 J**	< 5.2 U	< 4.8 U
Methylcyclohexane	µg/kg	< 5.2 U	< 5.3 U	< 9 U	**18**	< 6.7 U	< 3.6 U	< 5.4 U	< 5.3 U	< 5.2 U	< 4.8 U
Toluene	µg/kg	< 5.2 U	< 5.3 U	< 9 U	< 5.7 U	< 6.7 U	< 3.6 U	< 5.4 U	< 5.3 U	< 5.2 U	< 4.8 U
Xylenes, Total	µg/kg	< 10 U	< 11 U	< 18 U	< 11 U	< 13 U	< 7.2 U	< 11 U	< 11 U	< 10 U	< 9.6 U
SVOCs - USEPA Method SW8270D											
1,2-Benz-phenanthracene	µg/kg	**57 J**	< 480 U	**440 J**	< 440 U	< 420 U	< 410 U	**84 J**	< 390 U	**40 J**	< 450 U
2,6-Dinitrotoluene	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
2-Methyl naphthalene	µg/kg	**55 J**	< 480 U	**570**	< 440 U	< 420 U	< 410 U	**310 J**	< 390 U	**54 J**	< 450 U
Acenaphthene	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Acenaphthylene	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Acetophenone	µg/kg	< 390 U	< 480 U	**74 J**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Anthracene	µg/kg	< 390 U	< 480 U	**71 J**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Benzaldehyde	µg/kg	< 390 U	< 480 U	**100 J**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Benzo(a)anthracene	µg/kg	**34 J**	< 480 U	**280 J**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Benzo(a)pyrene	µg/kg	< 390 U	< 480 U	**280 J**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Benzo(b)fluoranthene	µg/kg	**54 J**	< 480 U	**500**	< 440 U	< 420 U	< 410 U	**75 J**	< 390 U	< 420 U	< 450 U
Benzo(g,h,i)perylene	µg/kg	< 390 U	< 480 U	**320 JB**	< 440 U	< 420 U	< 410 U	**34 JB**	< 390 U	< 420 U	< 450 U
Benzo(k)fluoranthene	µg/kg	< 390 U	< 480 U	**180 J**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
bis(2-Ethylhexyl)phthalate	µg/kg	< 390 U	**43 J**	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Caprolactam	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Carbazole	µg/kg	< 390 U	< 480 U	**45 J**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Dibenzo(a,h)anthracene	µg/kg	< 390 U	< 480 U	**240 JB**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Dibenzofuran	µg/kg	< 390 U	< 480 U	**200 J**	< 440 U	< 420 U	< 410 U	**88 J**	< 390 U	< 420 U	< 450 U
Di-n-octyl phthalate	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Fluoranthene	µg/kg	**76 J**	< 480 U	**750**	< 440 U	< 420 U	< 410 U	**110 J**	< 390 U	**49 J**	< 450 U
Fluorene	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Indeno(1,2,3-cd)pyrene	µg/kg	< 390 U	< 480 U	**320 JB**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Naphthalene	µg/kg	< 390 U	< 480 U	**490**	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	**38 J**	< 450 U
N-Nitrosodiphenylamine	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Phenanthrene	µg/kg	**71 J**	< 480 U	**750**	< 440 U	< 420 U	< 410 U	**180 J**	< 390 U	**50 J**	< 450 U
Phenol	µg/kg	< 390 U	< 480 U	< 450 U	< 440 U	< 420 U	< 410 U	< 460 U	< 390 U	< 420 U	< 450 U
Pyrene	µg/kg	**44 J**	< 480 U	**450**	< 440 U	< 420 U	< 410 U	**69 J**	< 390 U	< 420 U	< 450 U
TPH - USEPA Method SW8015C											
Diesel Range Organics [C10-C28]	mg/kg	**5.9**	**2.5 J**	**38**	**1.8 J**	**9.7**	**1.8 J**	< 6.8 U	< 5.9 U	< 6.3 U	< 6.8 U
Gasoline Range Organics (GRO)-C6-C10	mg/kg	< 0.29 U	**0.29 J**	**28**	**4.5**	**0.86**	**0.32**	**0.26 J**	< 0.22 U	**0.31 J**	< 0.27 U
ORO C24-C40	mg/kg	**7.3 B**	**6.4 JB**	**25 B**	**4.4 JB**	**9.7 B**	**4.8 JB**	**4.4 JB**	**3.5 JB**	**3.4 JB**	**2.3 JB**

Table 4
Analytical Results - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Location ID		SB02-01	SB02-01	SB02-02	SB02-02	SB02-03	SB02-03	SB02-04	SB02-04	SB02-05	SB02-05
Sample Date		8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013	8/20/2013
Sample Interval (ft bgs)		0.5 - 1	7.5 - 8	0.5 - 1	4.5 - 5	0.5 - 1	5.5 - 6	0.5 - 1	7 - 7.5	1 - 1.5	7 - 7.5
Secondary Sample Interval (ft bgs)[1]		0 - 1	7 - 8	0 - 1	4.5 - 5.5	0 .5 - 1.5	5 - 6	0.5 - 1.5	7 - 8	0.5 - 1.5	7 - 8
Constituent[2]	**Units**										
VOCs - USEPA Method SW8260B											
1,2-Dichlorobenzene	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	< 6.5 U	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
2-Butanone	µg/kg	< 38 U	< 21 U	< 26 U	< 22 U	< 33 U	< 22 U	< 42 U	< 24 U	< 38 U	< 22 U
Acetone	µg/kg	< 38 U	< 21 U	< 26 U	< 22 U	< 33 U	< 22 U	**14 J**	< 24 U	< 38 U	< 22 U
Carbon Disulfide	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	< 6.5 U	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
CFC-11	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	**3.4 J**	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
Ethylbenzene	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	< 6.5 U	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
m-Dichlorobenzene	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	< 6.5 U	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
Methyl tert-butyl ether	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	< 6.5 U	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
Methylcyclohexane	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	< 6.5 U	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
Toluene	µg/kg	< 7.6 U	< 4.2 U	< 5.2 U	< 4.5 U	< 6.5 U	< 4.4 U	< 8.4 U	< 4.8 U	< 7.6 U	< 4.3 U
Xylenes, Total	µg/kg	< 15 U	< 8.5 U	< 10 U	< 9 U	< 13 U	< 8.9 U	< 17 U	< 9.7 U	< 15 U	< 8.6 U
SVOCs - USEPA Method SW8270D											
1,2-Benz-phenanthracene	µg/kg	**37 J**	< 400 U	**47 J**	< 400 U	< 410 U	< 400 U	**45 J**	< 420 U	**390 J**	< 390 U
2,6-Dinitrotoluene	µg/kg	< 550 U	< 400 U	< 420 U	**720**	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
2-Methyl naphthalene	µg/kg	**78 J**	< 400 U	**130 J**	< 400 U	< 410 U	< 400 U	**76 J**	< 420 U	**1400**	< 390 U
Acenaphthene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Acenaphthylene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Acetophenone	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Anthracene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**92 J**	< 390 U
Benzaldehyde	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**220 J**	< 390 U
Benzo(a)anthracene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Benzo(a)pyrene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**130 J**	< 390 U
Benzo(b)fluoranthene	µg/kg	< 550 U	< 400 U	**52 J**	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**380 J**	< 390 U
Benzo(g,h,i)perylene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**110 JB**	< 390 U
Benzo(k)fluoranthene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**120 J**	< 390 U
bis(2-Ethylhexyl)phthalate	µg/kg	< 550 U	< 400 U	< 420 U	**45 J**	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Caprolactam	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Carbazole	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**57 J**	< 390 U
Dibenzo(a,h)anthracene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Dibenzofuran	µg/kg	< 550 U	< 400 U	**50 J**	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**420 J**	< 390 U
Di-n-octyl phthalate	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Fluoranthene	µg/kg	< 550 U	< 400 U	**70 J**	< 400 U	< 410 U	< 400 U	**59 J**	< 420 U	**540 J**	< 390 U
Fluorene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Indeno(1,2,3-cd)pyrene	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**120 JB**	< 390 U
Naphthalene	µg/kg	< 550 U	< 400 U	**110 J**	< 400 U	< 410 U	< 400 U	**81 J**	< 420 U	**1100**	< 390 U
N-Nitrosodiphenylamine	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Phenanthrene	µg/kg	**79 J**	< 400 U	**110 J**	< 400 U	< 410 U	< 400 U	**85 J**	< 420 U	**920**	< 390 U
Phenol	µg/kg	< 550 U	< 400 U	< 420 U	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	< 550 U	< 390 U
Pyrene	µg/kg	< 550 U	< 400 U	**51 J**	< 400 U	< 410 U	< 400 U	< 560 U	< 420 U	**330 J**	< 390 U
TPH - USEPA Method SW8015C											
Diesel Range Organics [C10-C28]	mg/kg	< 8.1 U	< 6 U	**4.1 J**	< 6 U	< 6.1 U	< 6.1 U	**3.9 JB**	< 6.2 U	< 8.4 U	< 5.9 U
Gasoline Range Organics (GRO)-C6-C10	mg/kg	**3.4**	< 0.21 U	**0.24 J**	< 0.24 U	**0.58**	< 0.23 U	**7.6**	**0.34**	**1.5**	< 0.27 U
ORO C24-C40	mg/kg	**2.8 JB**	**2.7 JB**	**7.9 B**	**2.5 JB**	**2 JB**	**3.3 JB**	**6.5 JB**	**3.5 JB**	**7.2 JB**	**3 JB**

Table 4
Analytical Results - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Location ID		SB02-06	SB02-06	SB02-07	SB02-07	SB02-08	SB02-08	SB02-09	SB02-09	SB02-10	SB02-10
Sample Date		8/20/2013	8/20/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013
Sample Interval (ft bgs)		1 - 1.5	6.5 - 7	1 - 1.5	5.5 - 6	1 - 1.5	7 - 7.5	1 - 1.5	4.5 - 5	1 - 1.5	5 - 5.5
Secondary Sample Interval (ft bgs)[1]		0.5 - 1.5	6.5 - 7.5	0.5 - 1.5	5.5 - 6.5	0.5 - 1.5	7 - 8	0.5 - 1.5	4.5 - 5.5	0.5 - 1.5	5 - 6
Constituent[2]	**Units**										
VOCs - USEPA Method SW8260B											
1,2-Dichlorobenzene	µg/kg	< 5.5 U	< 4.7 U	< 9.3 U	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
2-Butanone	µg/kg	< 27 U	< 24 U	< 46 U	< 22 U	< 28 U	< 22 U	< 49 U	< 20 U	< 34 U	< 24 U
Acetone	µg/kg	< 27 U	< 24 U	< 46 U	**24 ***	< 28 U	< 22 U	< 49 U	**8.1 J***	< 34 U	< 24 U
Carbon Disulfide	µg/kg	< 5.5 U	< 4.7 U	< 9.3 U	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
CFC-11	µg/kg	< 5.5 U	< 4.7 U	**6.6 J**	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
Ethylbenzene	µg/kg	< 5.5 U	< 4.7 U	< 9.3 U	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
m-Dichlorobenzene	µg/kg	< 5.5 U	< 4.7 U	< 9.3 U	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
Methyl tert-butyl ether	µg/kg	< 5.5 U	< 4.7 U	< 9.3 U	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
Methylcyclohexane	µg/kg	< 5.5 U	< 4.7 U	< 9.3 U	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
Toluene	µg/kg	< 5.5 U	< 4.7 U	< 9.3 U	< 4.4 U	< 5.6 U	< 4.4 U	< 9.8 U	< 3.9 U	< 6.8 U	< 4.8 U
Xylenes, Total	µg/kg	< 11 U	< 9.4 U	< 19 U	< 8.9 U	< 11 U	< 8.8 U	< 20 U	< 7.8 U	< 14 U	< 9.6 U
SVOCs - USEPA Method SW8270D											
1,2-Benz-phenanthracene	µg/kg	< 530 U	< 400 U	**120 J**	< 400 U	**260 J**	< 390 U	**560 J**	< 390 U	< 580 U	< 400 U
2,6-Dinitrotoluene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
2-Methyl naphthalene	µg/kg	< 530 U	< 400 U	**590 J**	< 400 U	**670**	< 390 U	**1800**	< 390 U	**78 J**	< 400 U
Acenaphthene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
Acenaphthylene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	**70 J**	< 390 U	< 580 U	< 400 U
Acetophenone	µg/kg	< 530 U	< 400 U	**80 J**	< 400 U	**71 J**	< 390 U	**250 J**	< 390 U	< 580 U	< 400 U
Anthracene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	**93 J**	< 390 U	**130 J**	< 390 U	< 580 U	< 400 U
Benzaldehyde	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
Benzo(a)anthracene	µg/kg	< 530 U	< 400 U	**91 J**	< 400 U	**130 J**	< 390 U	**280 J**	< 390 U	< 580 U	< 400 U
Benzo(a)pyrene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	**230 J**	< 390 U	< 580 U	< 400 U
Benzo(b)fluoranthene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	**330 J**	< 390 U	**560 J**	< 390 U	< 580 U	< 400 U
Benzo(g,h,i)perylene	µg/kg	< 530 U	< 400 U	**120 J**	< 400 U	**160 J**	< 390 U	**190 J**	< 390 U	< 580 U	< 400 U
Benzo(k)fluoranthene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
bis(2-Ethylhexyl)phthalate	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
Caprolactam	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	**94 J**	< 390 U	**230 J**	< 390 U	< 580 U	< 400 U
Carbazole	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	**98 J**	< 390 U	< 580 U	< 400 U
Dibenzo(a,h)anthracene	µg/kg	< 530 U	< 400 U	**83 J**	< 400 U	**67 J**	< 390 U	**78 J**	< 390 U	< 580 U	< 400 U
Dibenzofuran	µg/kg	< 530 U	< 400 U	**160 J**	< 400 U	**310 J**	< 390 U	**550 J**	< 390 U	< 580 U	< 400 U
Di-n-octyl phthalate	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
Fluoranthene	µg/kg	< 530 U	< 400 U	**290 J**	< 400 U	**470**	**91 J**	**710**	< 390 U	**140 J**	< 400 U
Fluorene	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	**62 J**	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
Indeno(1,2,3-cd)pyrene	µg/kg	< 530 U	< 400 U	**140 J**	< 400 U	**210 J**	< 390 U	**200 J**	< 390 U	< 580 U	< 400 U
Naphthalene	µg/kg	< 530 U	< 400 U	**530 J**	< 400 U	**640**	< 390 U	**1400**	< 390 U	**69 J**	< 400 U
N-Nitrosodiphenylamine	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
Phenanthrene	µg/kg	< 530 U	< 400 U	**310 J**	< 400 U	**650**	< 390 U	**1100**	< 390 U	< 580 U	< 400 U
Phenol	µg/kg	< 530 U	< 400 U	< 620 U	< 400 U	< 450 U	< 390 U	< 620 U	< 390 U	< 580 U	< 400 U
Pyrene	µg/kg	< 530 U	< 400 U	**98 J**	< 400 U	**200 J**	< 390 U	**360 J**	< 390 U	< 580 U	< 400 U
TPH - USEPA Method SW8015C											
Diesel Range Organics [C10-C28]	mg/kg	**2.3 JB**	< 5.9 U	**6.7 J**	**3.1 J**	**5.5 J**	**4.6 J**	**4.6 J**	**5.2 J**	**5.4 J**	**3.3 J**
Gasoline Range Organics (GRO)-C6-C10	mg/kg	**0.52**	< 0.59 U	**0.67**	**0.8**	**0.54**	**0.2 J**	**5.6**	< 0.21 U	**0.66**	< 0.24 U
ORO C24-C40	mg/kg	**4.6 JB**	**4.7 JB**	**5.1 J**	< 5.9 U	**6.8 J**	**3 J**	< 9.5 U	**4.8 J**	< 8.7 U	< 6.1 U

Table 4
Analytical Results - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Location ID		SB03-01	SB03-01	SB03-02	SB03-02	SB03-03	SB03-03	SB03-04	SB03-04	SB03-05	SB03-05
Sample Date		8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/21/2013	8/22/2013	8/22/2013
Sample Interval (ft bgs)		1 - 1.5	5.5 - 6	0.5 - 1	3 - 3.5	1 - 1.5	3.5 - 4	0.5 - 1	4 - 4.5	0.5 - 1	4 - 4.5
Secondary Sample Interval (ft bgs)[1]		0.5 - 1.5	5 - 6	0 - 1	3 - 4	0.5 - 1.5	3 - 4	0.5 - 1.5	4 - 5	0 - 1	3.5 - 4.5
Constituent[2]	**Units**										
VOCs - USEPA Method SW8260B											
1,2-Dichlorobenzene	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	< 4.7 U	< 6.9 U	< 4.2 U	< 9.1 U	< 4.8 U	< 8.8 U	< 4.5 U
2-Butanone	µg/kg	< 27 U	< 23 U	< 29 U	< 23 U	< 35 U	< 21 U	< 45 U	< 24 U	< 44 U	**4.5 J**
Acetone	µg/kg	**23 J**	**23**	**22 J**	**7.6 J**	**29 J**	**12 J**	**54**	**17 J**	**16 J**	**22**
Carbon Disulfide	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	< 4.7 U	< 6.9 U	< 4.2 U	< 9.1 U	< 4.8 U	< 8.8 U	**1.1 J**
CFC-11	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	**1.3 J**	< 6.9 U	**2.4 J**	**4.7 J**	< 4.8 U	**9.6**	< 4.5 U
Ethylbenzene	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	< 4.7 U	< 6.9 U	< 4.2 U	< 9.1 U	< 4.8 U	< 8.8 U	< 4.5 U
m-Dichlorobenzene	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	< 4.7 U	< 6.9 U	< 4.2 U	< 9.1 U	< 4.8 U	< 8.8 U	< 4.5 U
Methyl tert-butyl ether	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	< 4.7 U	< 6.9 U	< 4.2 U	< 9.1 U	< 4.8 U	< 8.8 U	< 4.5 U
Methylcyclohexane	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	< 4.7 U	< 6.9 U	< 4.2 U	< 9.1 U	< 4.8 U	< 8.8 U	< 4.5 U
Toluene	µg/kg	< 5.5 U	< 4.7 U	< 5.7 U	< 4.7 U	< 6.9 U	< 4.2 U	< 9.1 U	< 4.8 U	< 8.8 U	< 4.5 U
Xylenes, Total	µg/kg	< 11 U	< 9.4 U	< 11 U	< 9.3 U	< 14 U	< 8.4 U	< 18 U	< 9.5 U	< 18 U	< 9 U
SVOCs - USEPA Method SW8270D											
1,2-Benz-phenanthracene	µg/kg	**83 J**	< 410 U	**70 J**	< 430 U	**41 J**	< 400 U	**150 J**	< 400 U	< 410 U	< 400 U
2,6-Dinitrotoluene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
2-Methyl naphthalene	µg/kg	**970**	< 410 U	**270 J**	**70 J**	**960**	< 400 U	**1900**	< 400 U	**170 J**	< 400 U
Acenaphthene	µg/kg	< 440 U	< 410 U	< 480 U	**120 J**	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	**290 J**
Acenaphthylene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Acetophenone	µg/kg	**62 J**	< 410 U	< 480 U	< 430 U	**53 J**	< 400 U	**110 J**	< 400 U	< 410 U	< 400 U
Anthracene	µg/kg	< 440 U	< 410 U	**49 J**	< 430 U	< 480 U	< 400 U	**72 J**	< 400 U	< 410 U	< 400 U
Benzaldehyde	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	**190 J**	< 400 U	< 410 U	< 400 U
Benzo(a)anthracene	µg/kg	**43 J**	< 410 U	**50 J**	< 430 U	< 480 U	< 400 U	**65 J**	< 400 U	< 410 U	< 400 U
Benzo(a)pyrene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Benzo(b)fluoranthene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	**160 J**	< 400 U	< 410 U	< 400 U
Benzo(g,h,i)perylene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	**83 J**	< 400 U	< 410 U	< 400 U
Benzo(k)fluoranthene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
bis(2-Ethylhexyl)phthalate	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Caprolactam	µg/kg	< 440 U	< 410 U	< 480 U	**440**	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Carbazole	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Dibenzo(a,h)anthracene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Dibenzofuran	µg/kg	**160 J**	< 410 U	**67 J**	< 430 U	**100 J**	< 400 U	**250 J**	< 400 U	< 410 U	< 400 U
Di-n-octyl phthalate	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Fluoranthene	µg/kg	**220 J**	< 410 U	**160 J**	**120 J**	**150 J**	< 400 U	**310 J**	**95 J**	< 410 U	< 400 U
Fluorene	µg/kg	< 440 U	< 410 U	< 480 U	**260 J**	< 480 U	< 400 U	**90 J**	< 400 U	< 410 U	**830**
Indeno(1,2,3-cd)pyrene	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	**77 J**	< 400 U	< 410 U	< 400 U
Naphthalene	µg/kg	**470**	< 410 U	**420 J**	**120 J**	**560**	< 400 U	**900**	< 400 U	**100 J**	< 400 U
N-Nitrosodiphenylamine	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Phenanthrene	µg/kg	**350 J**	< 410 U	**150 J**	< 430 U	**190 J**	< 400 U	**570 J**	< 400 U	**99 J**	< 400 U
Phenol	µg/kg	< 440 U	< 410 U	< 480 U	< 430 U	< 480 U	< 400 U	< 600 U	< 400 U	< 410 U	< 400 U
Pyrene	µg/kg	**93 J**	< 410 U	**56 J**	< 430 U	< 480 U	< 400 U	**140 J**	< 400 U	< 410 U	**61 J**
TPH - USEPA Method SW8015C											
Diesel Range Organics [C10-C28]	mg/kg	**27**	**11**	**2.6**	**7.2**	**60**	**5.5 J**	**8.5 J**	**4.8 J**	**17**	**47**
Gasoline Range Organics (GRO)-C6-C10	mg/kg	< 0.28 U	< 0.24 U	**1.1**	**0.38**	**0.27 J**	**1.1**	**9.3**	**2.1**	**0.31 J**	**52**
ORO C24-C40	mg/kg	**4.5 J**	**1.7 J**	**3.6 J**	**2.8 J**	**71**	**2.5 J**	**4.9 J**	< 6.1 U	**15 B**	**3.5 JB**

Table 4
Analytical Results - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Location ID		SB03-06	SB03-06	SB03-07	SB03-07	SB03-08	SB03-08	SB03-09	SB03-09	SB03-10	SB03-10
Sample Date		8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013
Sample Interval (ft bgs)		0.5 - 1	3 - 3.5	1.5 - 2	4.5 - 5	1.5 - 2	3 - 3.5	1.5 - 2	3.5 - 4	0.5 - 1	5.5 - 6
Secondary Sample Interval (ft bgs)[1]		0 - 1	2.5 - 3.5	1.5 - 2.5	4.5 - 5.5	1 - 2	3 - 4	1 - 2	3.5 - 4.5	0.5 - 1.5	5.5 - 6.5
Constituent[2]	**Units**										
VOCs - USEPA Method SW8260B											
1,2-Dichlorobenzene	µg/kg	**13**	**2.2 J**	< 4.3 U	< 4.6 U	< 5.1 U	< 4.7 U	< 5.6 U	< 4.8 U	< 10 U	< 4.7 U
2-Butanone	µg/kg	< 62 U	< 21 U	< 22 U	**6.1 J**	< 25 U	< 23 U	< 28 U	< 24 U	< 50 U	**4.0 J**
Acetone	µg/kg	< 62 U	**19 J**	< 22 U	**25**	< 25 U	**21 J**	< 28 U	**7.5 J**	**21 J**	**24**
Carbon Disulfide	µg/kg	< 12 U	< 4.3 U	< 4.3 U	< 4.6 U	< 5.1 U	< 4.7 U	< 5.6 U	< 4.8 U	< 10 U	< 4.7 U
CFC-11	µg/kg	< 12 U	< 4.3 U	**4.8**	**5.0**	**7.7**	**5.1**	**6.0**	**6.5**	**11**	< 4.7 U
Ethylbenzene	µg/kg	**2.0 J**	< 4.3 U	< 4.3 U	< 4.6 U	< 5.1 U	< 4.7 U	< 5.6 U	< 4.8 U	< 10 U	< 4.7 U
m-Dichlorobenzene	µg/kg	**3.7 J**	< 4.3 U	< 4.3 U	< 4.6 U	< 5.1 U	< 4.7 U	< 5.6 U	< 4.8 U	< 10 U	< 4.7 U
Methyl tert-butyl ether	µg/kg	< 12 U	< 4.3 U	< 4.3 U	< 4.6 U	< 5.1 U	< 4.7 U	< 5.6 U	< 4.8 U	< 10 U	< 4.7 U
Methylcyclohexane	µg/kg	**2.2 J**	< 4.3 U	< 4.3 U	**1.1 J**	< 5.1 U	< 4.7 U	< 5.6 U	< 4.8 U	< 10 U	< 4.7 U
Toluene	µg/kg	**2.3 J**	< 4.3 U	< 4.3 U	< 4.6 U	< 5.1 U	< 4.7 U	< 5.6 U	< 4.8 U	< 10 U	< 4.7 U
Xylenes, Total	µg/kg	**11 J**	**2.4 J**	< 8.6 U	< 9.2 U	< 10 U	< 9.3 U	< 11 U	< 9.5 U	< 20 U	< 9.5 U
SVOCs - USEPA Method SW8270D											
1,2-Benz-phenanthracene	µg/kg	**150 J**	< 400 U	**62 J**	**41 J**	< 430 U	< 400 U	< 430 U	< 400 U	**110 J**	< 410 U
2,6-Dinitrotoluene	µg/kg	< 500 U	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
2-Methyl naphthalene	µg/kg	**2800**	**89 J**	**690**	**800**	**220 J**	< 400 U	< 430 U	< 400 U	**320 J**	< 410 U
Acenaphthene	µg/kg	< 500 U	**120 J**	< 410 U	< 440 U	< 430 U	**93 J**	< 430 U	< 400 U	< 560 U	< 410 U
Acenaphthylene	µg/kg	**110 J**	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Acetophenone	µg/kg	**93 J**	< 400 U	**35 J**	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Anthracene	µg/kg	**240 J**	< 400 U	**76 J**	**77 J**	< 430 U	< 400 U	< 430 U	< 400 U	**43 J**	< 410 U
Benzaldehyde	µg/kg	**140 J**	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Benzo(a)anthracene	µg/kg	**88 J**	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	**68 J**	< 410 U
Benzo(a)pyrene	µg/kg	< 500 U	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Benzo(b)fluoranthene	µg/kg	**140 J**	< 400 U	**48 J**	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Benzo(g,h,i)perylene	µg/kg	**51 J**	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Benzo(k)fluoranthene	µg/kg	< 500 U	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
bis(2-Ethylhexyl)phthalate	µg/kg	< 500 U	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	**280 J**	< 410 U
Caprolactam	µg/kg	**740**	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Carbazole	µg/kg	< 500 U	< 400 U	< 410 U	**40 J**	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Dibenzo(a,h)anthracene	µg/kg	< 500 U	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Dibenzofuran	µg/kg	**540**	< 400 U	**130 J**	**120 J**	< 430 U	< 400 U	< 430 U	< 400 U	**74 J**	< 410 U
Di-n-octyl phthalate	µg/kg	**140 J**	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Fluoranthene	µg/kg	**200 J**	< 400 U	**96 J**	**60 J**	< 430 U	< 400 U	< 430 U	< 400 U	**130 J**	< 410 U
Fluorene	µg/kg	**190 J**	**200 J**	**170 J**	**140 J**	< 430 U	**200 J**	< 430 U	< 400 U	< 560 U	< 410 U
Indeno(1,2,3-cd)pyrene	µg/kg	**79 J**	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Naphthalene	µg/kg	**1400**	**58 J**	**330 J**	**420 J**	**94 J**	< 400 U	< 430 U	< 400 U	**180 J**	< 410 U
N-Nitrosodiphenylamine	µg/kg	< 500 U	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Phenanthrene	µg/kg	**1000**	< 400 U	**250 J**	**210 J**	**39 J**	< 400 U	< 430 U	< 400 U	**260 J**	< 410 U
Phenol	µg/kg	< 500 U	< 400 U	< 410 U	< 440 U	< 430 U	< 400 U	< 430 U	< 400 U	< 560 U	< 410 U
Pyrene	µg/kg	**300 J**	**45 J**	**65 J**	**58 J**	< 430 U	< 400 U	< 430 U	< 400 U	**110 J**	< 410 U
TPH - USEPA Method SW8015C											
Diesel Range Organics [C10-C28]	mg/kg	**230**	**47**	**9**	**120**	**32**	**57**	**4.7 J**	**6.6**	**18**	**4.2 J**
Gasoline Range Organics (GRO)-C6-C10	mg/kg	**1**	**0.88**	**17**	**0.45**	**2.3**	**0.18 J**	< 0.26 U	< 0.24 U	< 0.44 U	< 0.23 U
ORO C24-C40	mg/kg	**12 B**	**9 B**	**3.7 JB**	**18 B**	**37 B**	**79 B**	**4.1 JB**	**3.1 JB**	**38 B**	**3.4 JB**

Table 4
Analytical Results - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Notes:

1. Sampling interval was expanded to a one-foot interval of split-spoon samples to allow collection of larger volume for SVOC and TPH-DRO analyses.
2. Constituents which were not detected at concentrations above reporting limits are not displayed. For a full list of analytes, refer to Appendix E.

B - Constituent was detected in laboratory method blank.
J - Value estimated.
U - Analyte was analyzed for but not detected. Value listed represents the reporting limit concentration.
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds
TPH - Total Petroleum Hydrocarbons
µg/kg - micrograms per kilogram
BOLD values indicate detections

Table 5
Analytical Results - Groundwater
CSXT Brunswick Yard, Brunswick, Maryland

Constituents*	Location ID: / Sample ID: / Sample Date: / Units:	PZ01-04 / PZ01-04 (082013) / 8/20/2013	PZ01-09 / PZ01-09 (082013) / 8/20/2013	PZ02-04 / PZ02-04 (082113) / 8/21/2013	PZ02-08 / PZ02-08 (082213) / 8/22/2013	PZ03-04 / PZ03-04 (082213) / 8/22/2013	PZ03-08 / PZ03-08 (082213) / 8/22/2013
VOCs							
Acetone	µg/l	< 25 U	< 25 U	< 25 U	< 25 U	**16 J**	< 25 U
Methyl tert-butyl ether	µg/l	**0.87 J**	**3.0**	< 1 U	< 1 U	< 1 U	< 1 U
SVOCs							
2-Methyl naphthalene	µg/l	< 9.5 U	< 9.7 U	< 9.9 U	< 10 U	**1.8 J**	< 9.9 U
Acenaphthene	µg/l	**2.1 J**	< 9.7 U	< 9.9 U	< 10 U	**2.4 J**	**4.8 J**
Benzo(a)pyrene	µg/l	**3.2 J**	< 9.7 U	< 9.9 U	< 10 U	< 9.9 U	< 9.9 U
Benzo(g,h,i)perylene	µg/l	**12**	< 9.7 U	< 9.9 U	< 10 U	< 9.9 U	< 9.9 U
Benzo(k)fluoranthene	µg/l	**2.0 J**	< 9.7 U	< 9.9 U	< 10 U	< 9.9 U	< 9.9 U
Caprolactam	µg/l	< 9.5 U	< 9.7 U	< 9.9 U	**6.1 J**	< 9.9 U	< 9.9 U
Dibenzo(a,h)anthracene	µg/l	**9.8**	< 9.7 U	< 9.9 U	< 10 U	< 9.9 U	< 9.9 U
Fluorene	µg/l	**3.7 J**	< 9.7 U	< 9.9 U	< 10 U	**3.9 J**	**6.6 J**
Indeno(1,2,3-cd)pyrene	µg/l	**1.8 J**	< 9.7 U	< 9.9 U	< 10 U	< 9.9 U	< 9.9 U
Naphthalene	µg/l	< 9.5 U	< 9.7 U	< 9.9 U	< 10 U	**1.2 J**	< 9.9 U
Phenanthrene	µg/l	< 9.5 U	< 9.7 U	< 9.9 U	< 10 U	**1.0 J**	< 9.9 U
TPH							
Diesel Range Organics [C10-C28]	mg/l	**1.5**	**0.14**	**0.36 B**	**0.34 B**	**28 B**	**11**
Diesel Range Organics [C10-C28] [SGC]	mg/l	**1.3**	**0.13**	**0.32 B**	**0.31 B**	**27 B**	**8**
Gasoline Range Organics (GRO)-C6-C10	mg/l	**0.034 JB**	**0.018 JB**	**0.019 JB**	**0.013 JB**	**0.062 B**	**0.079 B**

Notes:

* Constituents which were not detected at concentrations above reporting limits are not displayed. For a full list of analytes, refer to Appendix E

TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compunds
µg/l - micrograms per liter
SGC - silica gel cleanup

< 1 U - Concentration is less than the reporting limit
J - Concentration is estimated
B - Constituent was detected in laboratory method blank
mg/l - miligrams per liter
Bold values indicate detections.

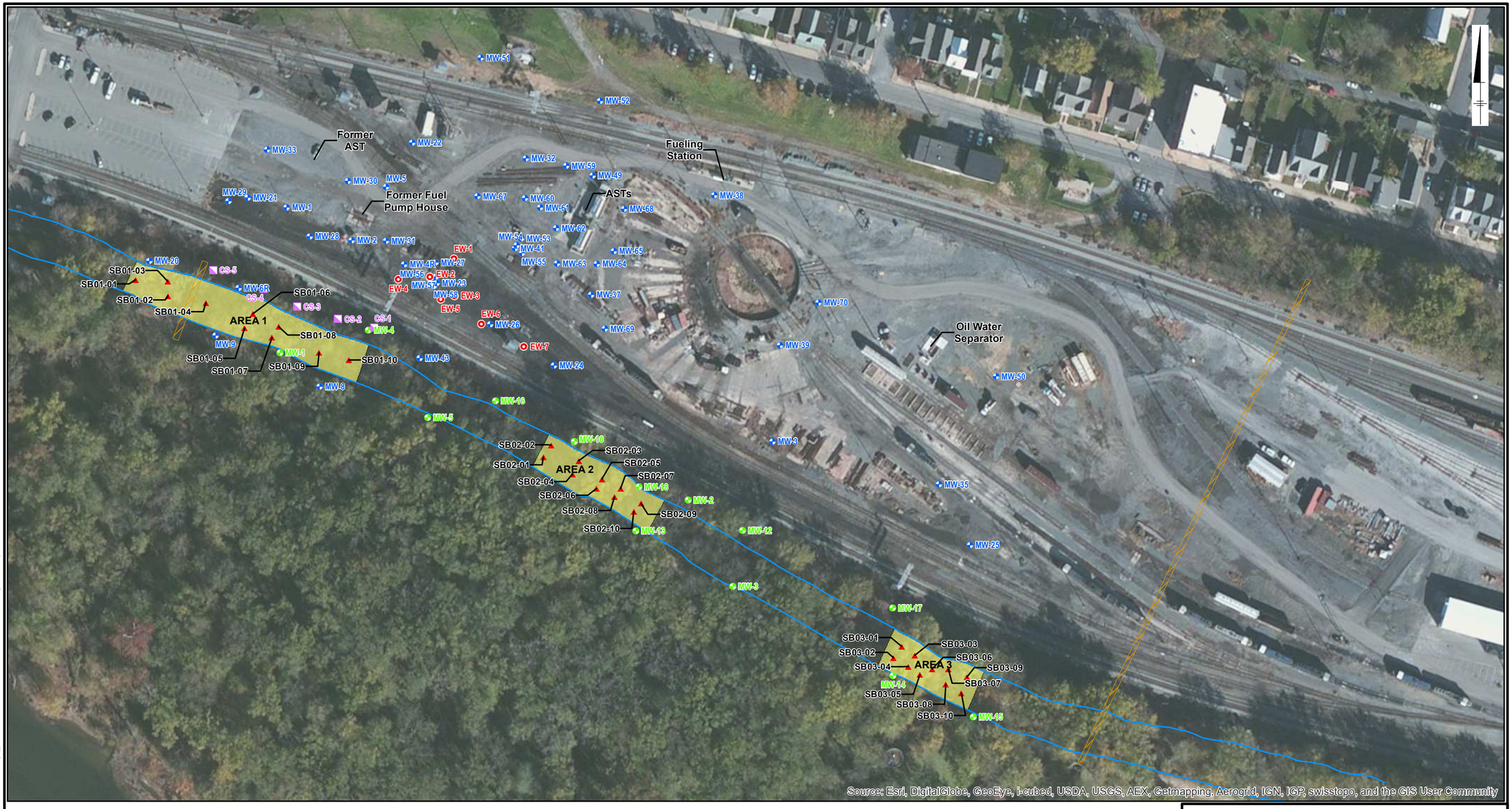
Table 6
NPS MW-18 Analytical Results Summary - Soil
CSXT Brunswick Yard, Brunswick, Maryland

Constituent	Location ID: / Sample Date: / Depth Interval (ft bgs): / Units:	NPS MW-18 / 6/24/2013 / 8.0 - 8.5 (8 - 9)*
VOCs (µg/kg)		
CFC-11	µg/kg	**6.3**
TPH (mg/kg)		
Diesel Range Organics [C10-C28]	mg/kg	**12**
Gasoline Range Organics (GRO)-C6-C10	mg/kg	**0.034 J**
Oil Range Organics (C20-C36)	mg/kg	< 24 U

Notes:
* Sampling interval was expanded to a one-foot interval of split-spoon samples to allow collection of larger volumes for SVOC and TPH-DRO analysis.
VOCs - Volatile Organic Compounds
TPH - Total Petroleum Hydrocarbons
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
ft bgs - feet below ground surface
<1U - Concentration is less than the reporting limit
J - Concentration is estimated
Constituents which were not detected at concentrations above reporting limits are not displayed. For a full list of analytes, refer to Appendix E.

ARCADIS

Figures



LEGEND

- National Park Service Monitoring Well
- CSXT Monitoring Well
- Extraction Well
- Collection Sump
- Direct Push Soil Boring Location (August 2013)
- Existing Canal
- StoneDrainageCulvert
- Area of Concern

0 125 250

SCALE IN FEET

COORDINATE SYSTEM: NAD 1983 StatePlane Maryland FIPS 1900 Feet

CSX TRANSPORTATION, INC.
BRUNSWICK, MARYLAND

REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SITE FEATURES

ARCADIS

FIGURE
1

CITY: (KNOXVILLE) DIV/GROUP:(ENV/GIS) DB:(BALTOM) PIC:(J.REID) PM:( ) TM:(LLAMB) PROJECT: MD000843.0011
PATH: Z:\GIS\PROJECTS_ENV\CSX_Brunswick\MXDs\Fig1_SiteFeatures.mxd SAVED: 11/8/2013 BY: gmckinney

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PROJECT
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LEGEND

- National Park Service Monitoring Well
- CSXT Monitoring Well
- Extraction Well
- Collection Sump
- Direct Push Soil Boring Location (August 2013)
- Existing Canal
- Stone Drainage Culvert
- Area of Concern

0 50 100

SCALE IN FEET

COORDINATE SYSTEM: NAD 1983 StatePlane Maryland FIPS 1900 Feet

CSX TRANSPORTATION, INC.
BRUNSWICK, MARYLAND

REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

C&O CANAL
AOC 1 SOIL SAMPLE LOCATIONS

ARCADIS

FIGURE
2

CS-2
CS-1
MW-4
EW-6
MW-26
MW-69
EW-7
MW-39
SB01-10
MW-43
MW-24
MW-16
MW-5
MW-10
SB02-02
SB02-01
SB02-03
AREA 2
SB02-04
SB02-05
SB02-06
SB02-07
MW-18
SB02-08
MW-2
SB02-09
SB02-10
MW-13
MW-12
MW-3
MW-17

LEGEND

- National Park Service Monitoring Well
- CSXT Monitoring Well
- Extraction Well
- Collection Sump
- Direct Push Soil Boring Location (August 2013)
- Existing Canal
- Area of Concern

0 50 100

SCALE IN FEET

COORDINATE SYSTEM: NAD 1983 StatePlane Maryland FIPS 1900 Feet

CSX TRANSPORTATION, INC.
BRUNSWICK, MARYLAND

REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

C&O CANAL
AOC 2 SOIL SAMPLE LOCATIONS

ARCADIS

FIGURE
3

CITY:(HIGHLANDS RANCH) DIV/GROUP:(ENV/GIS) DB: G.M'KINNEY LD: PIC: PM: TM:
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PROJECT:
Path: Z:\GIS\PROJECTS_ENV\CSX_Brunswick\MXDs\Fig4_AOC3_CO_Canal_v2.mxd Date Saved: 11/15/2013 9:03:07 AM

LEGEND

- National Park Service Monitoring Well
- CSXT Monitoring Well
- Direct Push Soil Boring Location (August 2013)
- Existing Canal
- Stone Drainage Culvert
- Area of Concern

0 50 100

SCALE IN FEET

COORDINATE SYSTEM: NAD 1983 StatePlane Maryland FIPS 1900 Feet

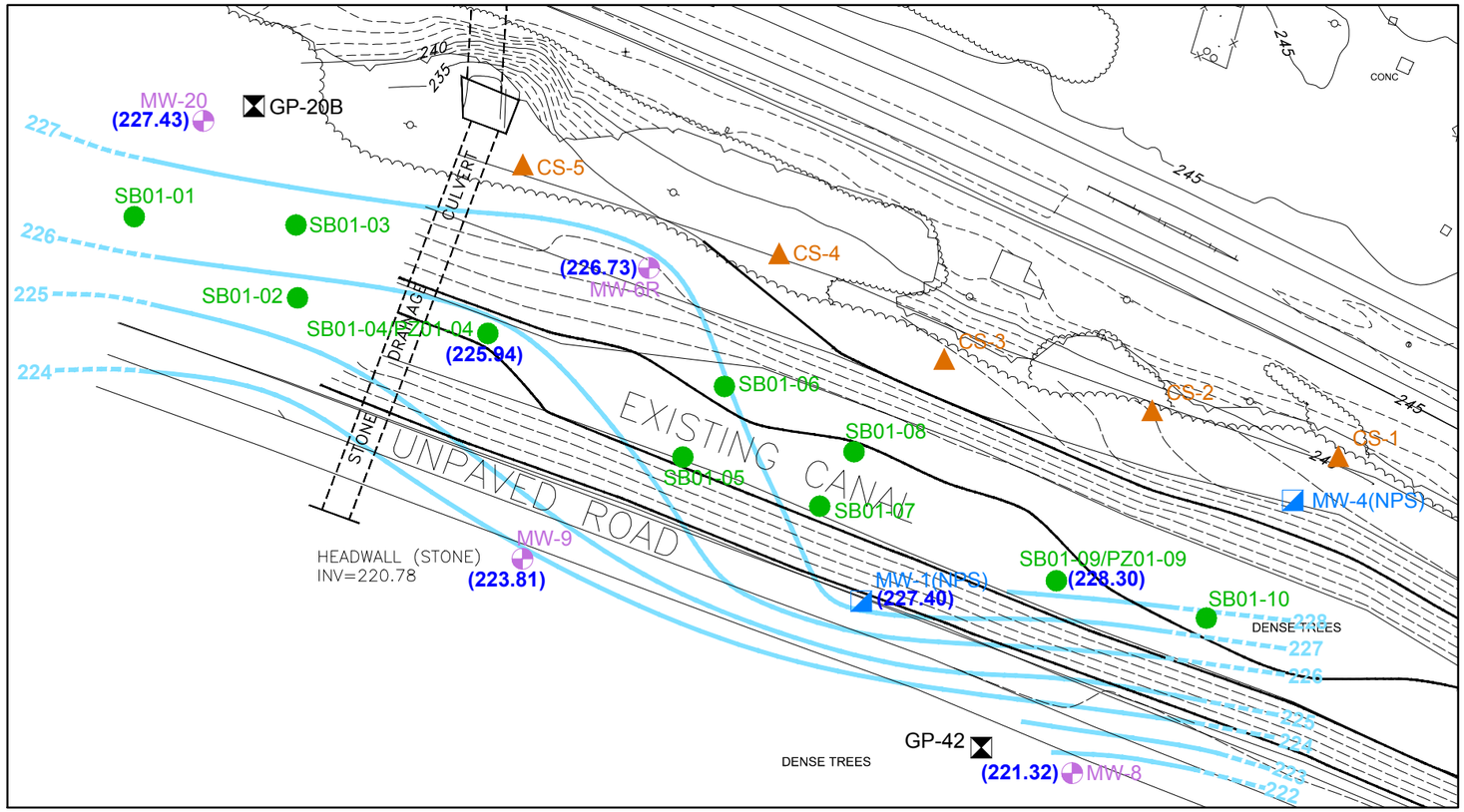
CSX TRANSPORTATION, INC.
BRUNSWICK, MARYLAND

REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

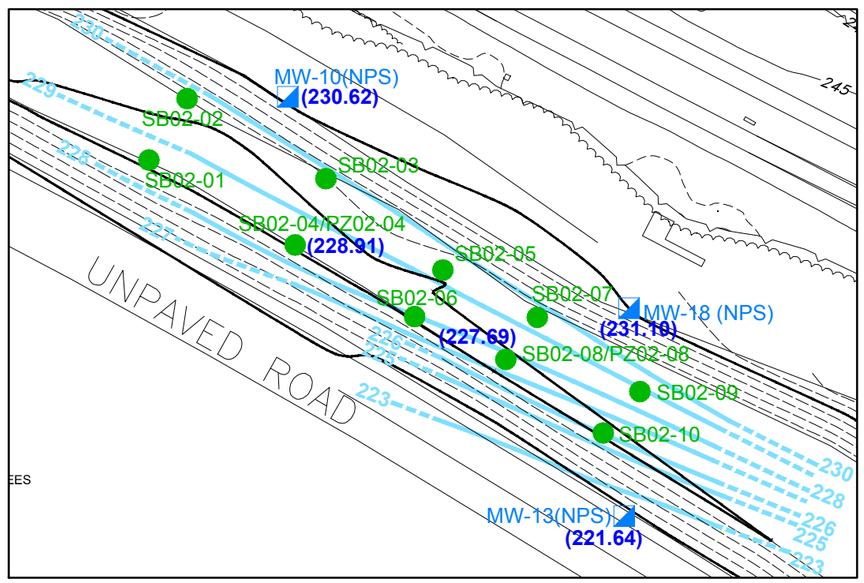
C&O CANAL
AOC 3 SOIL SAMPLE LOCATIONS

ARCADIS

FIGURE
4



AOC 1



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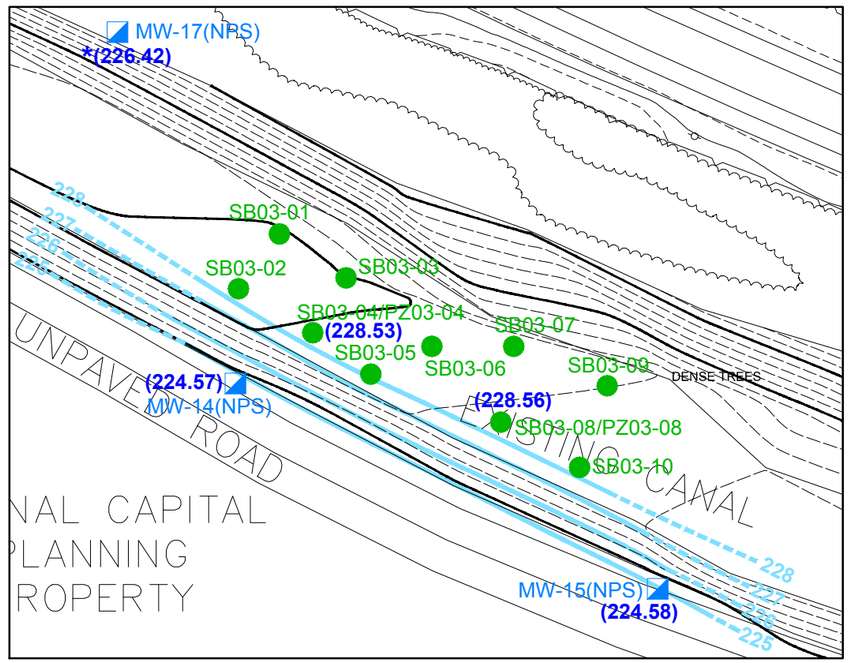


AOC 3

LEGEND:

- CSXT MONITORING WELL
- NATIONAL PARK SERVICE MONITORING WELL
- COLLECTION SUMP LOCATION
- GEOPROBE DIRECT PUSH
- SOIL BORING LOCATION
- (227.43) GROUNDWATER ELEVATION RECORDED ON AUGUST 21, 2013
- * GROUNDWATER ELEVATION NOT CONTOURIED
- 225 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

NOTES:

1. WATER LEVELS AT THE FOLLOWING PIEZOMETERS WERE COLLECTED ON DIFFERENT DATES DUE TO EARLIER ABANDONMNET OF AOC 1 PIEZOMETERS AND LATER INSTALLATION OF AOC 3 PIEZOMETERS:
   a. PIEZOMETER PZ-01-04 RECORDED ON AUGUST 19, 2013.
   b. PIEZOMETER PZ-01-09 RECORDED ON AUGUST 20, 2013.

0 20' 40'
SCALE IN FEET

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

CONTOURED GROUNDWATER ELEVATIONS AUGUST 21, 2013

ARCADIS

FIGURE
5

ARCADIS

Appendix A

Soil Boring and
Well Construction Logs

Sample Log

Boring SB01-01 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/19/2013 **Start Time** 1138 **End Time** 1149

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1134997.5 **Northing** 599429.2 **Ground Surface Elevation (ft amsl)** 229.7

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.1	0.0 - 0.5: Loose black (2.5/1 on 7.5YR) soil with some organic material, roots	0, 2.5, 3.7, 3.4
			0.5 - 2.0: Loose black (2.5/1 on 7.5YR) soil, some small (< 5mm) interbedded silt and clay layers	
2	6	4.4	2.0 - 2.8: Same as above (SAA)	2.1, 4.4, 31.2, 19.7, 0.0, 12.7, 76, 27.2
			2.8 - 6.0: Clay, brown (4/3 on 10YR), some small (2 - 6 mm) black (2/1 on 10YR) and yellowish red (5/8 on 4YR) layers, very plastic, little organic material. CLAY CANAL LINER	
6	10.3	4.3	6.0 - 8.7: Clay. Dark olive brown (3/3 on 2.5Y). Hard. Medium plasticity. Some black (2.5/1 on 7.5YR) silt lenses.	4.7, 15.2, 12.2, 9.3, 11.2, 271, 309, 155
			8.7 - 9.5: Dark olive brown (3/3 on 2.5Y) clay with some black (2.5/1 on 7.5YR) silt lenses. Low plasticity. MOIST.	
			9.5 - 9.8: Very coarse, sub-rounded grained sand. Hard. No plasticity. Yellowish brown (4/4 on 10 YR) with some strong brown (4/6 on 7.5 YR). WET.	
			9.8 - 10.3: Dark olive brown (3/3 on 2.5Y) clay and fine grained sand and silt. Soft. Low plasticity. SATURATED.	

CLAY CANAL LINER from 2.8 - 6.0; 3.2 ft thick

SOIL SAMPLES COLLECTED FROM 1.0 - 2.0 (above CLAY CANAL LINER) and 9.0 - 10.0 (below CLAY CANAL LINER)

* PID readings taken at 0.5 ft intervals

Sample Log

Boring SB01-02 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/19/2013 **Start Time** 1350 **End Time** 1407

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135040.7 **Northing** 599407.7 **Ground Surface Elevation (ft amsl)** 230.1

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	3.1	0.0 - 0.5: Loose black (2.5/1 on 7.5YR) soil with some organic material, roots	0.4, 23.7
			0.5 - 1.3: Fine grained brown sand (4/6 on 7.5YR) with some clay lenses. Dry. No plasticity.	
			1.3 - 2.0: Brown clay (4/6 on 7.5YR) and silts. Some interbedded silty and fine grained sand layers about 10 mm thick. Very hard. Brittle. Low plasticity. CLAY CANAL LINER	
2	6	3.7	2.0 - 4.8: SAA	16.2, 17.8, 14.6, 12.5
			4.8 - 6.0: Dark brown clay (3/3 on 10YR). High plasticity. Hard. Homogenous.	
6	10.1	3.3	6.0 - 9.8: SAA. MOIST. WET (last 1.5 ft).	8.2, 9.3, 0.4, 0.4
			9.8 - 10.1: SAA. SATURATED.	

CLAY CANAL LINER from 1.3 - 4.8; 3.5 ft thick

SOIL SAMPLES COLLECTED FROM 1.0 - 2.0 (above CLAY CANAL LINER) and 9.0 - 10.0 (below CLAY CANAL LINER)

* PID readings taken at 0.5 ft intervals

Sample Log

Boring SB01-03 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/19/2013 **Start Time** 1335 **End Time** 1347

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135040.3 **Northing** 599427 **Ground Surface Elevation (ft amsl)** 230.1

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.1	0.0 - 0.7: Loose black (2.5/1 on 7.5YR) soil with some organic material, roots	75, 61, 71
			0.7 - 1.65: Fine to medium grained black sand (2/1 on 10YR) with some yellow brown silty clay (5/6 on 10YR).	
			1.65 - 2.0: Dark brown clay (3/2 on 7.5YR). Hard, brittle, dry. Interbedded with 1-2mm thick layers of strong brown (5/8 on 7.5YR) sandy clay. Very low plasticity. CLAY CANAL LINER	
2	6	3.9	2.0 - 4.7: SAA	58, 60.9, 42, 40
			4.7 - 6.0: Clay. Very dark brown (2/2 on 10YR). Very competant. Dry. Hard. Homogenous. Very Plastic.	
6	9.9	3.9	6.0 - 9.5: Clay. Very dark brown (2/2 on 10YR). Very competant. Hard. Some dark reddish gray (4/1 on 2.5YR) and red (4/6 on 2.5YR) silt lenses. DAMP	31, 17.1, 14, 35.7
			9.5 - 9.6: Angular gravel zone. SATURATED.	
			9.6 - 9.9: Strong brown clay (4/4 on 7.5YR). WET	

CLAY CANAL LINER from 1.65 - 4.7; 3.05 ft thick

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 5.0 - 6.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB01-04 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/19/2013 **Start Time** 1350 **End Time** 1407

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135091 **Northing** 599398.3 **Ground Surface Elevation (ft amsl)** 229.5

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	4.6	0.0 - 1.1: Loose black (2.5/1 on 7.5YR) soil with some organic material	7.9, 41.2, 40.4, 108.6
			1.1 - 3.2: Yellowish brown (5/6 on 10YR) clay with brownish yellow (6/6 on 10YR) silt lenses ~ 1-3 mm. Little amounts of fine sands. Dry. Brittle. Low plasticity. Hard. CLAY CANAL LINER	
			3.2 - 4.0: Black (2/1 on 10YR) clay. Medium plasticity. Little amounts of silt lenses. Little organic matter. SLIGHT ODOR.	
4	8	3.4	4.0 - 8.0: Black (2/1 on 10YR) clay. Homogenous. Medium hardness. Very plastic. STRONG ODOR.	23.2, 32.2, 41.1, 20.1
8	10	1.5	8.0 - 9.1: SAA. WET.	50.2, 19.1
			9.1 - 9.5: Very dark gray (2.5/1 on 2.5YR) coarse-grained sand. Angular. Some pebbles. Little amount of clay. No plasticity. SATURATED	

CLAY CANAL LINER from 1.1-3.2; 2.1 ft thick

SOIL SAMPLES COLLECTED FROM 0.0 - 1.0 (above CLAY CANAL LINER) and 6.0 - 7.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB01-06 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/19/2013 **Start Time** 1544 **End Time** 1559

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135153.6 **Northing** 599384.3 **Ground Surface Elevation (ft amsl)** 229.9

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	2.9	0.0 - 0.3: Black (2.5/1 on 7.5 YR) soil and organics	0.0, 36.9, 15.5, 23.4
			0.3 - 2.3: Very fine grained, well sorted reddish brown sand (4/4 on 5YR). Some clay lenses. No plasticity.	
			2.3 - 4.0: Clay. Strong brown (4/6 on 7.5YR) with little silt. Very hard. Little plasticity. CLAY CANAL LINER. STRONG ODOR.	
4	8	3.4	4.0 - 5.2: SAA	0.0
			5.2 - 8.0: Clay. Very dark gray (3/1 on 7.5 YR) with some silt. Very plastic. STRONG ODOR. DAMP in last 2 ft.	
8	10.1	2.1	8.0 - 10.1: SAA. WET. STRONG ODOR.	0.0

CLAY CANAL LINER from 2.3 - 5.2; 2.9 ft thick

SOIL SAMPLES COLLECTED FROM 1.0 - 2.0 (above CLAY CANAL LINER) and 6.5 - 7.5 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB01-05 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/19/2013 **Start Time** 1604 **End Time** 1621

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135142.6 **Northing** 599365.6 **Ground Surface Elevation (ft amsl)** 229.8

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.2	0.0 - 0.6: Black (2.5/1 on 7.5 YR) soil. Organics.	0.0
			0.6 - 0.8: Angular gravel (~20 - 30mm). Reddish gray (5/1 on 10R).	
			0.8 - 0.9: Red (5/8 on 10R) angular gravel.	
			0.9 - 2.5: Heterogeneous mix of strong brown clay (5/6 on 7.5 YR) and dark brown (3/3 on 7.5 YR) medium-grainied sand and silt. Poorly sorted. Some red (5/8 on 10R) angular gravel and pebbles. Dry. Medium plasticity. Low dilitacy	
			2.5 - 4.0: Clay. Strong brown (4/6 on 7.5YR). Damp. Low plasticity. Hard. CLAY CANAL LINER	
4	8	3.4	4.0 - 5.2: SAA. CLAY CANAL LINER	0.0, 0.0, 0.0, 9.3
			5.2 - 8.0: Clay. Very dark gray (3/1 on 7.5YR) with little silt. Very plastic. DAMP. Very MOIST in last 2 ft.	
8	9.6	3	8.0 - 9.6: SAA. WET	18.7

CLAY CANAL LINER from 2.5 - 5.2; 2.7 ft thick

SOIL SAMPLES COLLECTED FROM 1.5 - 2.5 (above CLAY CANAL LINER) and 8.0 - 9.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB01-07 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 0814 **End Time** 0824

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135178.8 **Northing** 599352.6 **Ground Surface Elevation (ft amsl)** 229.6

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.4	0.0 - 1.1: Black (2/1 on 10 YR) soil and organics. Some fine-medium grained sand.	9.2, 37.9, 73, 29.7
			1.1 - 1.6: Clay and soil. Very dark brown (2/2 on 10 YR). High plasticity.	
			1.6 - 4.0: Yellowish brown (5/6 on 10 YR) clay. Very hard. Britle. Dry. Low plasticity. CLAY CANAL LINER.	
4	8	3.4	4.0 - 5.5: SAA	31.9, 30.7, 27.8, 32.4
			5.5 - 7.5: Dark gray (4/1 on 10YR) clay. Medium plasticity. MOIST. SLIGHT ODOR.	
			7.5 - 8.0: Very dark gray (3/2 on 10 YR) clay. High plasticity. WET	
8	10	2	8.0 - 8.5: SAA	36.1, 36.3
			8.5 - 9.9: SAA, but SATURATED. SLIGHT ODOR.	

CLAY CANAL LINER from 1.6 - 5.5; 3.9 ft thick

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 9.0 - 10.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB01-08 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 0828 **End Time** 0839

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135187.9 **Northing** 599367 **Ground Surface Elevation (ft amsl)** 229.8

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	4	0.0 - 1.1: Black soil (2/1 on 10 YR) and organic material	19.2, 23.4, 31.7, 29.3
			1.1 - 1.6: Interbedded layers (~1-3 mm thick) of silt, fine sands, some clay. Layers are very dark gray (3/1 on 7.5 YR) and strong brown (4/6 on 7.5YR).	
			1.6 - 2.5: Very dark gray (3/1 on 7.5YR) clay. Some organic material. Some sands. Not plastic.	
			2.5 - 3.5: Strong brown (4/6 on 7.5YR) clay. Little silt lenses that are very dark gray (3/1 on 7.5YR). Low plasticity. Hard. CLAY CANAL LINER	
			3.5 - 4.0: Strong brown (4/6 on 7.5YR) clay. Very little silt. No plasticity. Hard. CLAY CANAL LINER	
4	8	3.8	4.0 - 5.5: SAA	53.1, 47.8, 21.1, 7.0
			5.5 - 8.0: Dark gray clay (4/1 on 7.5YR). Some silt. High plasticity. Soft. DAMP.	
8	10.2	2.2	8.0 - 9.2: SAA	16.3, 19.2
			9.2 - 10.2: SAA, but WET	

CLAY CANAL LINER from 2.5 - 5.5; 3.0 ft thick

SOIL SAMPLES COLLECTED FROM 1.5 - 2.5 (above CLAY CANAL LINER) and 9.0 - 10.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB01-09 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 0906 **End Time** 0921

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135241.4 **Northing** 599332.9 **Ground Surface Elevation (ft amsl)** 229.5

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	4	0 - 0.3: Black, loose soil.	0.0, 0.0, 32.4, 11.7
			0.3 - 0.9: Fine to medium grained sand. Very dark gray (3/1 on 7.5YR). Some silt. No plasticity. SATURATED.	
			0.9 - 2.3: Strong brown (4/6 on 7.5YR) clay. Brittle. Hard. Low plasticity. CLAY CANAL LINER	
			2.3 - 3.5: Clay. Gray (5/1 on 10YR) and strong brown (5/6 on 7.5YR). Hard. Medium plasticity.	
			3.5 - 3.8: Clay and silt. Pinkish gray (6/2 on 7.5YR). Some angular pebbles.	
			3.8 - 4.0: Well confined clay. Hard. High plasticity. Strong brown (4/6 on 7.5YR) and brown (4/4 on 7.5 YR)	
4	8	4	4.0 - 7.6: SAA	49.8, 15.5, 13.3, 0.0
			7.6 - 7.8: Clay and silt. Some angular gravel. SATURATED.	
			7.8 - 8.0: Strong brown (4/6 on 7.5YR) clay. Hard/ compact. High plasticity. WET.	
8	10.9	3.9	8.0 - 9.9: SAA	0.0, 0.0
			9.9 - 10.9: Medium-grained, well-rounded sand and silt. Some clay. Yellowsih brown (5/6 on 7.5YR). Not plastic. Soft. Dilitacy. SATURATED	
CLAY CANAL LINER from 0.9 - 2.3; 1.4 ft thick				
SOIL SAMPLES COLLECTED FROM 0.0 - 1.0 (above CLAY CANAL LINER) and 4.0 5.0 (below CLAY CANAL LINER)				

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB01-10 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 0955 **End Time** 1009

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135281.1 **Northing** 599323 **Ground Surface Elevation (ft amsl)** 229.4

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.75	0.0 - 0.35: Black soil.	0.0
			0.35 - 0.85: Dark grayish brown (4/2 on 10YR) sand and silt with some angular pebbles. SATURATED.	
			0.85 - 2.3: Clay. Hard. Britle. Dry. Non plastic. Interbedded gray (6/1 on 10YR) and dark yellowish brown (5/4 on 10YR) clay layers. CLAY CANAL LINER	
			2.3 - 4.0: Clay. Strong brown (4/6 on 7.5YR). Plastic. Medium stiffness.	
4	8	4.2	4.0 - 4.3: Sand. Black (2.5/1 on 7.5YR) Well-rounded. Some small pebbles and little clay. Loosely packed. Poorly sorted zone. SATURATED	0.0
			4.3 - 8.0: Clay. Dark brown (3/2 on 7.5YR). Some silt. Hard. Very plastic.	
8	10.5	3.9	8.0 - 8.2: SAA	0.0
			8.2 - 8.8: Dark brown clay and silt. WET.	
			8.8 - 10.0 Dark brown clay and silt and some small, sub-angular pebbles. Soft. No plasticity. WET.	
			10.0 - 10.3: Hard, packed, clay. Dark brown. High plasticity WET.	
			10.3 - 10.5: Dark brown clay and silt with some gravel. SATURATED.	

CLAY CANAL LINER from 0.85 - 2.3; 1.45 ft thick

SOIL SAMPLES COLLECTED FROM 0.0 - 1.0 (above CLAY CANAL LINER) and 4.0 - 5.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-01 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 1102 **End Time** 1112

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135539.2 **Northing** 599194.2 **Ground Surface Elevation (ft amsl)** 229.5

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.8	0 - 0.55: Black soil. Some organic material. Saturated.	0.0
			0.55 - 1.1: Medium to coarse grained sand and silt. Very dark gray (3/1 on 2.5Y). SATURATED.	
			1.1 - 4.0: Clay. Brown (4/4 on 7.5YR) and dark gray (4/1 on 7.5YR). Brittle. Low plasticity. Dry. Hard. CLAY CANAL LINER.	
4	8	4.3	4.0 - 8.0: Clay. Reddish brown (4/4 on 5YR). Well compacted. 1-2 inch thick layers of silty clay that is less compacted interbedded every 1-1.1 ft. Very plastic. DAMP last 1.5 - 2 ft.	0.0
8	9.8	3.6	8.0 - 9.8: Reddish brown (4/4 on 5YR and yellowish red (5/8 on 5YR) clay. Well compacted. High plasticity. WET.	0.0

CLAY CANAL LINER from 1.1 - 4.0; 3.1 ft thick

SOIL SAMPLES COLLECTED FROM 0.0 - 1.0 (above CLAY CANAL LINER) and 7.0 - 8.0 (below CLAY CANAL LINER)

Sample Log

Boring SB02-02 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 1114 **End Time** 1129

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135549.3 **Northing** 599429.2 **Ground Surface Elevation (ft amsl)** 230.0

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.8	0.0 - 0.45: Black soil. Some organic material.	0.0
			0.45 - 1.0: Well-rounded, light brown (6/4 on 7.5YR) sand and silt. Little amounts of clay. SATURATED.	
			1.0 - 3.0: Clay. Brown (4/2 on 7.5YR). Compacted. Dry. Hard. No plasticity. CLAY CANAL LINER.	
			3.0 - 4.0: SAA	
4	8	4.4	4.0 - 8.0: Silty clay. Strong brown (4/6 on 7.5YR). Very hard. Very plastic. WET.	0.0
8	10	3.6	8.0 - 10.0: SAA	0.0
CLAY CANAL LINER from 1.0 - 3.0 ft; 2.0 feet thick				
SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 4.5 - 5.5 (below CLAY CANAL LINER)				

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-03 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 1330 **End Time** 1342

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135585.9 **Northing** 599189.3 **Ground Surface Elevation (ft amsl)** 230.6

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.6	0.0 - 0.75: Black soil and organic matter. SATURATED.	0.0
			0.75 - 0.9: Gray (5/1 on 7.5YR) silty clay layer with some sub-angular pebbles.	
			0.9 - 2.0: Clay. Yellowish red (4/6 on 5YR). And gray silt lenses/ layers 1-3mm thick. Compacted. Medium plasticity. Medium stiffness.	
2	6	4	2.0 - 4.0: SAA	0.0
			4.0 - 6.0: Clay. Yellowish red (4/6 on 5YR). Little amounts of black silt lenses (~10%). Medium plasticity.	
6	9.6	3.4	6.0 - 8.0: Clay. Yellowish red (4/6 on 5YR). Stiff. Silt lenses gone. High plasticity.	0.0
			8.0 - 9.6: Clay. Yellowish red (4/6 on 5YR). Stiff. Silt lenses gone. High plasticity. WET.	

NO CLAY CANAL LINER DISCERNABLE

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 ft bgs and 5.0 - 6.0 ft bgs

* PID readings taken at 1.0 ft intervals.

Sample Log

Boring SB02-04 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 1349 **End Time** 1401

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135577.8 **Northing** 599171.8 **Ground Surface Elevation (ft amsl)** 229.8

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3	0.0 - 0.75: Black soil. SATURATED.	0.0, 0.0, 0.0, 3.4
			0.75 - 0.95: Clay and silt and some sand. Gray (5/1 on 7.5YR). Not plastic. SATURATED.	
			0.95 - 1.4: Clay. Brown (5/3 on 7.5YR). High Plasticity. Stiff. MOIST	
			1.4 - 4.0: Clay. Dark brown (3/4 on 7.5YR). Well compacted. Hard. Medium plasticity. Very homogenous. Trace amounts of black silt lenses.	
4	8	4.2	4.0 - 8.0: SAA. WET	0.0, 0.0, 0.0, 27.2
8	9.8	2.6	8.0 - 9.8: SAA. WET	0.0

NO CLAY CANAL LINER DISCERNABLE

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 ft bgs and 7.0 - 8.0 ft bgs

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-05 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 1424 **End Time** 1436

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135616.8 **Northing** 599165.2 **Ground Surface Elevation (ft amsl)** 230.4

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.3	0.0 - 0.9: Black soil. 0.9 - 1.6: Silt with some sand and sub-angular pebbles. Gray (5/1 on 7.5YR). Small yellowish red (5/8 on 5YR) clay lenses. 1.6 - 4.0: Clay. Homogenous reddish brown (4/4 on 5YR). Well compacted.	0.0
4	8	4.3	4.0 - 8.0: SAA.	0.0
8	10.2	2.6	8.0 - 10.2: SAA. WET.	0.0

NO CLAY CANAL LINER DISCERNABLE

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 ft bgs and 7.0 - 8.0 ft bgs

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-06 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/20/2013 **Start Time** 1441 **End Time** 1455

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135609.3 **Northing** 599152.9 **Ground Surface Elevation (ft amsl)** 230.0

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.2	0.0 - 0.8: Black soil. WET.	0.0
			0.8 - 1.1: Silty clay. Gray (5/1 on 7.5YR). SATURATED.	
			1.1 - 1.4: Clay and some silt. Brown (4/4 on 5YR). Stiff. Medium plasticity.	
			1.4 - 4.0: Clay. Strong brown (4/6 on 7.5YR). Small black silt lenses.	
4	8	4	4.0 - 8.0: SAA.	0.0
8	10.1	2.7	8.0 - 10.1: SAA, but WET.	0.0

NO CLAY CANAL LINER DISCERNABLE

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 ft bgs and 6.5 - 7.5 ft bgs

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-07 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 0834 **End Time** 0848

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135641.7 **Northing** 599152.7 **Ground Surface Elevation (ft amsl)** 230.2

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.4	0.0 - 1.0: Black soil and organic material.	0.0
			1.0 - 1.4: Silty clay. Very dark gray (3/1 on 7.5YR). Soft. Not plastic. SATURATED.	
			1.4 - 1.7: Clay. Brown (4/4 on 7.5YR). Low plasticity. Hard. Trace amounts of yellowish red (5/8 on 5YR) fine-grained sand. CLAY CANAL LINER	
			1.7 - 4.0: Clay. Very dark grayish brown (3/2 on 10YR). Hard. Very plastic. WET at 3.4 ft bgs.	
4	8	3.8	4.0 - 5.5: SAA.	0.0
			5.5 - 5.7: Silty clay. Brown (4/2 on 7.5YR). Soft. No plasticity.	
			5.7 - 8.0: Clay. Very dark grayish brown (3/2 on 10YR). Well compacted. Very plastic. Stiff.	
8	10.4	2.4	8.0 - 10.4: SAA. WET.	0.0

CLAY CANAL LINER from 1.4 - 1.7; 0.3 ft thick

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 5.5 - 6.5 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-08 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 0849 **End Time** 0902

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135633.4 **Northing** 599141.6 **Ground Surface Elevation (ft amsl)** 229.9

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3	0.0 - 0.9: Black soil. Little organic matter.	0.0, 4.2, 0.0, 0.0
			0.9 - 1.5: Silty sand. Dark gray (3/1 on 7.5YR). Soft. No plasticity. WET.	
			1.5 - 2.1: Clay. Brown (4/4 on 7.5YR). Britle. Hard. Dry. No plasticity. Small gray (5/1 on 7.5 YR) silt lenses (<15%). CLAY CANAL LINER.	
			2.1 - 3.0: Clay. Dark brown (3/4 on 7.5YR). Hard. Dry. No plasticity. More silt lenses than the above. CLAY CANAL LINER	
			3.0 - 4.0: Clay. Dark brown (3/4 on 7.5YR). Some silt. High plasticity. Stiff.	
4	8	4	4.0 - 6.0: SAA	6.7, 1.2, 0.0, 12.1
			6.0 - 8.0: Silty clay. Dark brown (3/4 on 7.5YR). Soft. Medium plasticity. WET.	
8	10	4	8.0 - 10.0: SAA	9.3, 3.1

CLAY CANAL LINER from 1.5 - 3.0; 1.5 ft thick

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 7.0 - 8.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-09 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 0939 **End Time** 0945

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135668.8 **Northing** 599133.1 **Ground Surface Elevation (ft amsl)** 230.0

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.4	0.0 - 0.9: Black soil.	0.0, 0.0
			0.9 - 1.3: Silty clay. Dark gray (4/1 on 7.5YR).	
			1.3 - 1.4: Gravel zone. Angular 1-1.5 inch pieces.	
			1.4 - 1.75: Clay and silt. Dark brown (3/2 on 7.5YR). High plasticity. Moist. Interbedded 2-3 mm layers of yellowish red, brittle clay and sands	
			1.75 - 2.0: Clay. Very compact and homogenous. Strong brown (4/6 on 7.5YR) with interbedded gray (5/1 on 7.5YR) lenses and some 1-2mm thick layers. High plasticity. Stiff.	
2	6	3.7	2.0 - 6.0: SAA	0.7, 14.7, 14.6, 12.2
6	10	4	6.0 - 10: SAA, but WET	8.0, 0.4, 0.4, 0.0

NO CLAY CANAL LINER DISCERNABLE

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 ft bgs and 4.5 - 5.5 ft bgs

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB02-10 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 0955 **End Time** 1009

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1135659.1 **Northing** 599122.2 **Ground Surface Elevation (ft amsl)** 229.8

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	3.3	0.0 - 0.8: Black soil. WET.	0.0, 0.0
			0.8 - 1.4: Silty clay and sand. Soft. Dark gray (4/1 on 7.5YR). Soft. Not plastic.	
			1.4 - 2.0: Clay. Strong brown (4/6 on 7.5YR). Small (3-6mm) black silt lenses. Medium plasticity. Stiff.	
2	6	3.9	2.0 - 4.1: SAA	0.0, 0.2, 8.2, 6.1
			4.1 - 6.0: Clay. Brown (4/3 on 7.5YR). Compact. Very plastic. Homogenous. WET	
6	10	3.9	6.0 - 10.0: SAA	0.9, 0.0, 0.0, 0.0

NO CLAY CANAL LINER DISCERNABLE

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 ft bgs and 5.0 - 6.0 ft bgs

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-01 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 1219 **End Time** 1229

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136014.7 **Northing** 598943.3 **Ground Surface Elevation (ft amsl)** 229.7

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.2	0.0 - 0.4: Black soil and organic matter.	0.0, 0.0
			0.4 - 1.25: Dark reddish brown (4/2 on 5YR) silty clay. SATURATED.	
			1.25 - 1.9: Reddish brown (4/2 on 5YR) clay. Small black silt lenses. Hard. Low plasticity. Poorly compacted. CLAY CANAL LINER.	
			1.9 - 2.0: Clay. Brown (3/3 on 5YR). Homogenous. Well compacted. Plastic. SLIGHT ODOR.	
2	6	4	2.0 - 3.7: SAA but SATURATED. ODOR	0.7, 12.2, 22.7, 18.9
			3.7 - 6.0: SAA. ODOR.	
6	10	3.8	6.0 - 10.0: SAA	9.7, 4.6, 12.3, 12.4

CLAY CANAL LINER from 1.25 - 1.9; 0.65 ft thick

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 5.0 - 6.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-02 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 1234 **End Time** 1245

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136003.9 **Northing** 598928.8 **Ground Surface Elevation (ft amsl)** 229.4

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	1.8	0.0 - 0.3: Black soil. SATURATED.	19.2, 49.2
			0.3 - 0.4: Reddish brown (4/3 on 5YR) silt and clay. Medium stiffness. Plastic.	
			0.4 - 0.6: Interbedded 3-5mm layers of gray (5/1 on 5YR) and reddish brown (4/4 on 5YR) clay. Low plasticity. Hard. Poorly compacted. Dry. CLAY CANAL LINER.	
			0.6 - 1.0: Silty clay. Reddish brown (4/4 on 7.5YR). Medium stiffness. Plastic.	
			1.0 - 1.8: Clay. Brown (4/4 on 7.5YR). Firm. Medium plasticity.	
			1.8 - 2.0: Silty clay. Black (2.5/1 on 7.5YR). Soft. Plastic. SATURATED. SLIGHT ODOR.	
2	6	4.3	2.0 - 3.0: SAA	56.2, 42.8, 32.2, 11
			3.0 - 3.8: Clay and silt. Brown (4/4 on 7.5YR). Stiff. Very plastic.	
			3.8 - 6.0: Clay. Yellowish red (4/6 on 5YR). Very hard. Medium plasticity. ODOR.	
6	10	4.1	6.0 - 10.0: SAA. WET.	36.2, 9.8, 0.9, 1.7

CLAY CANAL LINER from 0.4 - 0.6; 0.2 ft thick

SOIL SAMPLES COLLECTED FROM 0.0 - 1.0 (above CLAY CANAL LINER) and 3.0 - 4.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-03 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 1302 **End Time** 1311

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136032.3 **Northing** 598931.7 **Ground Surface Elevation (ft amsl)** 229.9

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	2.7	0.0 - 0.65: Black soil.	2.3, 32.9, 51.7, 62.8
			0.65 - 1.4: Silt and clay. Reddish brown (4/3 on 5YR). Soft. Low plasticity.	
			1.4 - 1.6: Interbedded 3-5mm layers of gray (5/1 on 5YR) and reddish brown (4/3 on 5YR) clay. Hard. Poorly compacted. Not plastic. CLAY CANAL LINER.	
			1.6 - 2.7: Clay. Brown (4/3 on 7.5). Firm. Plastic.	
			2.7 - 4.0: Clay. Dark brown (3/2 on 7.5YR). Little silt concentration. ODOR	
4	8	3.2	4.0 - 8.0: SAA. ODOR. DAMP through last 2 ft.	18.2, 12.9, 10.1, 7.6
8	10	1.7	8.0 - 10.0: SAA. WET.	0.2

CLAY CANAL LINER PRESENT FROM 1.4 - 1.6; 2 ft thick

SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 4.0- 5.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals.

Sample Log

Boring SB03-04 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/21/2013 **Start Time** 1326 **End Time** 1339

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136023.5 **Northing** 598917.2 **Ground Surface Elevation (ft amsl)** 229.6

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	3.4	0.0 - 0.8: Black soil.	12.8, 18.2, 36.7, 58.2
			0.8 - 1.0: Clay. Dark gray (4/4 on 2.5YR) with red (4/8 on 2.5YR) silt and sand lenses. Hard. Medium plasticity. Poorly compacted.	
			1.0 - 1.2: Silt and clay. Gray (5/1 on 7.5YR). Soft. No plasticity. WET.	
			1.2 - 1.3: Angular gravel	
			1.3 - 1.8: Clay. Red (4/6 on 2.5YR). With small black silt lenses. Hard. Low plasticity. Poorly compacted. CLAY CANAL LINER.	
			1.8 - 2.2: Clay. Red (4/6 on 2.5YR). Homogenous. Well compacted. Plastic. Medium stiffness.	
			2.2 - 3.4: Clay. Dark gray (4/1 on 5YR). Hard. Low plasticity.	
			3.4 - 4.0: Clay. Dark gray (4/1 on 5YR). With some silt. Soft. Low plasticity.	
4	8	3.6	4.0 - 5.5: SAA.	72.9, 71.0, 69, 22.1
			5.5 - 8.0: Clay. Red (4/6 on 2.5YR). Well compacted. Hard. Medium plasticity. SLIGHT ODOR.	
8	10	1.8	8.0 - 10.0: SAA.	18.7, 6.8
CLAY CANAL LINER FROM 1.3 - 1.8; 0.5 ft thick				
SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 (above CLAY CANAL LINER) and 4.0 - 5.0 (below CLAY CANAL LINER)				

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-05 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/22/2013 **Start Time** 0840 **End Time** 0852

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136038.8 **Northing** 598906.3 **Ground Surface Elevation (ft amsl)** 230.3

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	2.6	0.0 - 0.15: Loose black soil.	0.0, 3.4, 15.2, 19.3
			0.15 - 0.35: Heterogeneous interbedded clay, silt and sand. Clay is dark reddish gray (3/1 on 2.5YR), silt is reddish gray (5/1 on 2.5YR) and sand is red (5/6 on 2.5YR). Medium plasticity. Medium Stiff.	
			0.35 - 0.45: Angular gravel.	
			0.45 - 0.8: Loose black soil and organic matter; roots.	
			0.8 - 1.1: Silty clay. Dark brown (3/4 on 2.5YR). Medium stiff. Low plasticity.	
			1.1 - 2.0: Clay. Reddish brown (4/3 on 2.5YR). No plasticity. Loose/ Dry. Hard. CLAY CANAL LINER.	
			2.0 - 2.6: Clay. Reddish brown (4/3 on 5YR). Strong cementation/ compact. Black silt lenses present (~15%). Firm. Medium plasticity.	
			2.6 - 3.0: Silt and clay. Brown (5/3 on 7.5YR). SATURATED. SLIGHT ODOR.	
			3.0 - 4.0: Brown (4/2 on 7.5YR) clay. Black silt lenses. Firm. Medium plasticity. ODOR.	
4	8	3.75	4.0 - 6.6: SAA	21.7, 12.8, 11.3, 0.0
			6.6 - 7.2: Silt and some clay. Brown (5/3 on 7.5YR). Soft. SATURATED. ODOR.	
			7.2 - 7.8: Brown (5/4 on 7.5YR) clay. Firm. Medium plasticity. WET. ODOR	
			7.8 - 8.0: Clay. Yellowish red (4/6 on 5YR). Homogenous. Plastic. ODOR. WET.	
CLAY CANAL LINER FROM 1.1 - 2.0; 0.9 ft thick				
SOIL SAMPLES COLLECTED FROM 0.0 - 1.0 (above CLAY CANAL LINER) and 3.5 - 4.5 (below CLAY CANAL LINER)				

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-06 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/2122013 **Start Time** 0824 **End Time** 0836

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136054.9 **Northing** 598913.6 **Ground Surface Elevation (ft amsl)** 231.1

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	1.5	0.0 - 0.25: Black soil.	0.0
			0.25 - 0.75: Clay. Reddish brown (4/4 on 5YR). Poorly cemented. Non plastic. Hard. CLAY CANAL LINER.	
			0.75 - 1.4: Medium-grained sand. Loose. Black. Poorly sorted with some organic material.	
			1.4 - 2.0: Silt, fine grained sand and clay. Black (2.5/1 on 7.5YR). Soft. SATURATED.	
2	4	3.2	2.0 - 2.1: SAA	12.7, 15.6, 9.8, 1.2
			2.1 - 2.2: Angular gravel.	
			2.2 - 2.6: Clay and silt. Dark brown (3/2 on 7.5YR). Little amoutns of black (2.5/1 on 7.5YR) silt lenses. High plasticity. ODOR.	
			2.6 - 4.6: Clay. Reddish brown (4/3 on 7.5YR). High plasticity. Medium stiffness. ODOR.	
			4.6 - 5.6: Silty clay and some angular pebbles and coarse grained sand. Black (2.5/1 on 7.5YR). Soft. No plasticity. ODOR.	
			5.6 - 6.0: Clay. Reddish brown (4/3 on 7.5YR). Homogenous. Well cememnted. Hard. Very plastic. WET. ODOR.	
6	10	2.4	6.0 - 10.0: SAA. WET. ODOR.	0.0
CLAY CANAL LINER FROM 0.25 - 0.75; 0.50 ft thick				
SOIL SAMPLES COLLECTED FROM 0.0 - 1.0 (above CLAY CANAL LINER) and 2.5 - 3.5 (below CLAY CANAL LINER)				

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-07 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/22/2013 **Start Time** 0909 **End Time** 0919

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136076.5 **Northing** 598913.6 **Ground Surface Elevation (ft amsl)** 232.3

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.2	0.0 - 0.4: Gravel and large pebbles. Sandy matrix. Organic material. Black (2.5/1 on 5YR) and dark gray (4/1 on 5YR).	12.9, 20.3
			0.4 - 0.9: Clay and sand. Black (2.5/1 on 5YR). Low plasticity.	
			0.9 - 1.1: Loose soil/ sand with large sangular pebbles and organic material. Black (2.5/1 on 5YR)	
			1.1 - 1.7: Clay. Yellowish red (4/6 on 5YR). Medium plasticity. Some small silt lenses. Trace amounts of sub-rounded pebbles.	
			1.7 - 2.0: Interbedded layers (2-3mm thick) of clay and silt. Clay is dark reddish brown (3/4 on 5YR and yellowish red (5/6 on 5YR), has low plasticity and is poorly cemented. Silt is black (2.5/1 on 5YR).	
2	6	2.9	2.0 - 2.2: SAA.	96.7, 136, 211, 197
			2.2 - 2.4: Clay. Yellowish red (5/6 on 5YR). Low plasticity, poorly cemented. And some vary dark gray (3/1 on 5YR) sand.	
			2.4 - 4.1: Black (2.5/1 on 5YR) silt and gray (5/1 on 5YR) clay. Soft. No plasticity.	
			4.1 - 4.5: Clay. Dark grayish brown (4/2 on 10YR). Some silt. Medium stiffness. Low plasticity.	
			4.5 - 5.1: Clay. Dark brown (3/4 on 7.5YR). No silt. ODOR.	
			5.1 - 6.0: Black (2.5/1 on 5YR) silt and gray (5/1 on 5YR) clay. Soft. No plasticity.	
6	10	3.6	6.0 - 6.3: SAA. ODOR. WET.	82.1, 48.5, 47.2, 13.1
			6.3 - 10.0: Clay. Red (4/6 on 2.5YR). Homogenous. No silt. ODOR. WET.	
NO CLAY CANAL LINER DISCERNABLE				
SOIL SAMPLES COLLECTED FROM 1.5 - 2.5 ft bgs and 4.5 - 5.5 ft bgs				

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-08 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/22/2013 **Start Time** 0921 **End Time** 0932

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136073.1 **Northing** 598893.6 **Ground Surface Elevation (ft amsl)** 230.6

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	4	2.4	0.0 - 1.4: Loose black sand. Organic material. Some dark gray clay lenses (4/1 on 5YR).	5.1, 0.0, 19.7, 18.2
			1.4 - 1.85: Clay. Reddish yellow (6/8 on 5YR). Medium plasticity. Stiff.	
			1.85 - 2.15: Angular gravel within a clay matrix. Light brown (6/3 on 7.5YR)	
			2.15 - 2.7: Clay. Red (4/6 on 2.5YR). Hard. Loose/ poorly compacted. Not plastic. CLAY CANAL LINER. ODOR.	
			2.7 - 4.0: Clay. Dark reddish brown (3/3 on 2.5YR). 5-10mm thick zones of silt throughout clay. Dark reddish gray (3/1 on 2.5YR) silt. ODOR.	
4	8	3.4	4.0 - 5.2: SAA	12.3, 3.6, 0.0, 0.0
			5.2 - 5.7: Clay. Red (4/6 on 2.5YR). Stiff. Medium plasticity. ODOR.	
			5.7 - 6.4: Clay. Dark reddish brown (3/3 on 2.5YR). 5-10mm thick zones of silt throughout clay. Dark reddish gray (3/1 on 2.5YR) silt. ODOR.	
			6.4 - 8.0: Clay. Red (4/6 on 2.5YR). Well cemented. Stiff. Very plastic. Trace amounts of silt. SLIGHT ODOR	
8	10	2.5	8.0 - 10.0: SAA. WET. SLIGHT ODOR	0.0

CLAY CANAL LINER from 2.15 - 2.7; 0.55 ft thick

SOIL SAMPLES COLLECTED FROM 1.0 - 2.0 (above CLAY CANAL LINER) and 3.0 - 4.0 (below CLAY CANAL LINER)

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-09 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/22/2013 **Start Time** 1010 **End Time** 1022

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diameter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136101.2 **Northing** 598903.2 **Ground Surface Elevation (ft amsl)** 231.1

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.2	0.0 - 0.9: Black soil. Some silt. WET.	8.1, 6.7
			0.9 - 1.4: Clay. Brown (4/1 on 7.5YR). Some red (4/6 on 2.5YR) silt layers ~1-2mm thick. Medium plasticity.	
			1.4 - 2.0: Silty clay. Gray (5/1 on 5YR). Soft. No plasticity. WET.	
2	6	3.9	2.0 - 2.3: Clay. Reddish brown (4/3 on 2.5YR). Some black silt lens (<15% of core).	17.3, 17.1, 19.2, 16.1
			2.3 - 6.0: Clay. Brown (4/2 on 7.5YR). Soft. High plasticity. ODOR.	
6	10	3.7	6.0 - 7.5: SAA. WET. ODOR.	17.2, 11.8, 14.3,6.7
			7.5 - 8.1: Silty clay. Some angular gravel. SATURATED.	
			8.1 - 10.0: Clay. Brown (4/2 on 7.5YR). Soft. High plasticity. ODOR. WET.	

NO CLAY CANAL LINER DISCERNABLE

SOIL SAMPLES COLLECTED FROM 1.0 - 2.0 ft bgs and 3.5 - 4.5 ft bgs

* PID readings taken at 1.0 ft intervals

Sample Log

Boring SB03-10 **Project Name and No.** CSXT Brunswick Yard/ MD00043.0011.00004

Location Brunswick, Maryland **Date** 8/22/2013 **Start Time** 1024 **End Time** 1035

Total Depth Drilled 10 feet **Hole Diameter** 2 inches **Sampling interval** continuous

Length and Diamter of Sampling Device 4' / 2" **Type of Sampling Device** plastic liners

Drilling Method Direct Push **Drilling Fluid Used** -

Drilling Contractor Ground Zero **Driller** Corey Gamwell **Helpers** Justin McArdle and George Sorto

Prepared By L. Lamp **Hammer Weight** 810 lb **Hammer Drop** 42 ins.

Easting 1136093.9 **Northing** 598881.7 **Ground Surface Elevation (ft amsl)** 230.8

Coordinate data in MD SP NAD 83/91, NAVD88, ft

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Sample Description	PID (ppm)*
0	2	2.65	0.0 - 0.2: Clay, silt and sand. Brown (4/3 on 7.5YR). Medium plasticity. MOIST.	2.3, 7.1
			0.2 - Clay and sub-rounded pebbles (3-4 cm). Very dark gray (3/1 on 7.5YR).	
			0.4 - 0.9: Medium/ coarse grained, well rounded sand. Some angular pebbles and gravel. Light reddish brown (6/3 on 2.5YR) matrix, white (8/1 on 2.5YR) and reddish yellow (6/8 on 5Y) sand lenses and pebbles.	
			0.9 - 1.1: Loose black soil and some organic matter; roots	
			1.1 - 1.6: Lenticular clay layers that are reddish yellow (6/8 on 5YR) and brown (4/4 on 7.5YR). Hard. Low plasticity.	
			1.6 - 1.85: Angular gravel.	
			1.85 - 2.0: Silty dark gray clay (4/1 on 5YR) . MOIST. SLIGHT ODOR	
2	6	3.8	2.0 - 2.4: SAA	23.2, 18.1, 49.0, 56.2
			2.4 - 2.7: Clay. Brown (4/2 on 7.5YR). Well cemented. Soft. Very plastic. WET. ODOR.	
			2.7 - 3.0: Clay. Brown (4/2 on 7.5YR). Hard. Low plasticity.	
			3.0 - 3.4: Silty dark gray clay (4/1 on 5YR) . Very plstic. MOIST. SLIGHT ODOR	
			3.4 - 5.75: Clay. Brown (4/2 on 7.5YR). Very plastic. Some silt.	
			5.75 - 6.0: Clay. Red (4/6 on 2.5YR). ODOR.	
			6.4 - 7.5: Clay. Reddish brown (4/3 on 2.5YR). Well cemented. Stiff. Medium plasticity. WET. ODOR.	
			7.5 - 8.1: Silty clay. Some angular gravel. SATURATED.	
			8.1 - 10.0: Clay. Red (4/6 on 2.5YR). Well cemented. Trace silt. Plastic. Medium stiffness. WET. ODOR.	
NO CLAY CANAL LINER DISCERNABLE				
SOIL SAMPLES COLLECTED FROM 0.5 - 1.5 ft bgs and 5.0 - 6.0 ft bgs				

* PID readings taken at 1.0 ft intervals

ARCADIS

Appendix B

Groundwater Sampling Logs

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No.: MD000843.0010.00004
Site Location: Brunswick, MD | Date: 8/20/13
Well No.: PZ01-04 | Replicate No.: --- | Weather: clear
Sampling Personnel: KM | Sampling Time: Begin 1540 | End 1600

Purge Data

Stickup height: 0.35' ~~bgs~~ ags

Measuring Point (describe)	TOC - PVC
Sounded Well Depth (ft bmp)	10.05' bTOC
Depth to Water (ft bmp)	3.94' bTOC
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	
Casing Diameter	1"
Gallons in Well	
Gallons Purged Prior to Sampling	≈3.0 gal
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	~~bailer~~ Peristaltic
Sampling Method	~~bailer~~ Peristaltic
Purge Time	Begin _____ End _____

Field Parameters

		1	1V	2V	3V
Color		med. brown			
Odor		initial odor			
Appearance		turbid, moderate			
		~~upon~~ prior to sample			
pH (s.u.)		6.64			
Conductivity	(mS/cm) or	0.577			
	(µmhos/cm) [1]				
Temperature (°C)		22.42			
DO (mg/L)		0.80			
ORP (mV)		-45.3			
Turbidity (NTU)		—			
Time					
DTW (ft bmp)					

Remarks: Purged dry (≈3 gal) @ 1320. Sample @ 1540.
≈ 4.05' bTOC @ 1536.

Parameter	Container	No.	Preservative
VOCs + Oxygenates	40 mL VOA	3	HCl
~~GRO~~	40 mL VOA	2	HCl
~~DRO~~	1 L Amber	2	none
DRO w/SG cleanup	1 L Amber	2	none
SVOC	1L Amber	2	HCl

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No.: MD000843.0010.00004

Site Location: Brunswick, MD | Date: 8/20/13

Well No.: PZ01-09 | Replicate No.: --- | Weather: clear, hot

Sampling Personnel: KM | Sampling Time: Begin ~~1540~~ 1610 | End ~~16~~ 1630

Purge Data

Stickup height: 0.20' ags

Measuring Point (describe)	TOC (PVC)
Sounded Well Depth (ft bmp)	10.10' bTOC
Depth to Water (ft bmp)	1.40' bTOC
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	
Casing Diameter	1"
Gallons in Well	
Gallons Purged Prior to Sampling	~1.5 gal
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	~~bailer~~ peristaltic
Sampling Method	~~bailer~~ peri
Purge Time	Begin _____ End _____

Field Parameters

Color: med. brown

Odor: none

Appearance: moderate turbidity prior to sample

	1	1V	2V	3V
pH (s.u.)	6.71			
Conductivity (mS/cm) or (µmhos/cm) [1]	0.472			
Temperature (°C)	21.88			
DO (mg/L)	4.64			
ORP (mV)	-54.5			
Turbidity (NTU)				
Time				
DTW (ft bmp)				

Remarks: Purged dry (~1.5 gal) @ 1335, sample @ 1610. ≅ 4.92' bTOC @ 1600.

Parameter	Container	No.	Preservative
VOCs + Oxygenates	40 mL VOA	3	HCl
GRO	40 mL VOA	2	HCl
DRO	1 L Amber	2	none
DRO w/SG cleanup	1 L Amber	~~+~~ 2	none
SVOC	1 L AMBER	2	HCl

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/4" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No.: MD000843.0010.00004
Site Location: Brunswick, MD | Date: 8/21/13
Well No.: PZ02-04 | Replicate No.: --- | Weather: clear/hot
Sampling Personnel: JR | Sampling Time: Begin: — | End: 0935

Purge Data

stickup: 0.80' ags

Measuring Point (describe)	TOC (PVC)
Sounded Well Depth (ft bmp)	10.10' bTOC
Depth to Water (ft bmp)	2.22' bTOC
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	7.88
Casing Diameter	1" ID
Gallons in Well	~0.47
Gallons Purged	
Prior to Sampling	~2.0 GALS
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	~~bailer~~ Peristaltic
Sampling Method	~~bailer~~ Peri
Purge Time	Begin 0845 End 0850

Field Parameters

	prior to sample	1	1V	2V	3V
Color	LT BRWN				
Odor	NONE				
Appearance	TURBID				
pH (s.u.)	6.58	—			
Conductivity (mS/cm) or (µmhos/cm) [1]	0.757				
Temperature (°C)	21.26				
DO (mg/L)	7.07				
ORP (mV)	13.6				
Turbidity (NTU)	—				
Time	0950				
DTW (ft bmp)	—				

Remarks:

Parameter	Container	No.	Preservative
VOCs + Oxygenates	40 mL VOA	3	HCl
GRO	40 mL VOA	2	HCl
DRO	1 L Amber	2	none
DRO w/SG cleanup	1 L Amber	1	none

PID Reading: N/A

Well Casing Volumes

Gal./Ft.			
1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1" = 0.04	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No.: MD000843.0010.00004
Site Location: Brunswick, MD | Date: 8/21/13
Well No.: PZ02-08 | Replicate No.: --- | Weather: PRTLY CLOUDY/83°F
Sampling Personnel: JR/LL | Sampling Time: Begin: ——— End: 1400

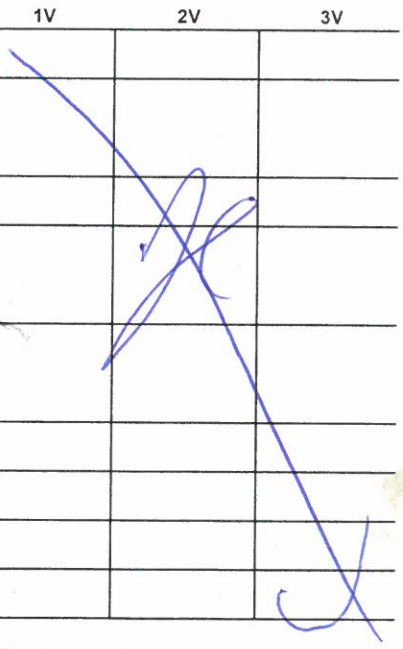
Purge Data

STICKUP = 0.30' AGS

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	10.10
Depth to Water (ft bmp)	2.03
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	8.07
Casing Diameter	1" ID
Gallons in Well	0.48
Gallons Purged Prior to Sampling	~~~0.50~~ ~0.40 GAL
Pump Intake Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	~~bailer~~ PERI. PUMP
Sampling Method	~~bailer~~ PERI. PUMP
Purge Time	Begin 1156 End 1158

Field Parameters

	I	1V	2V	3V
Color	LT BRWN.			
Odor	SLIGHT			
Appearance	TURBID			
pH (s.u.)	6.55			
Conductivity (mS/cm) or (µmhos/cm) [1]	0.682			
Temperature (°C)	22.03			
DO (mg/L)	6.00			
ORP (mV)	-13.0			
Turbidity (NTU)	—			
Time	1408			
DTW (ft bmp)	—			



Remarks: 8/21/13 WELL WENT DRY AFTER ~0.40 GAL @ 1158 ON 8/21/13. ALLOWED RECHARGE X 2 (~0.40 GAL H_2O DISCHARGED EACH RECOVERY). (VOAS +1 AMBER COMPLETE)
8/22/13 0904 SAMPLED 1 AMBER, 0905 WELL DRY ALLOWED RECHARGE
1115 SAMPLED 1 AMBER, 1116 WELL DRY ALLOWED RECHARGE

Parameter		Container	No.	Preservative
VOCs + Oxygenates	1205 PZ02-08	40 mL VOA	3	HCl
GRO	COMPLETE	40 mL VOA	2	HCl
DRO	(2-DRO 1-8270	1 L Amber	2	none
DRO w/SG cleanup	5-VOA)	1 L Amber	1	none

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

✓3 VOAS VOCs
✓2 VOAS GRO
(2) → 4 AMBERS DRO ~~(1 COMPLETE)~~
2 AMBERS 8270 (1 COMPLETE)

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No.: MD000843.0010.00004

Site Location: Brunswick, MD | Date: 8/22/13

Well No.: PZ03-08 | Replicate No.: --- | Weather: ~~PRTLY~~ CLOUDY / 80°F / HUMID

Sampling Personnel: JR | Sampling Time: Begin: ____ End: 1308

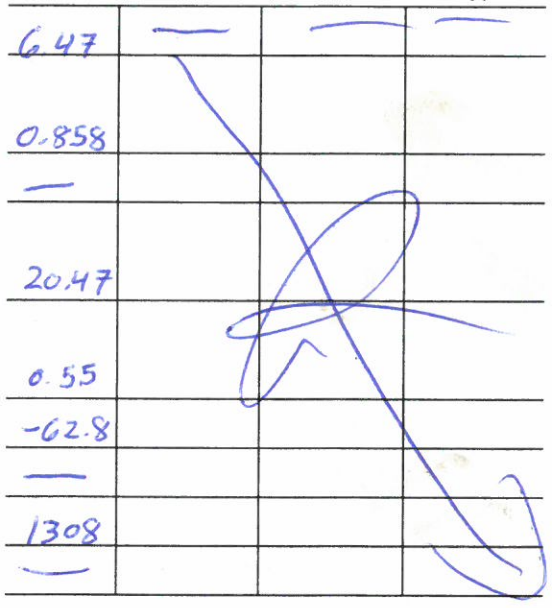
Purge Data

STICK UP = 0.30' AGS

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	10.10
Depth to Water (ft bmp)	2.34
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	7.76
Casing Diameter	1"
Gallons in Well	~ 0.47
Gallons Purged	
Prior to Sampling	~ 1.5+
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	~~bailer~~ PERI-PUMP
Sampling Method	~~bailer~~ ↓
Purge Time	Begin 1303 End 1305

Field Parameters

	I	1V	2V	3V
Color	LT BRWN			
Odor	SLIGHT TO SLGHTLY MOD.			
Appearance	TURBID			
pH (s.u.)	6.47	—	—	—
Conductivity (mS/cm) or	0.858			
(µmhos/cm) [1]	—			
Temperature (°C)	20.47			
DO (mg/L)	0.55			
ORP (mV)	-62.8			
Turbidity (NTU)	—			
Time	1308			
DTW (ft bmp)	—			



Remarks:

Parameter	Container	No.	Preservative
VOCs + Oxygenates	40 mL VOA	3	HCl
GRO	40 mL VOA	2	HCl
DRO	1 L Amber	2	none
DRO w/SG cleanup	1 L Amber	~~1~~	none
SVOC	1 L Amber	2	HCl

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/2" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No.: MD000843.0010.00004

Site Location: Brunswick, MD | Date: 8/22/13

Well No.: PZ03-04 | Replicate No.: --- | Weather: PRTLY CLOUDY/82°F/HUMID

Sampling Personnel: JR | Sampling Time: Begin: — | End: 1230

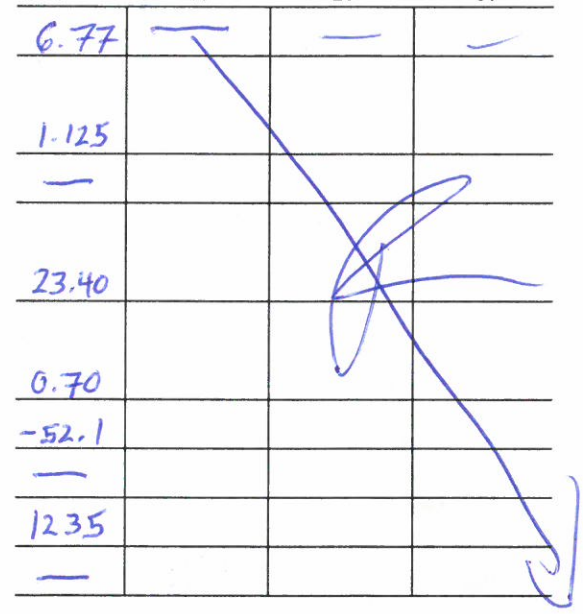
Purge Data

STICKUP = FLUSH W/ GS

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	9.40
Depth to Water (ft bmp)	1.23
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	8.37
Casing Diameter	1"
Gallons in Well	~0.5 GAL
Gallons Purged	
Prior to Sampling	~0.3 GAL
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	~~bailer~~ PERI. PUMP
Sampling Method	~~bailer~~ ↓
Purge Time	Begin 0816 End 0818

Field Parameters

	I	1V	2V	3V
Color	BRWN			
Odor	NONE			
Appearance	VRY. TURBID			
pH (s.u.)	6.77	—	—	—
Conductivity (mS/cm) or	1.125			
(µmhos/cm) [1]	—			
Temperature (°C)	23.40			
DO (mg/L)	0.70			
ORP (mV)	-52.1			
Turbidity (NTU)	—			
Time	1235			
DTW (ft bmp)	—			



Remarks: 8/22/13 WELL WENT DRY AFTER ~0.3 GAL @ 0818, ALLOWED RECHARGE. 1230 SAMPLE 5 VOAS & ~~1~~ 1/4 LITER HCL AMBER, WELL DRY @ 1231 ALLOWED RECHARGE. 1330 SAMPLED ~1/4 OF SAME LITER HCL AMBER, WELL DRY @ 1331, ALLOWED RECHARGE 8/23/13 - SAMPLE #COLLECT 1.5 L H2O FOR SAMPLING

Parameter	Container	No.	Preservative
VOCs + Oxygenates	40 mL VOA	3	HCl
GRO	40 mL VOA	2	HCl
DRO	1 L Amber	~~2~~ 1 *	none
~~DRO w/SG cleanup~~	~~1 L Amber~~	~~1~~	~~none~~
SVOC	1 L AMBER	1 *	HCl

WELL DRY @ 0945 ABANDONED

PID Reading: N/A

* ONLY GOT 1 AMBER

Well Casing Volumes

Gal./Ft.			
1 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1 1/4" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Appendix C

Survey Report

Exhibit A-2
Survey Report

SURVEY REPORT

LOCATION: CSX Brunswick Yard **DATE:** 10 September 2013

SITE: Brunswick, Maryland

SURVEYOR: C. Allen Paugh, Kci Technologies Inc. Laurel Md.

SURVEY DATUMS:

Horizontal Coordinates: NAD 83/91, US Feet

Vertical Elevations: NAVD88, US Feet

SOFTWARE: None, #s are direct from NGS stations by gps

SURVEY DATA:

Point #	Northing	Easting	Measuring Point Elevation	Grd EL / T/ Lid	Location ID	Notes
9353	599429.2	1134997.5		229.7	SB01-01	8-19-13
9355	599407.7	1135040.7		230.1	SB01-02	8-19-13
9354	599427.0	1135040.3		230.1	SB01-03	8-19-13
9356	599398.3	1135091.0		229.5	SB01-04	PZ01-04
9359	599365.6	1135142.6		229.8	SB01-05	8-19-13
9357	599384.3	1135153.6		229.9	SB01-06	8-19-13
9360	599352.6	1135178.8		229.6	SB01-07	
9361	599367.0	1135187.9		229.8	SB01-08	
9362	599332.9	1135241.4		229.5	SB01-09	

Exhibit A-2
Survey Report

9363	599323.0	1135281.1	229.4	SB01-10	
9366	599194.2	1135539.2	229.5	SB02-01	
9367	599210.4	1135549.3	230.0	SB02-02	
9368	599189.3	1135585.9	230.6	SB02-03	
9370	599171.8	1135577.8	229.8	SB02-04	
9372	599165.2	1135616.8	230.4	SB02-05	
9371	599152.9	1135609.3	230.0	SB02-06	
9373	599152.7	1135641.7	230.2	SB02-07	
9374	599141.6	1135633.4	229.9	SB02-08	PZ
9375	599133.1	1135668.8	230.0	SB02-09	
9376	599122.2	1135659.1	229.8	SB02-10	
9390	598943.3	1136014.7	229.7	SB03-01	
9389	598928.8	1136003.9	229.4	SB03-02	
9386	598931.7	1136032.3	229.9	SB03-03	
9388	598917.2	1136023.5	229.6	SB03-04	
9387	598906.3	1136038.8	230.3	SB03-05	
9384	598913.6	1136054.9	231.1	SB03-06	
9382	598913.6	1136076.5	232.3	SB03-07	
9383	598893.6	1136073.1	230.6	SB03-08	
9381	598903.2	1136101.2	231.1	SB03-09	
9380	598881.7	1136093.9	230.8	SB03-10	

Exhibit A-2
Survey Report

9395	599155.1	1135665.9	234.15	234.62	WELL NPS	MW18
9397	599269.2	1135472.5	240.88	237.3 / 240.94	WELL	MW16
9400	599095.1	1135801.5	242.65	240.1 / 243.02	WELL	MW12

NOTE:

(1) The following NGS control points have been used for this survey:

JV3191 83/91 N 39-19-08 83/91 W 76-37-36 1988 Elev. 265.49

GAIT 83/91 N 534457.86 83/91 E 1249651.23 1988 Elev. 461.7

HAG2 83/91 N 687962.26 83/91 E 1110970.52 1988 Elev. N/A

(2) Well lids are approximately level with ground.

(3) Measured point is top of well pipe under lid.

(4) Elevations at soil boring points are ground elevations.

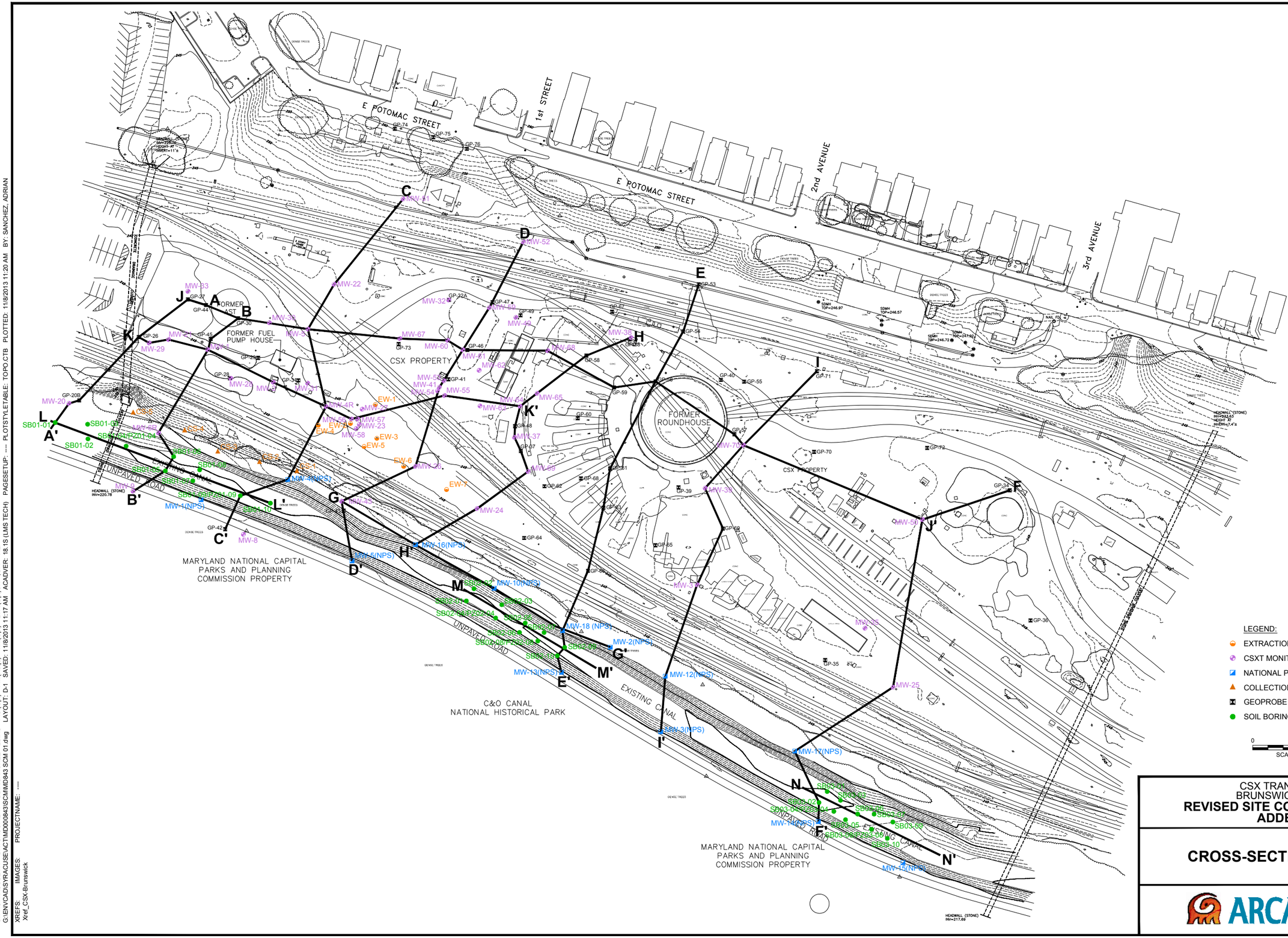
STATE OF MARYLAND
CARROLL ALLEN PAUGH
NO. 475
REGISTERED
PROPERTY LINE SURVEYOR

C. Allen Paugh
9/10/13

ARCADIS

Appendix D

Geologic Cross Sections



CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

CROSS-SECTION LOCATIONS

ARCADIS

FIGURE
D-1

CITY:SYRACUSE-NY DIV/GROUP:ENV DB:A.SANCHEZ LD:AS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON="OFF="REF*
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XREFS: IMAGES: PROJECTNAME: ----
Xref_CSX-Brunswick

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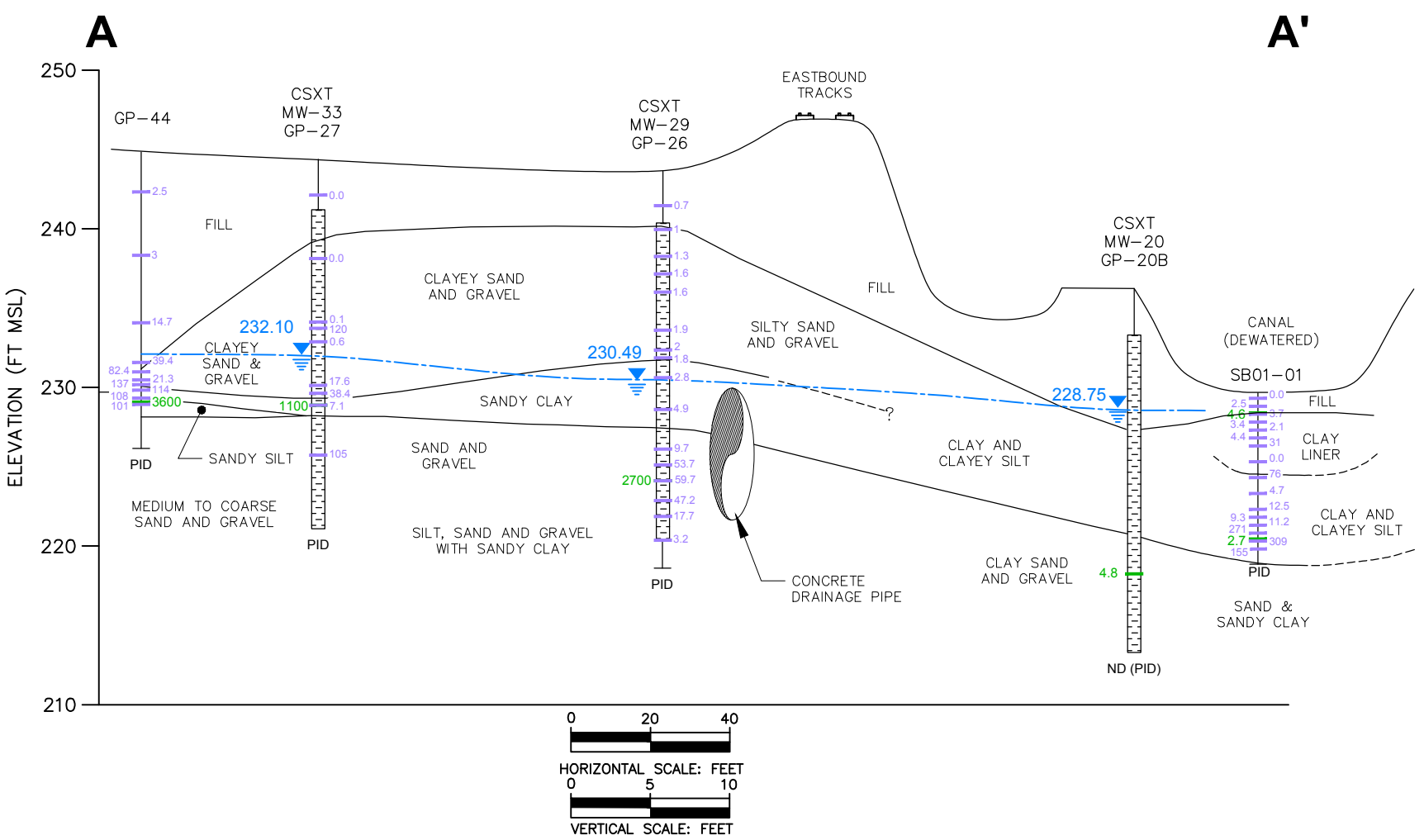
G:\ENVCAD\SYRACUSE\ACT\MD000843\SCM\MD843 SCM Att3.dwg LAYOUT: D-2 SAVED: 11/14/2013 4:44 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ACAD.CTB PLOTTED: 11/14/2013 4:45 PM BY: SANCHEZ, ADRIAN
XREFS: IMAGES: PROJECTNAME: ----



LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

101 — SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

2700 — TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

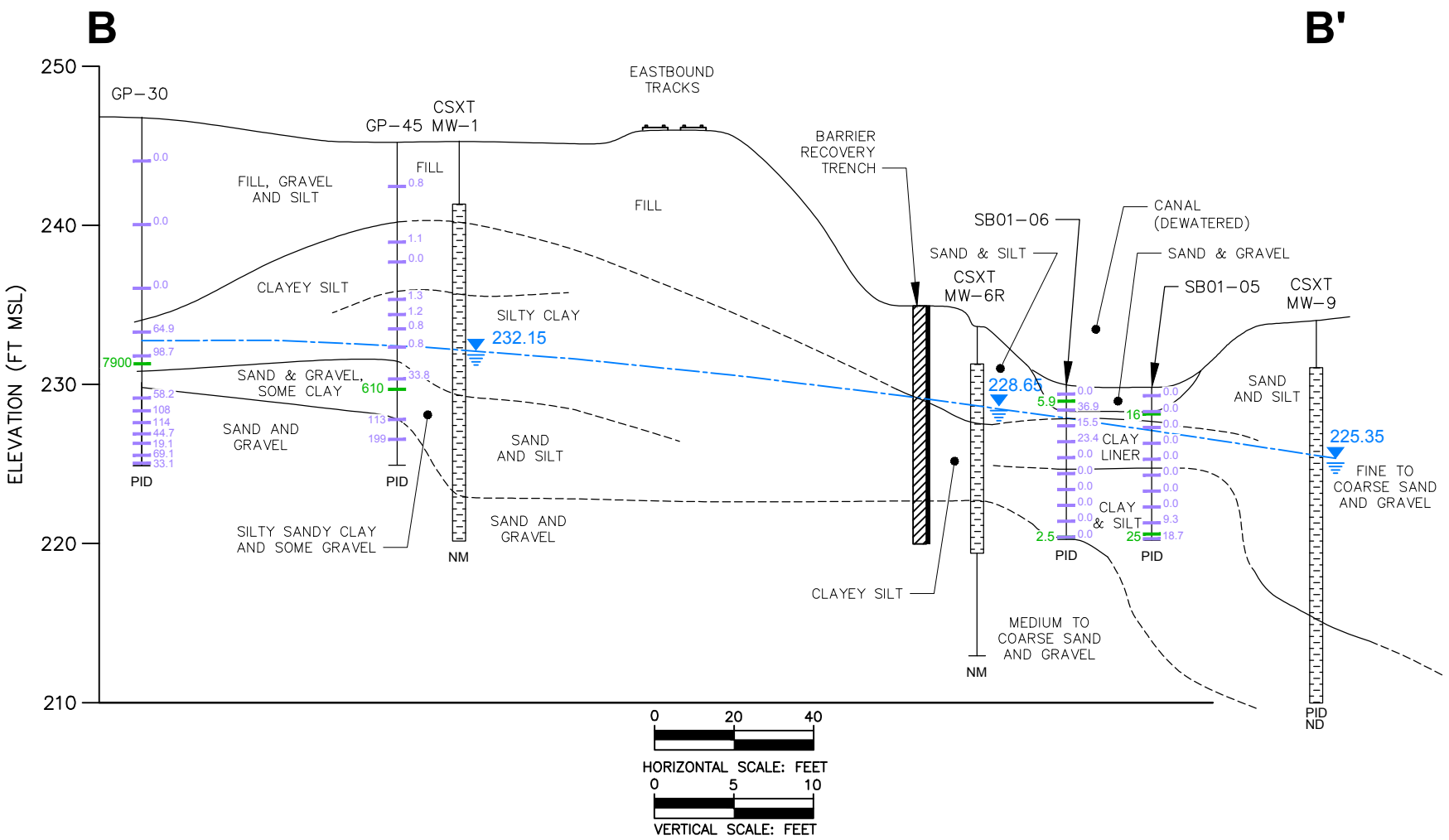
1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. DIRECT PUSH SOIL BORING (SB01-01) INSTALLED ON AUGUST 19, 2012
5. FT AMSL = FEET ABOVE MEAN SEA LEVEL
6. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION A-A'

ARCADIS

FIGURE
D-2



LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

33.1 — SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

610 — TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. DIRECT PUSH SOIL BORING (SB01-06 AND SB01-05) INSTALLED ON AUGUST 19, 2012
5. FT AMSL = FEET ABOVE MEAN SEA LEVEL
6. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION B-B'

ARCADIS

FIGURE
D-3

CITY:SYRACUSE DIV/GROUP:ENV DB:A.SANCHEZ LD:AS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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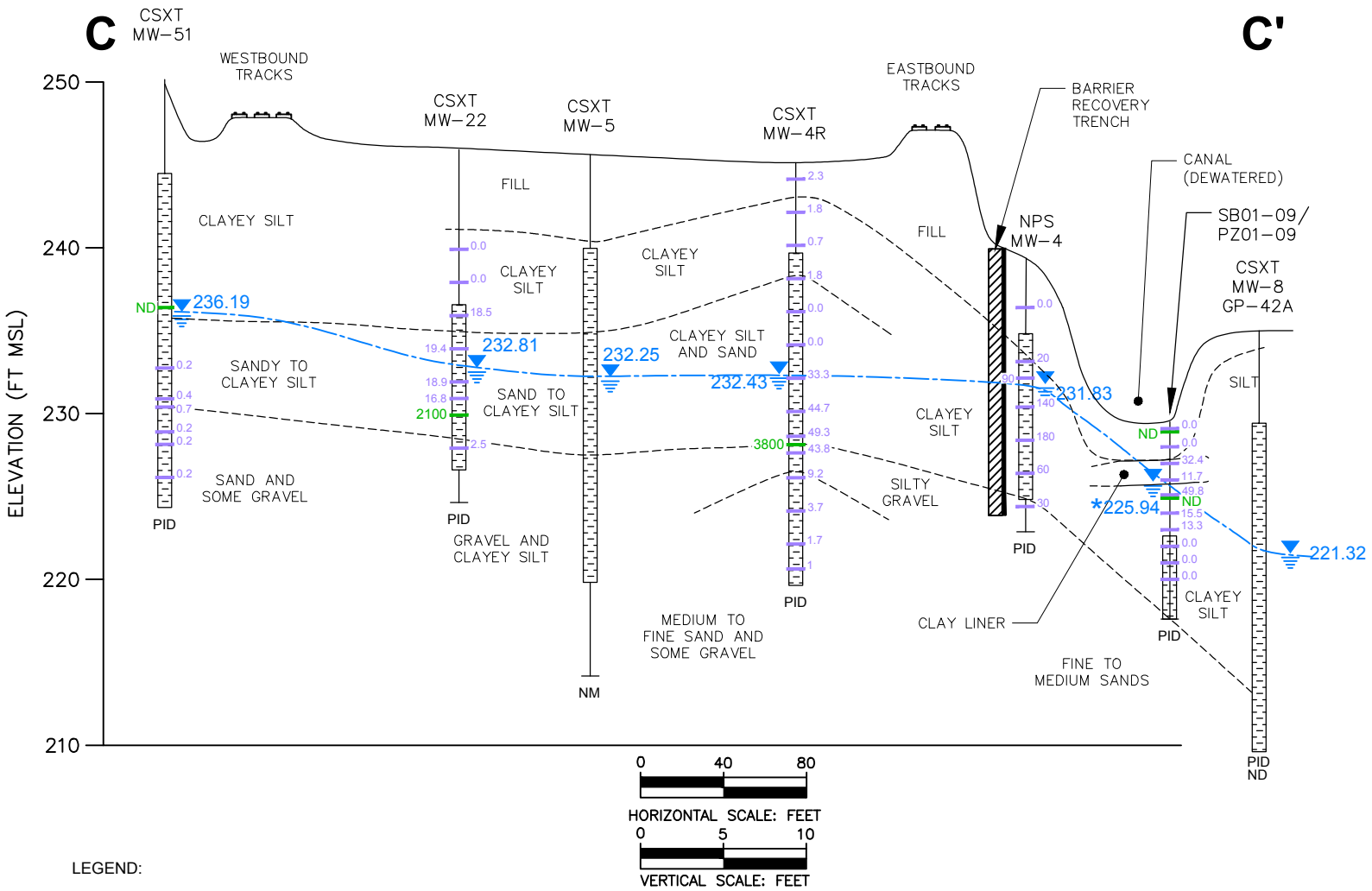

LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013) (* PZ01-09 WATER LEVEL MEASURED AUGUST 21, 2013)

2.5 SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

2100 TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. DIRECT PUSH SOIL BORING (SB01-09/PZ01-09) INSTALLED ON AUGUST 20, 2013
5. FT AMSL = FEET ABOVE MEAN SEA LEVEL
6. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION C-C'

ARCADIS

FIGURE
D-4

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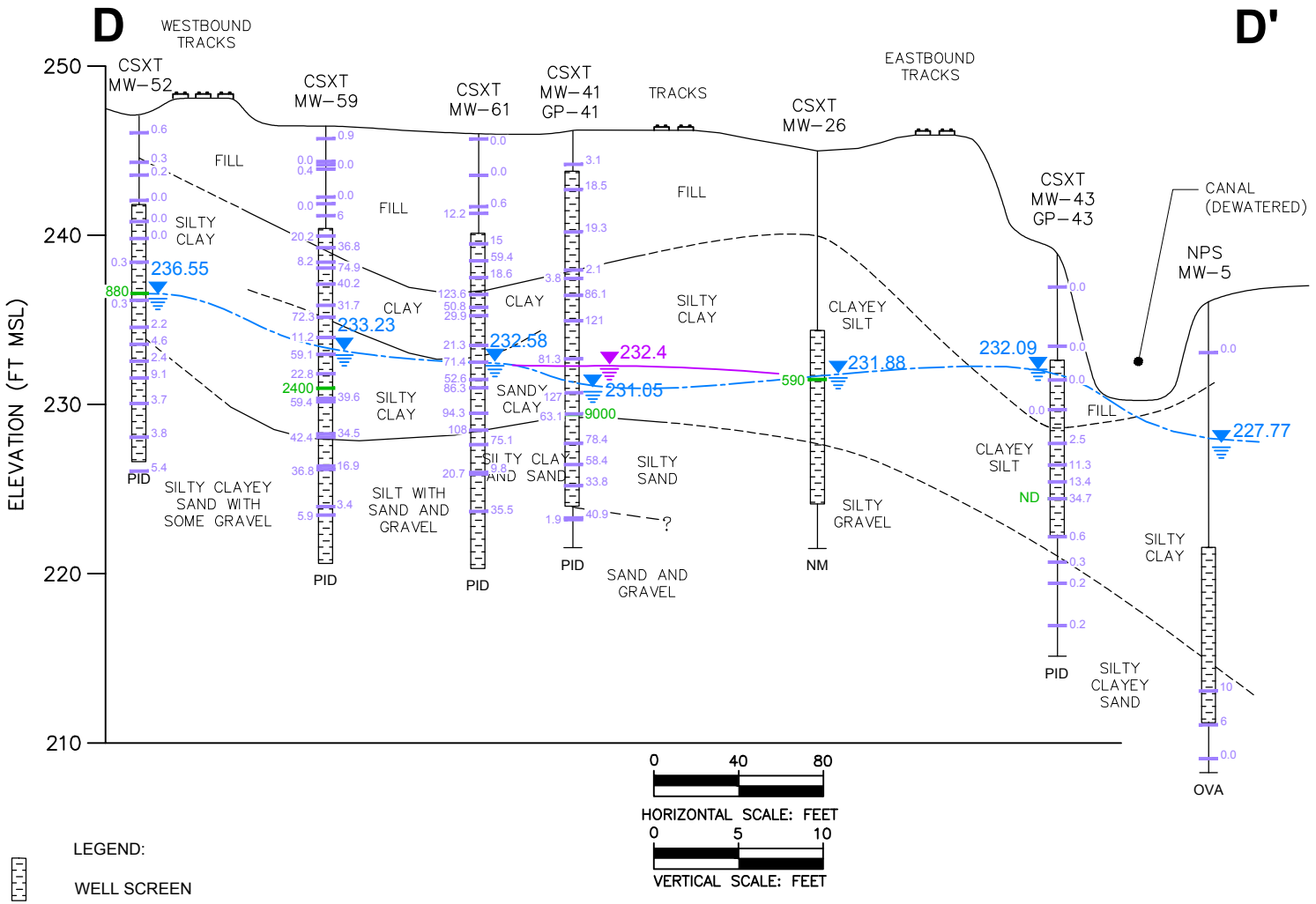


LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

LIQUID PHASE HYDROCARBON ELEVATION (FT AMSL, JANUARY 11, 2013)

5.9 SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

880 TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

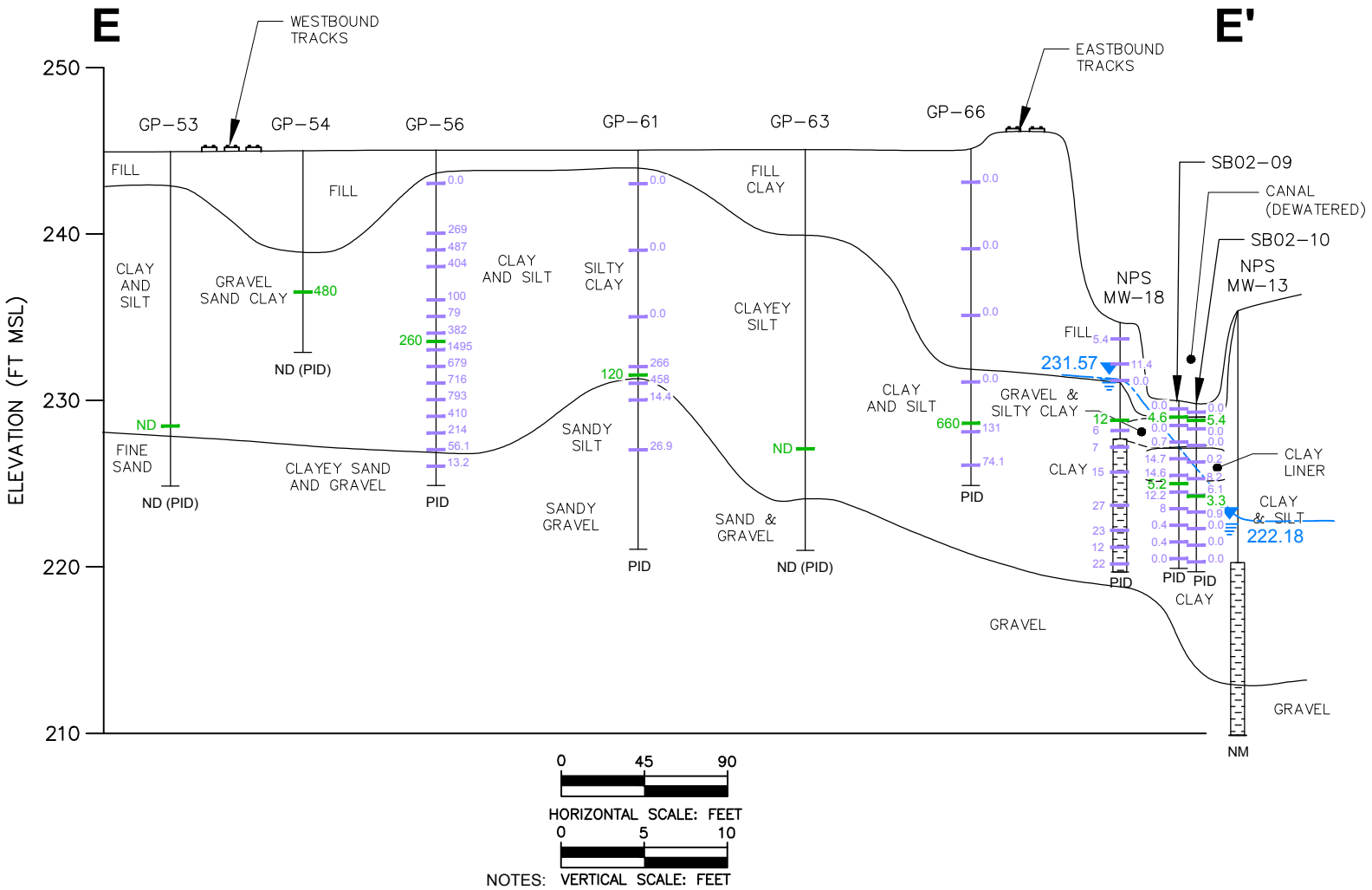
1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. FT AMSL = FEET ABOVE MEAN SEA LEVEL
5. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION D-D'

ARCADIS

FIGURE
D-5



LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, AUGUST 21, 2013)

382 — SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

480 — TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. DIRECT PUSH SOIL BORING (SB02-09 AND SB02-10) INSTALLED ON AUGUST 21, 2013
5. NPS MW-18 INSTALLED ON JUNE 24, 2013
6. FT AMSL = FEET ABOVE MEAN SEA LEVEL
7. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION E-E'

ARCADIS

FIGURE
D-6

CITY:SYRACUSE DIV/GROUP:ENV DB:A.SANCHEZ LD:AS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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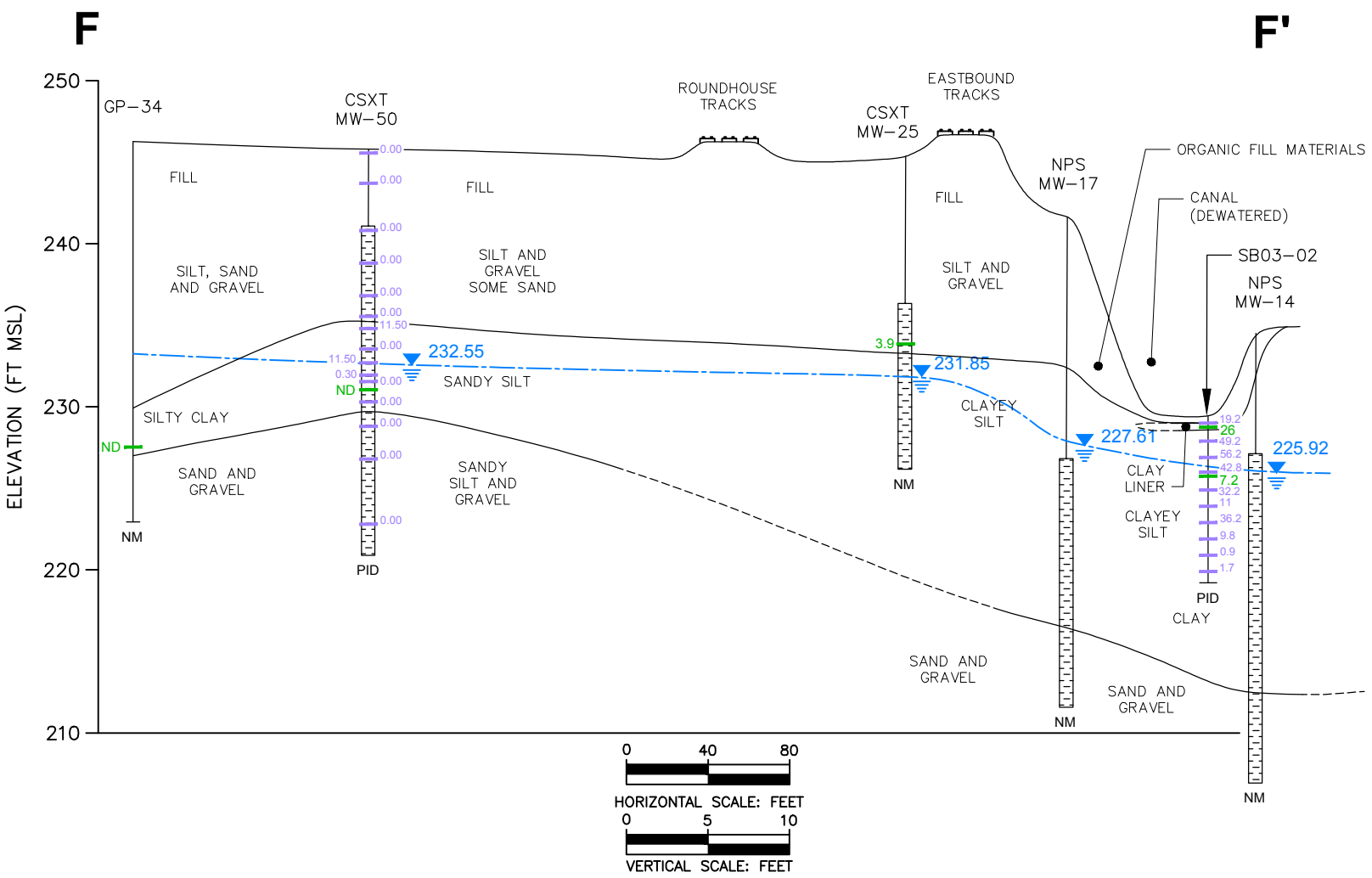

LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

0.0 SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

3.9 TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. DIRECT PUSH SOIL BORING (SB03-02) INSTALLED ON AUGUST 21, 2013
5. FT AMSL = FEET ABOVE MEAN SEA LEVEL
6. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION F-F'

ARCADIS

FIGURE
D-7

CITY:SYRACUSE DIV/GROUP:ENV DB:A.SANCHEZ LD:AS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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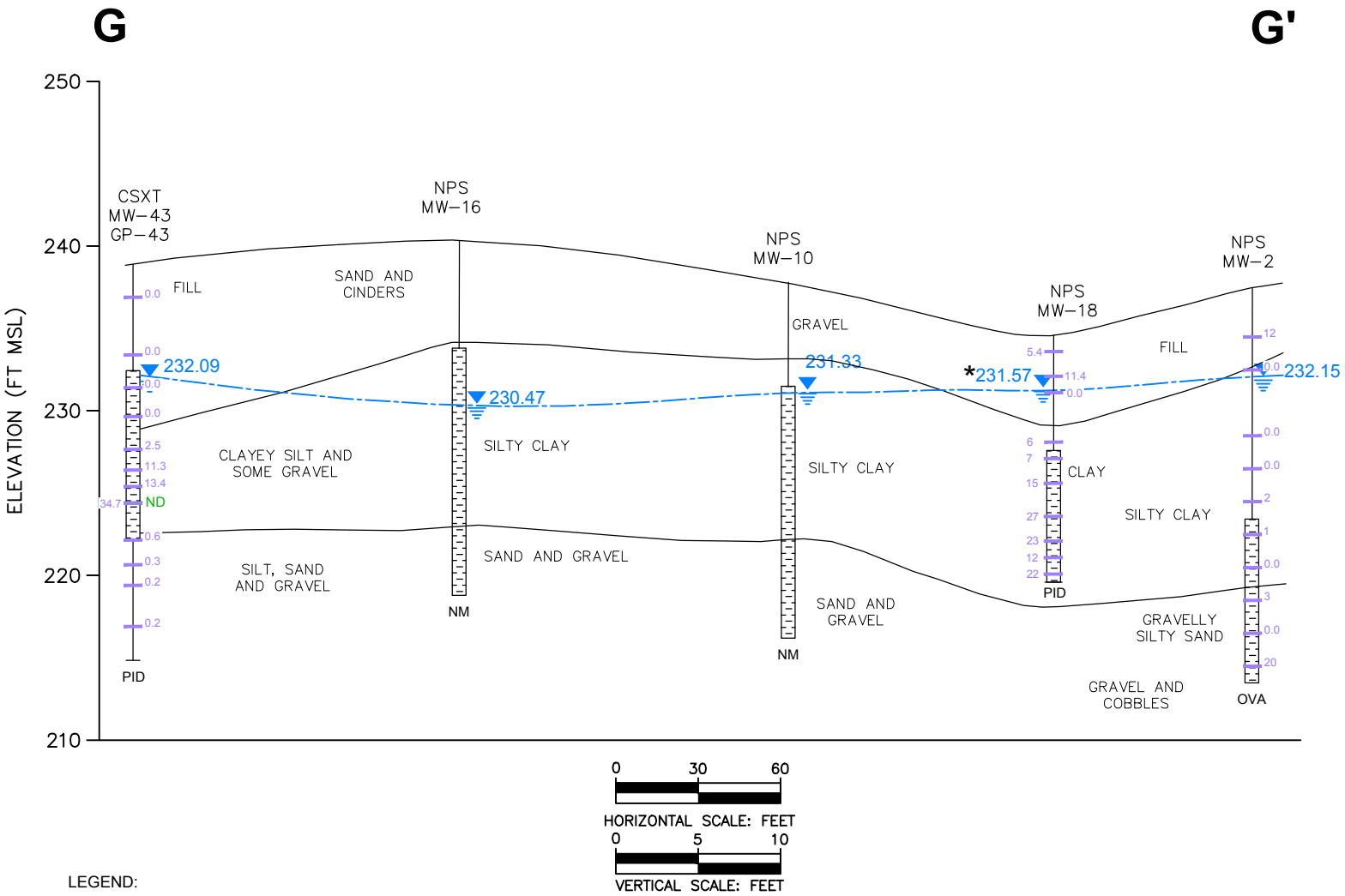

LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013) (* WATER LEVEL MEASURED AUGUST 21, 2013)

11.3 — SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

ND — TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. FT AMSL = FEET ABOVE MEAN SEA LEVEL
5. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION G-G'

ARCADIS

FIGURE
D-8

CITY:SYRACUSE DIV/GROUP:ENV DB:A.SANCHEZ LD:AS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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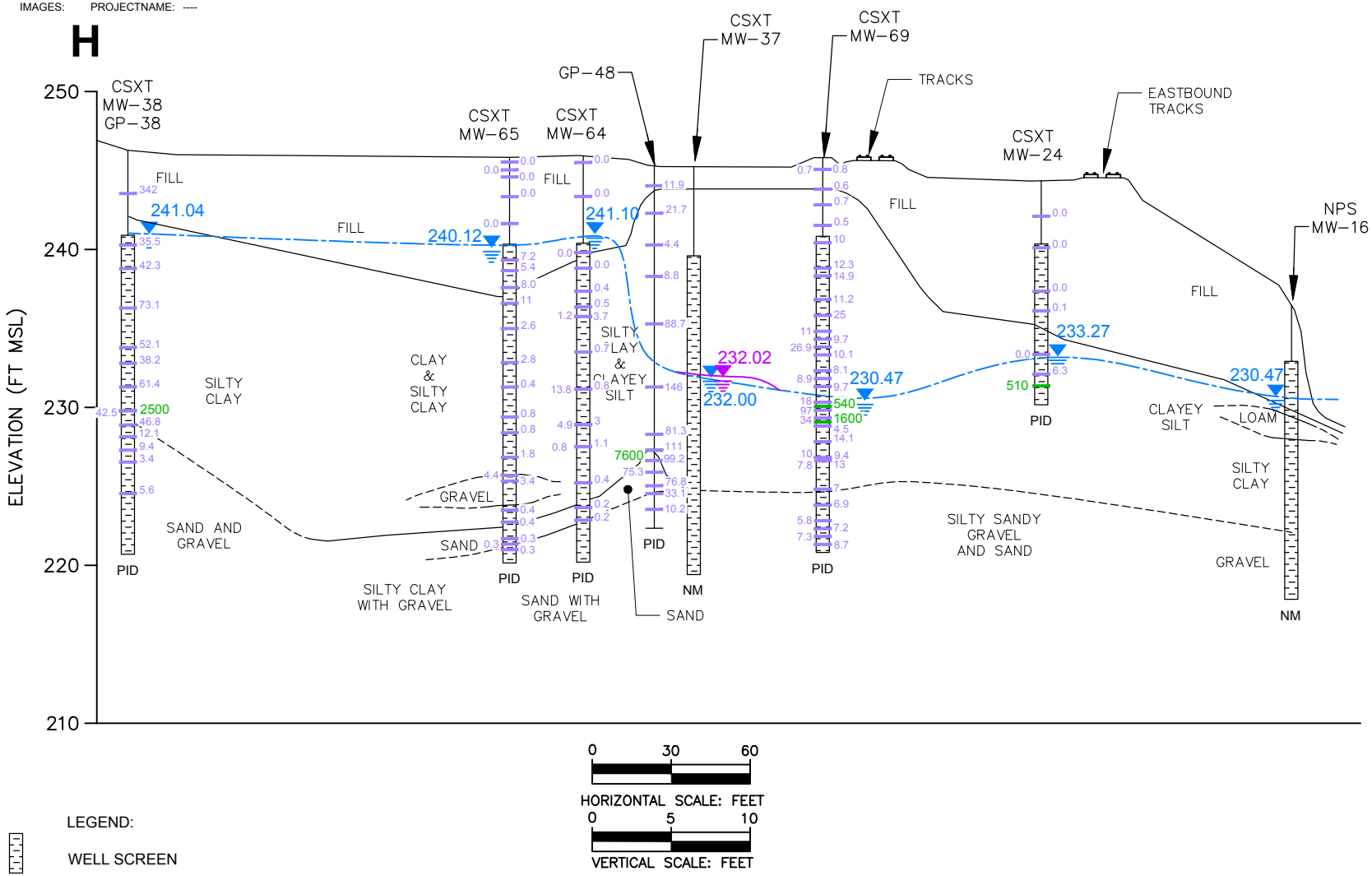

LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

LIQUID PHASE HYDROCARBON ELEVATION (FT AMSL, JANUARY 11, 2013)

61.4 — SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID], FLAME IONIZATION DETECTOR [FID], ORGANIC VAPOR ANALYZER [OVA])

2500 — TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. NM = PID/FID/OVA READINGS NOT COLLECTED DURING BORING
3. PPM = PARTS PER MILLION
4. FT AMSL = FEET ABOVE MEAN SEA LEVEL
5. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION H-H'

ARCADIS

FIGURE
D-9

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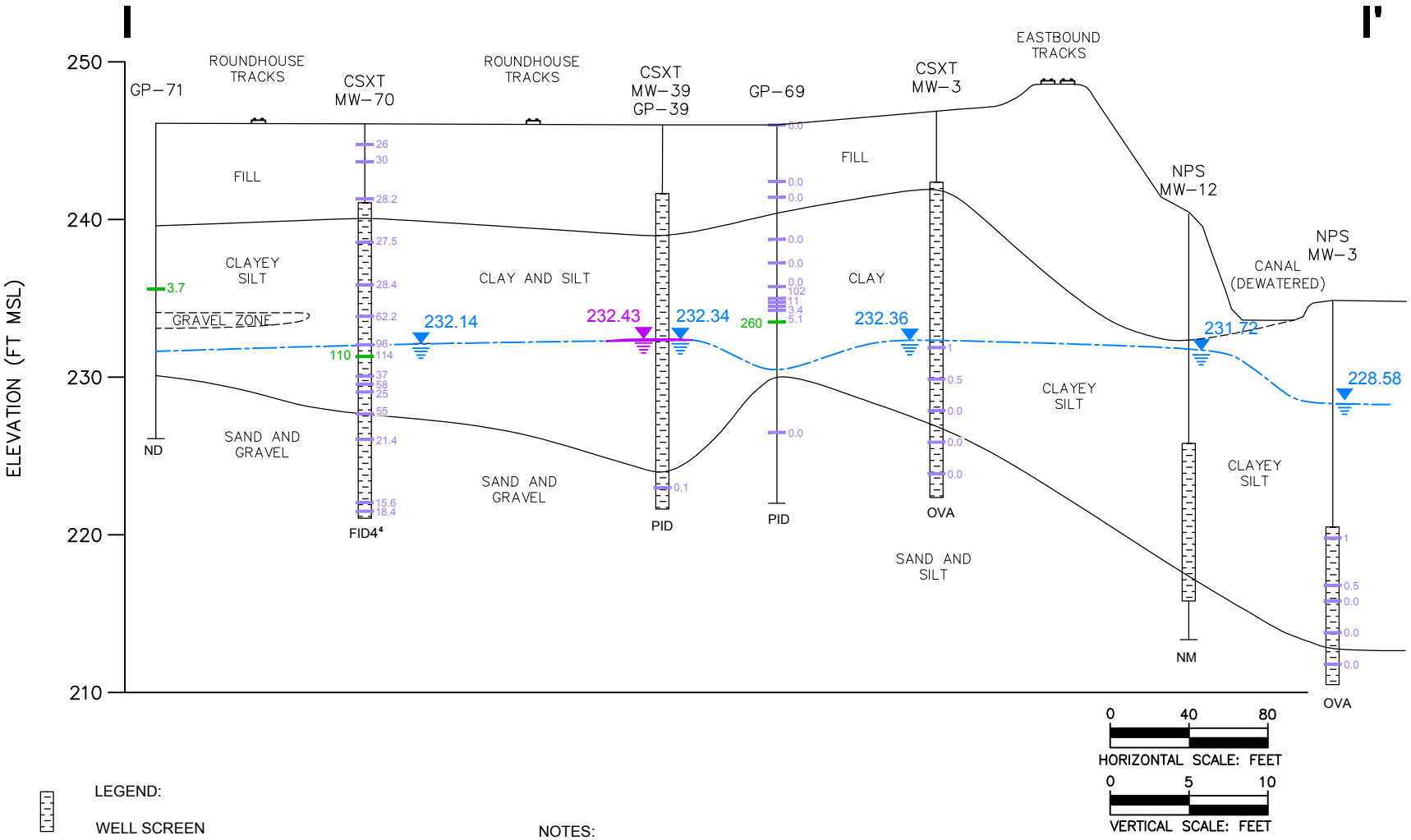


LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

LIQUID PHASE HYDROCARBON ELEVATION (FT AMSL, JANUARY 11, 2013)

SELECTED SOIL SCREENING CONCENTRATION, PPM:
5.10 PHOTOIONIZATION DETECTOR [PID]
5.10 FLAME IONIZATION DETECTOR [FID]
5.10 ORGANIC VAPOR ANALYZER [OVA]

3.70 TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

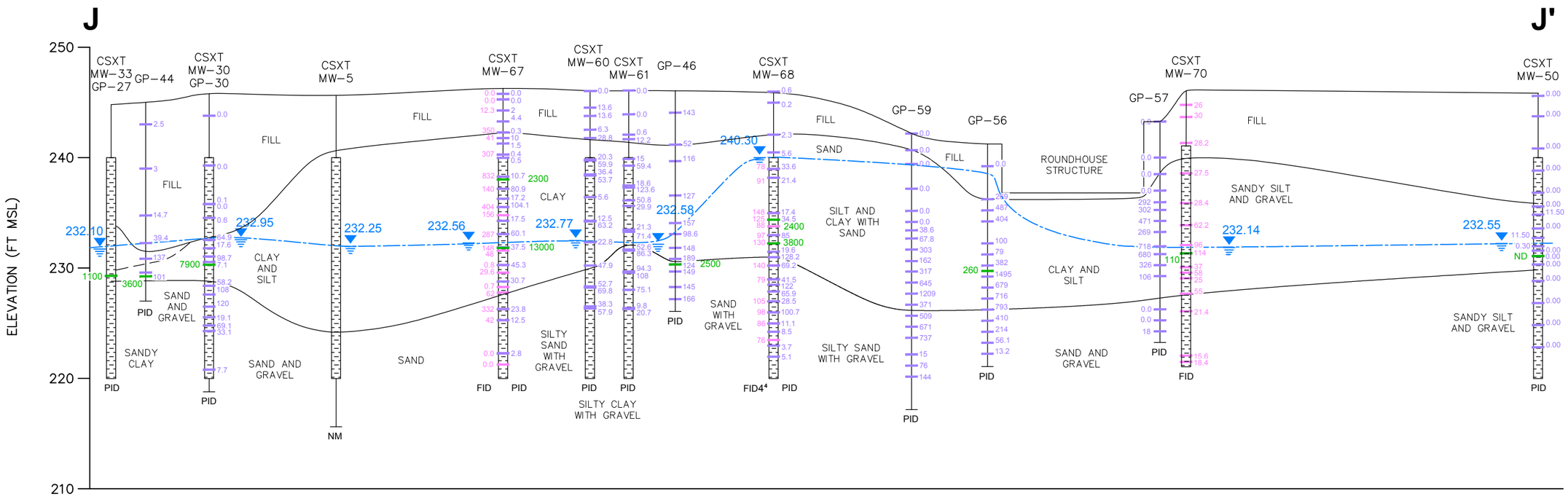
1. NM = PID/FID/OVA READINGS AT 0.0 PPM DURING BORING.
2. NM = PID/FID/OVA READING NOT COLLECTED DURING BORING.
3. PPM = PARTS PER MILLION.
4. FID CONCENTRATIONS MEASURED AT MW-70 SHOULD BE CONSIDERED QUALITATIVE DUE TO OUT-OF-RANGE AMBIENT AIR CALIBRATION.
5. FT AMSL = FEET ABOVE MEAN SEA LEVEL
6. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION I-I'

ARCADIS

FIGURE
D-10



LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

LIQUID PHASE HYDROCARBON ELEVATION (FT AMSL, JANUARY 11, 2013)

SELECTED SOIL SCREENING CONCENTRATION, PPM:
5.10 PHOTOIONIZATION DETECTOR [PID]
5.10 FLAME IONIZATION DETECTOR [FID]
5.10 ORGANIC VAPOR ANALYZER [OVA]

3.70 TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. NM = PID/FID/OVA READINGS AT 0.0 PPM DURING BORING.
2. NM = PID/FID/OVA READING NOT COLLECTED DURING BORING.
3. PPM = PARTS PER MILLION.
4. FID CONCENTRATIONS MEASURED AT MW-68 SHOULD BE CONSIDERED QUALITATIVE DUE TO OUT-OF-RANGE AMBIENT AIR CALIBRATION.
5. FT AMSL = FEET ABOVE MEAN SEA LEVEL
6. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION J-J'

ARCADIS

FIGURE
D-11

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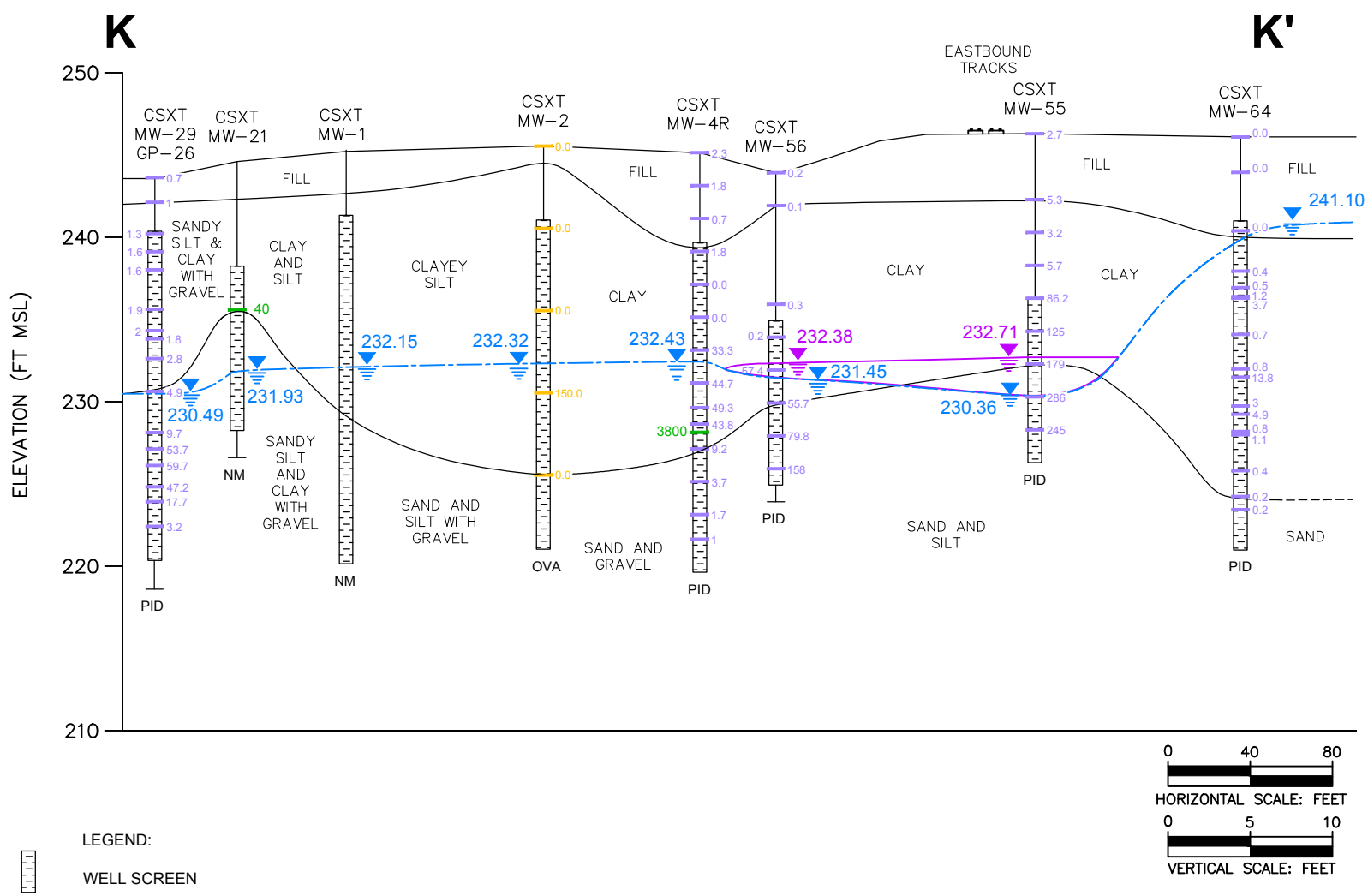

LEGEND:

WELL SCREEN

GROUNDWATER ELEVATION (FT AMSL, JANUARY 11, 2013)

LIQUID PHASE HYDROCARBON ELEVATION (FT AMSL, JANUARY 11, 2013)

SELECTED SOIL SCREENING CONCENTRATION, PPM:
5.10 PHOTOIONIZATION DETECTOR [PID]
5.10 FLAME IONIZATION DETECTOR [FID]
5.10 ORGANIC VAPOR ANALYZER [OVA]

3.70 TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. NM = PID/FID/OVA READINGS AT 0.0 PPM DURING BORING.
2. NM = PID/FID/OVA READING NOT COLLECTED DURING BORING.
3. PPM = PARTS PER MILLION.
4. FT AMSL = FEET ABOVE MEAN SEA LEVEL
5. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION K-K'

ARCADIS

FIGURE
D-12

CITY:SYRACUSE DIV/GROUP:ENV DB:A.SANCHEZ LD:AS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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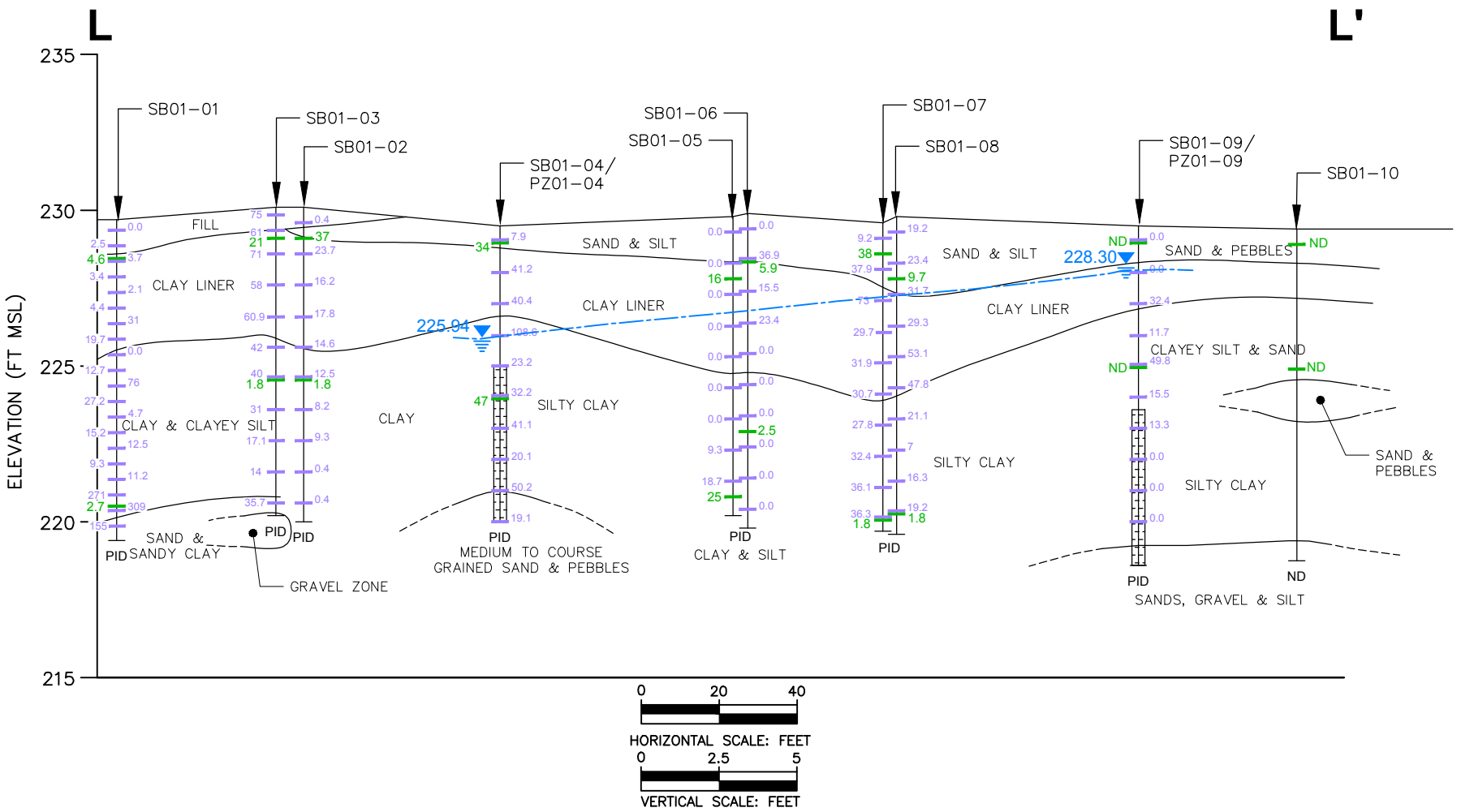

LEGEND:

PRE-PACKAGE TEMPORARY WELL SCREEN

POTENTIOMETRIC HEAD (FT AMSL, AUGUST 21, 2013)

2.5 SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID]

47 TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. PPM = PARTS PER MILLION
3. BORINGS AND TEMPORARY PIEZOMETERS INSTALLED ON AUGUST 19 AND 20, 2013
4. FT AMSL = FEET ABOVE MEAN SEA LEVEL
5. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION L-L' - AOC 1

ARCADIS

ATTACHMENT
D-13

CITY:SYRACUSE DIV/GROUP:ENV DB:A.SANCHEZ LD:AS PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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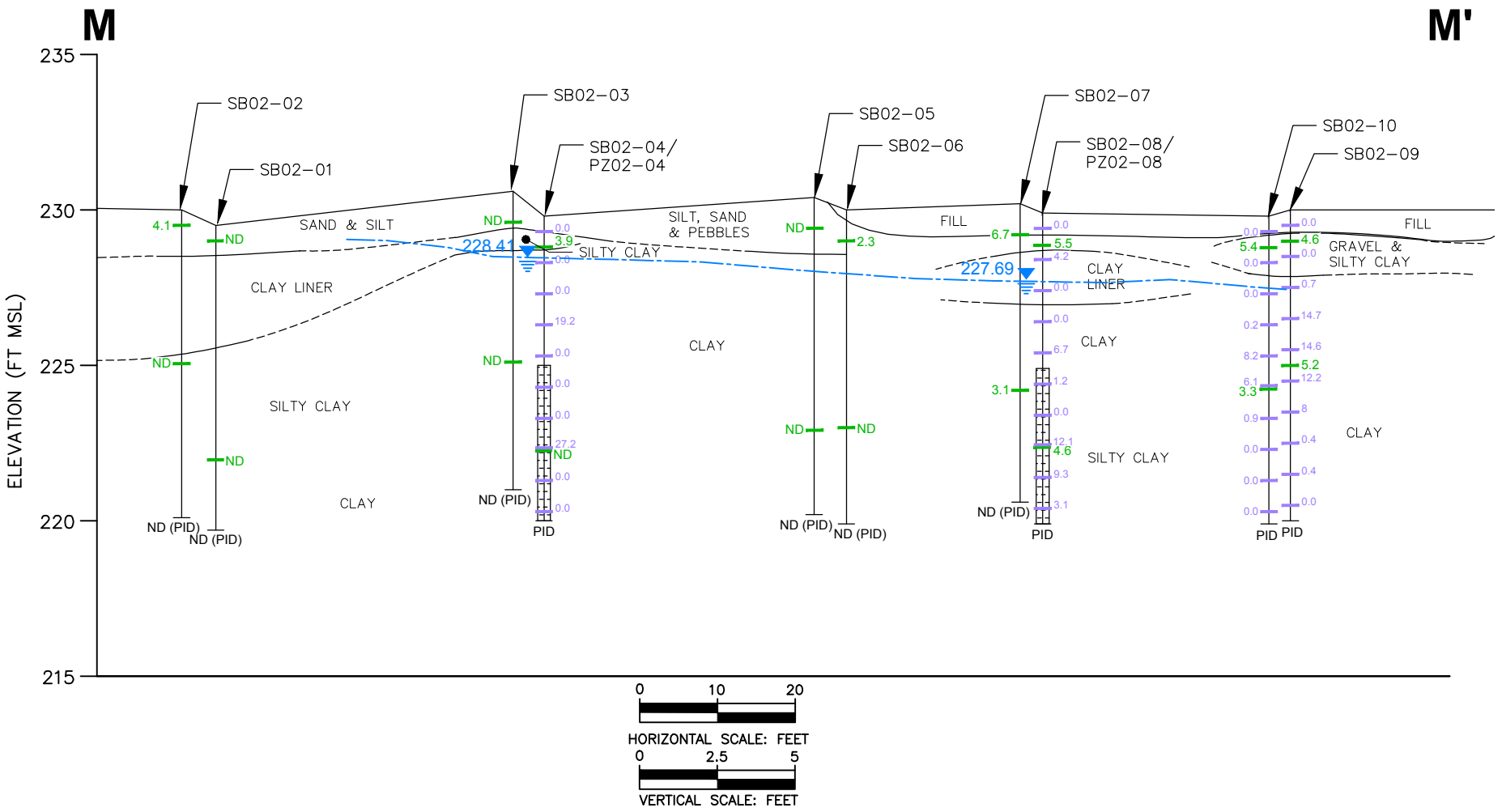
XREFS: IMAGES: PROJECTNAME: ----



LEGEND:

PRE-PACKAGE TEMPORARY WELL SCREEN

POTENTIOMETRIC HEAD
(FT AMSL, AUGUST 21, 2013)

19.2 — SOIL SCREENING CONCENTRATION, PPM
(PHOTOIONIZATION DETECTOR [PID]

4.1 J — TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

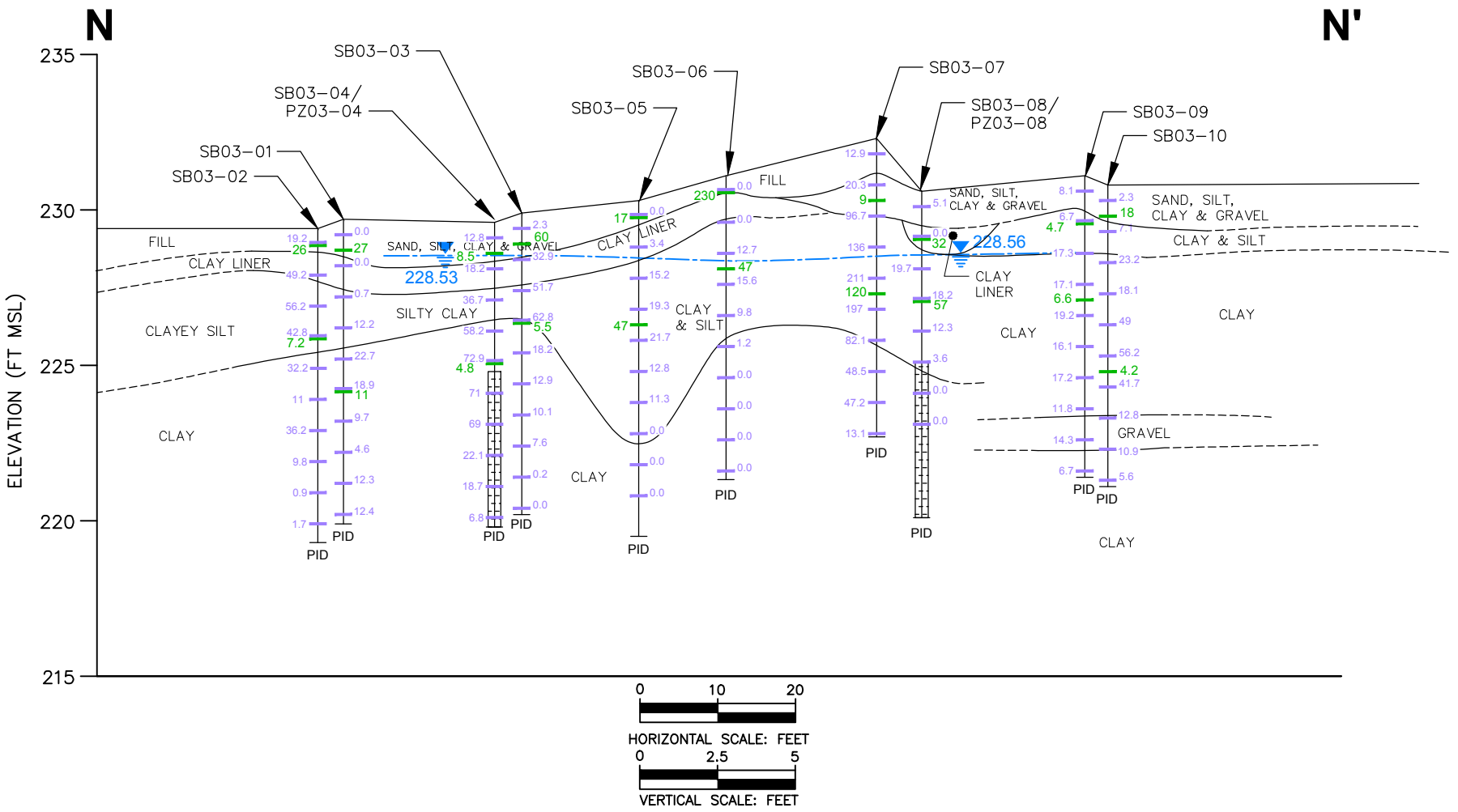
1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. PPM = PARTS PER MILLION
3. BORINGS AND TEMPORARY PIEZOMETERS INSTALLED ON AUGUST 20 AND 21, 2013
4. FT AMSL = FEET ABOVE MEAN SEA LEVEL
5. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION M-M' - AOC 2

ARCADIS

ATTACHMENT
D-14



LEGEND:

PRE-PACKAGE TEMPORARY WELL SCREEN

POTENTIOMETRIC HEAD (FT AMSL, AUGUST 21, 2013)

11 — SOIL SCREENING CONCENTRATION, PPM (PHOTOIONIZATION DETECTOR [PID]

26 — TOTAL PETROLEUM HYDROCARBON DIESEL RANGE ORGANICS (TPH-DRO) CONCENTRATION IN SOIL (MG/KG)

NOTES:

1. ND = PID/FID/OVA READING AT 0.0 PPM, DURING BORING
2. PPM = PARTS PER MILLION
3. BORINGS AND TEMPORARY PIEZOMETERS INSTALLED ON AUGUST 21 AND 22, 2013
4. FT AMSL = FEET ABOVE MEAN SEA LEVEL
5. MG/KG = MILLIGRAMS PER KILOGRAM

CSX TRANSPORTATION
BRUNSWICK, MARYLAND
REVISED SITE CONCEPTUAL MODEL ADDENDUM 1

SECTION N-N' - AOC 3

ARCADIS

ATTACHMENT
D-15

ARCADIS

Appendix E

Laboratory Data Packages

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-93423-1
Client Project/Site: CSX C&O Canal Brunswick, MD

For:
ARCADIS U.S., Inc.
1114 Benfield Blvd.
Suite A
Millersville, Maryland 21108

Attn: Ms. Megan Kellner

Authorized for release by:
9/13/2013 12:03:43 PM

Lisa Harvey, Project Manager II
lisa.harvey@testamericainc.com

Job ID: 680-93423-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX C&O Canal Brunswick, MD
Report Number: 680-93423-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 8/21/2013 10:07 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

The tare weights were covered by the client ID labels on 34 of 36 terra core vials. Tare weights are needed to be able to calculate initial soil volume collected in the field.

The footage on the COC for the VOCs and GRO is a shorter range than what was indicated for the SVOCs and DRO. For consitency in reporting moisture values, the specific soil boring was logged in for all tests based on the sample ID and date/time sampled, and were subsequently logged in so as to report at the largest of the depth range.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SB01-01 (1.0-2.0) (680-93423-1), SB01-01 (9.0-10.0) (680-93423-2), SB01-03 (0.5-1.5) (680-93423-3), SB01-03 (5.0-6.0) (680-93423-4), SB01-02 (0.5-1.5) (680-93423-5), SB01-02 (5.0-6.0) (680-93423-6), SB01-04 (0.0-1.0) (680-93423-7), SB01-04 (5.0-6.0) (680-93423-8), SB01-06 (1.0-2.0) (680-93423-9), SB01-06 (6.5-7.5) (680-93423-10), SB01-05 (8.5-9.5) (680-93423-11) and SB01-05 (1.5-2.5) (680-93423-12) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Method(s) 8260B: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for analytical batch 190345 recovered outside control limits for the following analyte: Bromomethane.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample Trip Blank (680-93423-13) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS (SOLID)

Samples SB01-01 (1.0-2.0) (680-93423-1), SB01-01 (9.0-10.0) (680-93423-2), SB01-03 (0.5-1.5) (680-93423-3), SB01-03 (5.0-6.0) (680-93423-4), SB01-02 (0.5-1.5) (680-93423-5), SB01-02 (5.0-6.0) (680-93423-6), SB01-04 (0.0-1.0) (680-93423-7), SB01-04 (5.0-6.0) (680-93423-8), SB01-06 (1.0-2.0) (680-93423-9), SB01-06 (6.5-7.5) (680-93423-10), SB01-05 (8.5-9.5) (680-93423-11) and SB01-05 (1.5-2.5) (680-93423-12) were analyzed for Semivolatile Organic Compounds (Solid) in accordance with EPA SW-846 Method 8270D.

Method(s) 8270D: The initial calibration curve analyzed in batch 291781 was outside method criteria for the following analyte(s): benzoic acid. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

Method(s) 8270D: The following sample(s) contained one acid and/or one base surrogate outside acceptance limits: SB01-04 (0.0-1.0) (680-93423-7), SB01-05 (1.5-2.5) (680-93423-12). The laboratory's SOP allows one acid surrogate and/or one base surrogate to be

Job ID: 680-93423-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

outside acceptance limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8270D: The following analytes have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Famphur, 1,4-Napthaquinone, Methane sulfonate, Benzaldehyde, 1-naphthylamine, 2-naphthylamine, p-Dimethylamino azobenzene, p-phenylenediamine, a,a-dimethylphenethylamine, Methapyriline, 2-picoline (2-methylpyridine), 3,3'-dimethylbenzidine, 3,3'-dichlorobenzidine, Benzidine, Benzaldehyde, Benzoic acid, Dinoseb, Hexachlorophene, Hexachlorocyclopentadiene, o,o,o-triethylphosphoro-thioate. These analytes may have a %D >60% if the average %D of all the analytes in the continuing calibration verification (CCV) is 30%. These analytes may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 291613 was outside the method criteria for the following analyte(s): 2,2'oxybis[1-chloropropane], 2-Methylphenol, 3&4 Methylphenol, Anthracene, Benzidine, 1,2 Dichlorbenzene, Benzyl alcohol, Butyl benzyl phthalate, Carbazole, Di-n-butyl phthalate, Fluoranthene, Hexachloroethane, N-Nitrosodimethylamine, N-Nitrosodi-n-propylamine, phenol, pyrene, pyridine and Terphenyl-d14. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: Surrogate recovery for the following sample(s) was outside control limits: SB01-01 (1.0-2.0) (680-93423-1). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

Method(s) 8270D: Surrogate recovery for the following sample(s) was outside control limits: SB01-03 (0.5-1.5) (680-93423-3). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

Method(s) 8270D: Surrogate recovery for the following sample(s) was outside control limits: SB01-05 (8.5-9.5) (680-93423-11). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

Method(s) 8270D: The initial calibration curve analyzed in batch 291440 was outside method criteria for the following analyte(s): Acetophenone and Butyl benzyl phthalate. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

Method(s) 8270D: The initial calibration verification (ICV) analyzed in batch 291440 was outside method criteria for the following analyte(s): 1,2,4,5 Tetrachlorobenzene and Di-n-butyl phthalate. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

GASOLINE RANGE ORGANICS (GRO)

Samples SB01-01 (1.0-2.0) (680-93423-1), SB01-01 (9.0-10.0) (680-93423-2), SB01-03 (0.5-1.5) (680-93423-3), SB01-03 (5.0-6.0) (680-93423-4), SB01-02 (0.5-1.5) (680-93423-5), SB01-02 (5.0-6.0) (680-93423-6), SB01-04 (0.0-1.0) (680-93423-7), SB01-04 (5.0-6.0) (680-93423-8), SB01-06 (1.0-2.0) (680-93423-9), SB01-06 (6.5-7.5) (680-93423-10), SB01-05 (8.5-9.5) (680-93423-11) and SB01-05 (1.5-2.5) (680-93423-12) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015B.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Method(s) 8015C: Internal standard (ISTD) response for the following sample were outside control limits: SB01-02 (0.5-1.5) (680-93423-5), SB01-02 (5.0-6.0) (680-93423-6), SB01-04 (0.0-1.0) (680-93423-7). The samples were re-analyzed with concurring results. The original set of data has been reported.

Method(s) 8015C: Internal standard (ISTD) response for the following samples were outside control limits: SB01-05 (8.5-9.5) (680-93423-11), SB01-06 (6.5-7.5) (680-93423-10). The samples were re-analyzed with concurring results. Only the re-analysis has been reported due to probable contamination in the initial analyses from a earlier sample in the analytical clock.

Method(s) 8015C: Surrogate recovery for the following sample was outside control limits: SB01-04 (0.0-1.0) (680-93423-7). Re-analysis was performed with concurring results. The original analysis has been reported.

Method(s) 8015C: Surrogate recovery for the following sample(s) was outside control limits: SB01-04 (5.0-6.0) (680-93423-8). Evidence of

Job ID: 680-93423-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

matrix interference is present t hroughout the project; therefore, re-analysis was not performed. Data have been reported.

DIESEL RANGE ORGANICS (DRO)

Samples SB01-01 (1.0-2.0) (680-93423-1), SB01-01 (9.0-10.0) (680-93423-2), SB01-03 (0.5-1.5) (680-93423-3), SB01-03 (5.0-6.0) (680-93423-4), SB01-02 (0.5-1.5) (680-93423-5), SB01-02 (5.0-6.0) (680-93423-6), SB01-04 (0.0-1.0) (680-93423-7), SB01-04 (5.0-6.0) (680-93423-8), SB01-06 (1.0-2.0) (680-93423-9), SB01-06 (6.5-7.5) (680-93423-10), SB01-05 (8.5-9.5) (680-93423-11) and SB01-05 (1.5-2.5) (680-93423-12) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Method(s) 8015C: The matrix spike (MS) recoveries for batch 102377 were outside control limits. The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 102377 was outside control limits.

ORO C24-C40 was detected in method blank MB 490-102377/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

ORO C24-C40 was detected in method blank MB 490-103126/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Diesel Range Organics [C10-C28] was detected in method blank MB 490-103126/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

ORO C24-C40 was detected in method blank MB 490-103975/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-93423-1	SB01-01 (1.0-2.0)	Solid	08/19/13 12:30	08/21/13 10:07
680-93423-2	SB01-01 (9.0-10.0)	Solid	08/19/13 12:35	08/21/13 10:07
680-93423-3	SB01-03 (0.5-1.5)	Solid	08/19/13 14:00	08/21/13 10:07
680-93423-4	SB01-03 (5.0-6.0)	Solid	08/19/13 14:10	08/21/13 10:07
680-93423-5	SB01-02 (0.5-1.5)	Solid	08/19/13 14:25	08/21/13 10:07
680-93423-6	SB01-02 (5.0-6.0)	Solid	08/19/13 14:30	08/21/13 10:07
680-93423-7	SB01-04 (0.0-1.0)	Solid	08/19/13 15:30	08/21/13 10:07
680-93423-8	SB01-04 (5.0-6.0)	Solid	08/19/13 15:35	08/21/13 10:07
680-93423-9	SB01-06 (1.0-2.0)	Solid	08/19/13 16:15	08/21/13 10:07
680-93423-10	SB01-06 (6.5-7.5)	Solid	08/19/13 16:20	08/21/13 10:07
680-93423-11	SB01-05 (8.5-9.5)	Solid	08/19/13 16:50	08/21/13 10:07
680-93423-12	SB01-05 (1.5-2.5)	Solid	08/19/13 16:45	08/21/13 10:07
680-93423-13	Trip Blank	Water	08/19/13 00:00	08/21/13 10:07

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL NSH

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	RPD of the LCS and LCSD exceeds the control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F	MS/MSD Recovery and/or RPD exceeds the control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-01 (1.0-2.0)
Date Collected: 08/19/13 12:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-1
Matrix: Solid
Percent Solids: 73.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	30	U	30	8.6	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Benzene	5.9	U	5.9	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Bromodichloromethane	5.9	U	5.9	0.99	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Bromoform	5.9	U	5.9	0.74	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Bromomethane	5.9	U *	5.9	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Carbon disulfide	5.9	U	5.9	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Carbon tetrachloride	5.9	U	5.9	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Chlorobenzene	5.9	U	5.9	0.61	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Chloroethane	5.9	U	5.9	2.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Chloroform	5.9	U	5.9	0.70	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Chloromethane	5.9	U	5.9	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
cis-1,2-Dichloroethene	5.9	U	5.9	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
cis-1,3-Dichloropropene	5.9	U	5.9	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Cyclohexane	5.9	U	5.9	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Dibromochloromethane	5.9	U	5.9	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,2-Dibromo-3-Chloropropane	5.9	U	5.9	3.9	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,2-Dichlorobenzene	5.9	U	5.9	0.84	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,3-Dichlorobenzene	5.9	U	5.9	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,4-Dichlorobenzene	5.9	U	5.9	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Dichlorodifluoromethane	5.9	U	5.9	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,1-Dichloroethane	5.9	U	5.9	0.98	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,2-Dichloroethane	5.9	U	5.9	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,1-Dichloroethene	5.9	U	5.9	0.89	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,2-Dichloropropane	5.9	U	5.9	0.87	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Diisopropyl ether	5.9	U	5.9	0.65	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Ethylbenzene	5.9	U	5.9	0.72	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Ethylene Dibromide	5.9	U	5.9	0.57	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Ethyl tert-butyl ether	5.9	U	5.9	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
2-Hexanone	30	U	30	5.9	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Isopropylbenzene	5.9	U	5.9	0.80	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Methyl acetate	5.9	U	5.9	5.4	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Methylcyclohexane	5.9	U	5.9	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Methylene Chloride	18	U	18	12	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Methyl Ethyl Ketone	30	U	30	4.8	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
methyl isobutyl ketone	30	U	30	4.7	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Methyl tert-butyl ether	5.9	U	5.9	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Naphthalene	5.9	U	5.9	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Styrene	5.9	U	5.9	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Tert-amyl methyl ether	5.9	U	5.9	0.52	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
tert-Butyl alcohol	5.9	U	5.9	4.0	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,1,2,2-Tetrachloroethane	5.9	U	5.9	0.85	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Tetrachloroethene	5.9	U	5.9	0.99	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Toluene	5.9	U	5.9	0.83	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
trans-1,2-Dichloroethene	5.9	U	5.9	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
trans-1,3-Dichloropropene	5.9	U	5.9	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,2,4-Trichlorobenzene	5.9	U	5.9	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,1,1-Trichloroethane	5.9	U	5.9	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,1,2-Trichloroethane	5.9	U	5.9	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Trichloroethene	5.9	U	5.9	0.57	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1

Client Sample ID: SB01-01 (1.0-2.0)
Date Collected: 08/19/13 12:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-1
Matrix: Solid
Percent Solids: 73.9

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.9	U	5.9	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.9	U	5.9	2.4	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Vinyl chloride	5.9	U	5.9	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1
Xylenes, Total	12	U	12	2.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 122*	*08/22/13 13:27*	*08/30/13 17:00*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/22/13 13:27*	*08/30/13 17:00*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/22/13 13:27*	*08/30/13 17:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	440	U	440	78	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Phenol	**53**	**J**	440	46	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Bis(2-chloroethyl)ether	440	U	440	60	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2-Chlorophenol	440	U	440	54	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2-Methylphenol	440	U	440	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
bis (2-chloroisopropyl) ether	440	U	440	40	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Acetophenone	440	U	440	38	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
3 & 4 Methylphenol	440	U	440	58	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
N-Nitrosodi-n-propylamine	440	U	440	43	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Hexachloroethane	440	U	440	38	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Nitrobenzene	440	U	440	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Isophorone	440	U	440	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2-Nitrophenol	440	U	440	55	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2,4-Dimethylphenol	440	U	440	59	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Bis(2-chloroethoxy)methane	440	U	440	52	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2,4-Dichlorophenol	440	U	440	47	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Naphthalene	**100**	**J**	440	40	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
4-Chloroaniline	890	U	890	70	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Hexachlorobutadiene	440	U	440	48	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Caprolactam	440	U	440	89	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
4-Chloro-3-methylphenol	440	U	440	47	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2-Methylnaphthalene	**140**	**J**	440	51	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Hexachlorocyclopentadiene	440	U	440	55	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2,4,6-Trichlorophenol	440	U	440	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2,4,5-Trichlorophenol	440	U	440	47	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
1,1'-Biphenyl	990	U	990	990	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2-Chloronaphthalene	440	U	440	47	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2-Nitroaniline	2300	U	2300	60	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Dimethyl phthalate	440	U	440	46	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2,6-Dinitrotoluene	440	U	440	56	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Acenaphthylene	440	U	440	48	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
3-Nitroaniline	2300	U	2300	62	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Acenaphthene	440	U	440	55	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2,4-Dinitrophenol	2300	U	2300	1100	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
4-Nitrophenol	2300	U	2300	440	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Dibenzofuran	440	U	440	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
2,4-Dinitrotoluene	440	U	440	66	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Diethyl phthalate	440	U	440	50	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1

Client Sample ID: SB01-01 (1.0-2.0)
Date Collected: 08/19/13 12:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-1
Matrix: Solid
Percent Solids: 73.9

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	440	U	440	48	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
4-Chlorophenyl phenyl ether	440	U	440	59	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
4-Nitroaniline	2300	U	2300	66	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
4,6-Dinitro-2-methylphenol	2300	U	2300	230	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
N-Nitrosodiphenylamine	440	U	440	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
4-Bromophenyl phenyl ether	440	U	440	48	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Hexachlorobenzene	440	U	440	52	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Atrazine	440	U	440	31	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Pentachlorophenol	2300	U	2300	440	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Phenanthrene	**81**	**J**	440	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Anthracene	440	U	440	34	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Carbazole	440	U	440	40	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Di-n-butyl phthalate	440	U	440	40	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Fluoranthene	440	U	440	43	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Pyrene	440	U	440	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Butyl benzyl phthalate	440	U	440	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
3,3'-Dichlorobenzidine	890	U	890	38	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Benzo[a]anthracene	440	U	440	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Chrysene	**38**	**J**	440	28	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Bis(2-ethylhexyl) phthalate	440	U	440	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Di-n-octyl phthalate	440	U	440	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Benzo[b]fluoranthene	440	U	440	51	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Benzo[k]fluoranthene	440	U	440	87	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Benzo[a]pyrene	440	U	440	70	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Indeno[1,2,3-cd]pyrene	440	U	440	38	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Dibenz(a,h)anthracene	440	U	440	52	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1
Benzo[g,h,i]perylene	440	U	440	30	ug/Kg	☼	08/25/13 12:13	08/31/13 21:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*53*		*46 - 130*	*08/25/13 12:13*	*08/31/13 21:01*	*1*
2-Fluorobiphenyl	*55*	*X*	*58 - 130*	*08/25/13 12:13*	*08/31/13 21:01*	*1*
Terphenyl-d14 (Surr)	*50*	*X*	*60 - 130*	*08/25/13 12:13*	*08/31/13 21:01*	*1*
Phenol-d5 (Surr)	*55*		*49 - 130*	*08/25/13 12:13*	*08/31/13 21:01*	*1*
2-Fluorophenol (Surr)	*54*		*40 - 130*	*08/25/13 12:13*	*08/31/13 21:01*	*1*
2,4,6-Tribromophenol (Surr)	*59*		*58 - 130*	*08/25/13 12:13*	*08/31/13 21:01*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	330	U	330	25	ug/Kg	☼	08/21/13 16:21	08/22/13 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*94*		*70 - 131*	*08/21/13 16:21*	*08/22/13 16:38*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4600**	**J**	6700	1900	ug/Kg	☼	08/30/13 13:38	09/01/13 17:32	1
ORO C24-C40	**7600**	**B**	6700	1900	ug/Kg	☼	08/30/13 13:38	09/01/13 17:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*75*		*50 - 150*	*08/30/13 13:38*	*09/01/13 17:32*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-01 (9.0-10.0)
Date Collected: 08/19/13 12:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-2
Matrix: Solid
Percent Solids: 82.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	20	U	20	5.9	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Benzene	4.1	U	4.1	0.40	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Bromodichloromethane	4.1	U	4.1	0.68	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Bromoform	4.1	U	4.1	0.51	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Bromomethane	4.1	U *	4.1	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Carbon disulfide	4.1	U	4.1	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Carbon tetrachloride	4.1	U	4.1	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Chlorobenzene	4.1	U	4.1	0.42	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Chloroethane	4.1	U	4.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Chloroform	4.1	U	4.1	0.48	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Chloromethane	4.1	U	4.1	0.81	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
cis-1,2-Dichloroethene	4.1	U	4.1	0.62	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
cis-1,3-Dichloropropene	4.1	U	4.1	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Cyclohexane	4.1	U	4.1	0.76	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Dibromochloromethane	4.1	U	4.1	0.71	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,2-Dibromo-3-Chloropropane	4.1	U	4.1	2.7	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,2-Dichlorobenzene	4.1	U	4.1	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,3-Dichlorobenzene	4.1	U	4.1	0.77	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,4-Dichlorobenzene	4.1	U	4.1	0.67	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Dichlorodifluoromethane	4.1	U	4.1	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,1-Dichloroethane	4.1	U	4.1	0.67	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,2-Dichloroethane	4.1	U	4.1	0.67	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,1-Dichloroethene	4.1	U	4.1	0.61	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,2-Dichloropropane	4.1	U	4.1	0.60	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Diisopropyl ether	4.1	U	4.1	0.45	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Ethylbenzene	4.1	U	4.1	0.49	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Ethylene Dibromide	4.1	U	4.1	0.39	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Ethyl tert-butyl ether	4.1	U	4.1	0.45	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
2-Hexanone	20	U	20	4.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Isopropylbenzene	4.1	U	4.1	0.55	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Methyl acetate	4.1	U	4.1	3.7	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Methylcyclohexane	4.1	U	4.1	0.71	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Methylene Chloride	12	U	12	8.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Methyl Ethyl Ketone	20	U	20	3.3	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
methyl isobutyl ketone	20	U	20	3.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Methyl tert-butyl ether	4.1	U	4.1	0.81	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Naphthalene	4.1	U	4.1	0.81	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Styrene	4.1	U	4.1	0.62	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Tert-amyl methyl ether	4.1	U	4.1	0.36	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
tert-Butyl alcohol	4.1	U	4.1	2.8	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,1,2,2-Tetrachloroethane	4.1	U	4.1	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Tetrachloroethene	4.1	U	4.1	0.68	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Toluene	4.1	U	4.1	0.57	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
trans-1,2-Dichloroethene	4.1	U	4.1	0.62	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
trans-1,3-Dichloropropene	4.1	U	4.1	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,2,4-Trichlorobenzene	4.1	U	4.1	0.59	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,1,1-Trichloroethane	4.1	U	4.1	0.89	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,1,2-Trichloroethane	4.1	U	4.1	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Trichloroethene	4.1	U	4.1	0.39	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-01 (9.0-10.0)
Date Collected: 08/19/13 12:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-2
Matrix: Solid
Percent Solids: 82.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.1	U	4.1	0.77	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.1	U	4.1	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Vinyl chloride	4.1	U	4.1	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1
Xylenes, Total	8.1	U	8.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 17:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 122*	*08/22/13 13:27*	*08/30/13 17:24*	*1*
Dibromofluoromethane	*105*		*79 - 123*	*08/22/13 13:27*	*08/30/13 17:24*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/22/13 13:27*	*08/30/13 17:24*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Phenol	400	U	400	41	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Isophorone	400	U	400	40	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
1,1'-Biphenyl	900	U	900	900	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2-Nitroaniline	2100	U	2100	54	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1

Client Sample ID: SB01-01 (9.0-10.0)
Date Collected: 08/19/13 12:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-2
Matrix: Solid
Percent Solids: 82.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
4-Nitroaniline	2100	U	2100	59	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Atrazine	400	U	400	28	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Anthracene	400	U	400	30	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Carbazole	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Pyrene	400	U	400	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Chrysene	400	U	400	25	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/25/13 12:13	08/31/13 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*65*		*46 - 130*	*08/25/13 12:13*	*08/31/13 21:26*	*1*
2-Fluorobiphenyl	*71*		*58 - 130*	*08/25/13 12:13*	*08/31/13 21:26*	*1*
Terphenyl-d14 (Surr)	*76*		*60 - 130*	*08/25/13 12:13*	*08/31/13 21:26*	*1*
Phenol-d5 (Surr)	*67*		*49 - 130*	*08/25/13 12:13*	*08/31/13 21:26*	*1*
2-Fluorophenol (Surr)	*82*		*40 - 130*	*08/25/13 12:13*	*08/31/13 21:26*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*58 - 130*	*08/25/13 12:13*	*08/31/13 21:26*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	320	U	320	24	ug/Kg	☼	08/21/13 16:21	08/22/13 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*104*		*70 - 131*	*08/21/13 16:21*	*08/22/13 16:58*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2700**	**J**	6100	1700	ug/Kg	☼	08/30/13 13:38	09/01/13 17:48	1
ORO C24-C40	**3400**	**J B**	6100	1700	ug/Kg	☼	08/30/13 13:38	09/01/13 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*50 - 150*	*08/30/13 13:38*	*09/01/13 17:48*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-03 (0.5-1.5)
Date Collected: 08/19/13 14:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-3
Matrix: Solid
Percent Solids: 83.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	28	U	28	8.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Benzene	5.6	U	5.6	0.55	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Bromodichloromethane	5.6	U	5.6	0.95	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Bromoform	5.6	U	5.6	0.71	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Bromomethane	5.6	U *	5.6	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Carbon disulfide	5.6	U	5.6	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Carbon tetrachloride	5.6	U	5.6	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Chlorobenzene	5.6	U	5.6	0.59	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Chloroethane	5.6	U	5.6	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Chloroform	5.6	U	5.6	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Chloromethane	5.6	U	5.6	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
cis-1,2-Dichloroethene	5.6	U	5.6	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
cis-1,3-Dichloropropene	5.6	U	5.6	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Cyclohexane	5.6	U	5.6	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Dibromochloromethane	5.6	U	5.6	0.98	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,2-Dibromo-3-Chloropropane	5.6	U	5.6	3.7	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,2-Dichlorobenzene	5.6	U	5.6	0.80	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,3-Dichlorobenzene	5.6	U	5.6	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,4-Dichlorobenzene	5.6	U	5.6	0.92	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Dichlorodifluoromethane	5.6	U	5.6	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,1-Dichloroethane	5.6	U	5.6	0.93	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,2-Dichloroethane	5.6	U	5.6	0.92	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,1-Dichloroethene	5.6	U	5.6	0.84	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,2-Dichloropropane	5.6	U	5.6	0.83	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Diisopropyl ether	5.6	U	5.6	0.62	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Ethylbenzene	5.6	U	5.6	0.69	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Ethylene Dibromide	5.6	U	5.6	0.54	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Ethyl tert-butyl ether	5.6	U	5.6	0.63	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
2-Hexanone	28	U	28	5.6	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Isopropylbenzene	5.6	U	5.6	0.77	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Methyl acetate	5.6	U	5.6	5.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Methylcyclohexane	5.6	U	5.6	0.98	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Methylene Chloride	17	U	17	11	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Methyl Ethyl Ketone	28	U	28	4.6	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
methyl isobutyl ketone	28	U	28	4.5	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Methyl tert-butyl ether	5.6	U	5.6	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Naphthalene	5.6	U	5.6	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Styrene	5.6	U	5.6	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Tert-amyl methyl ether	5.6	U	5.6	0.50	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
tert-Butyl alcohol	5.6	U	5.6	3.8	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,1,2,2-Tetrachloroethane	5.6	U	5.6	0.81	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Tetrachloroethene	5.6	U	5.6	0.95	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Toluene	5.6	U	5.6	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
trans-1,2-Dichloroethene	5.6	U	5.6	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
trans-1,3-Dichloropropene	5.6	U	5.6	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,2,4-Trichlorobenzene	5.6	U	5.6	0.82	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,1,1-Trichloroethane	5.6	U	5.6	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,1,2-Trichloroethane	5.6	U	5.6	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Trichloroethene	5.6	U	5.6	0.54	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1

Client Sample ID: SB01-03 (0.5-1.5)
Date Collected: 08/19/13 14:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-3
Matrix: Solid
Percent Solids: 83.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.6	U	5.6	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.6	U	5.6	2.3	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Vinyl chloride	5.6	U	5.6	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1
Xylenes, Total	11	U	11	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/22/13 13:27*	*08/30/13 17:47*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/22/13 13:27*	*08/30/13 17:47*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*08/22/13 13:27*	*08/30/13 17:47*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	390	U	390	69	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Phenol	390	U	390	41	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Bis(2-chloroethyl)ether	390	U	390	54	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2-Chlorophenol	390	U	390	48	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2-Methylphenol	390	U	390	32	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
bis (2-chloroisopropyl) ether	390	U	390	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Acetophenone	390	U	390	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
3 & 4 Methylphenol	390	U	390	51	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
N-Nitrosodi-n-propylamine	390	U	390	38	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Hexachloroethane	390	U	390	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Nitrobenzene	390	U	390	31	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Isophorone	390	U	390	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2-Nitrophenol	390	U	390	49	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2,4-Dimethylphenol	390	U	390	52	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Bis(2-chloroethoxy)methane	390	U	390	46	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2,4-Dichlorophenol	390	U	390	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Naphthalene	**170**	**J**	390	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
4-Chloroaniline	790	U	790	62	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Hexachlorobutadiene	390	U	390	43	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Caprolactam	390	U	390	79	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
4-Chloro-3-methylphenol	390	U	390	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2-Methylnaphthalene	**86**	**J**	390	45	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Hexachlorocyclopentadiene	390	U	390	49	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2,4,6-Trichlorophenol	390	U	390	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2,4,5-Trichlorophenol	390	U	390	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
1,1'-Biphenyl	880	U	880	880	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2-Chloronaphthalene	390	U	390	42	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2-Nitroaniline	2000	U	2000	54	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Dimethyl phthalate	390	U	390	41	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2,6-Dinitrotoluene	390	U	390	50	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Acenaphthylene	390	U	390	43	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
3-Nitroaniline	2000	U	2000	55	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Acenaphthene	390	U	390	49	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2,4-Dinitrophenol	2000	U	2000	990	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
4-Nitrophenol	2000	U	2000	390	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Dibenzofuran	**46**	**J**	390	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
2,4-Dinitrotoluene	390	U	390	58	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Diethyl phthalate	390	U	390	44	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1

Client Sample ID: SB01-03 (0.5-1.5)
Date Collected: 08/19/13 14:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-3
Matrix: Solid
Percent Solids: 83.3

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	390	U	390	43	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
4-Chlorophenyl phenyl ether	390	U	390	52	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
4-Nitroaniline	2000	U	2000	58	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
N-Nitrosodiphenylamine	390	U	390	39	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
4-Bromophenyl phenyl ether	390	U	390	43	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Hexachlorobenzene	390	U	390	46	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Atrazine	390	U	390	27	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Pentachlorophenol	2000	U	2000	390	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Phenanthrene	**75**	**J**	390	32	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Anthracene	390	U	390	30	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Carbazole	390	U	390	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Di-n-butyl phthalate	390	U	390	36	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Fluoranthene	**66**	**J**	390	38	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Pyrene	**35**	**J**	390	32	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Butyl benzyl phthalate	390	U	390	31	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
3,3'-Dichlorobenzidine	790	U	790	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Benzo[a]anthracene	390	U	390	32	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Chrysene	**34**	**J**	390	25	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Bis(2-ethylhexyl) phthalate	**65**	**J**	390	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Di-n-octyl phthalate	390	U	390	35	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Benzo[b]fluoranthene	390	U	390	45	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Benzo[k]fluoranthene	390	U	390	77	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Benzo[a]pyrene	390	U	390	62	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Indeno[1,2,3-cd]pyrene	**54**	**J**	390	33	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Dibenz(a,h)anthracene	390	U	390	46	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1
Benzo[g,h,i]perylene	**86**	**J**	390	26	ug/Kg	☼	08/25/13 12:13	08/31/13 21:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*51*		*46 - 130*	*08/25/13 12:13*	*08/31/13 21:52*	*1*
2-Fluorobiphenyl	*56*	*X*	*58 - 130*	*08/25/13 12:13*	*08/31/13 21:52*	*1*
Terphenyl-d14 (Surr)	*47*	*X*	*60 - 130*	*08/25/13 12:13*	*08/31/13 21:52*	*1*
Phenol-d5 (Surr)	*53*		*49 - 130*	*08/25/13 12:13*	*08/31/13 21:52*	*1*
2-Fluorophenol (Surr)	*52*		*40 - 130*	*08/25/13 12:13*	*08/31/13 21:52*	*1*
2,4,6-Tribromophenol (Surr)	*63*		*58 - 130*	*08/25/13 12:13*	*08/31/13 21:52*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**260**	**J**	330	25	ug/Kg	☼	08/21/13 16:21	08/22/13 17:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*116*		*70 - 131*	*08/21/13 16:21*	*08/22/13 17:20*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**21000**		5900	1700	ug/Kg	☼	08/30/13 13:38	09/01/13 18:03	1
ORO C24-C40	**43000**	**B**	5900	1700	ug/Kg	☼	08/30/13 13:38	09/01/13 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*75*		*50 - 150*	*08/30/13 13:38*	*09/01/13 18:03*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-03 (5.0-6.0)
Date Collected: 08/19/13 14:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-4
Matrix: Solid
Percent Solids: 83.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	23	U	23	6.9	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Benzene	4.7	U	4.7	0.46	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Bromodichloromethane	4.7	U	4.7	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Bromoform	4.7	U	4.7	0.59	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Bromomethane	4.7	U *	4.7	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Carbon disulfide	4.7	U	4.7	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Carbon tetrachloride	4.7	U	4.7	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Chlorobenzene	4.7	U	4.7	0.49	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Chloroethane	4.7	U	4.7	1.8	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Chloroform	4.7	U	4.7	0.55	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Chloromethane	4.7	U	4.7	0.94	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
cis-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
cis-1,3-Dichloropropene	4.7	U	4.7	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Cyclohexane	4.7	U	4.7	0.88	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Dibromochloromethane	4.7	U	4.7	0.82	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,2-Dibromo-3-Chloropropane	4.7	U	4.7	3.1	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,2-Dichlorobenzene	4.7	U	4.7	0.67	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,3-Dichlorobenzene	4.7	U	4.7	0.89	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,4-Dichlorobenzene	4.7	U	4.7	0.77	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Dichlorodifluoromethane	4.7	U	4.7	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,1-Dichloroethane	4.7	U	4.7	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,2-Dichloroethane	4.7	U	4.7	0.77	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,1-Dichloroethene	4.7	U	4.7	0.70	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,2-Dichloropropane	4.7	U	4.7	0.70	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Diisopropyl ether	4.7	U	4.7	0.52	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Ethylbenzene	4.7	U	4.7	0.57	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Ethylene Dibromide	4.7	U	4.7	0.45	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Ethyl tert-butyl ether	4.7	U	4.7	0.53	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
2-Hexanone	23	U	23	4.7	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Isopropylbenzene	4.7	U	4.7	0.64	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Methyl acetate	4.7	U	4.7	4.3	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Methylcyclohexane	4.7	U	4.7	0.82	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Methylene Chloride	14	U	14	9.4	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Methyl Ethyl Ketone	23	U	23	3.9	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
methyl isobutyl ketone	23	U	23	3.8	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Methyl tert-butyl ether	4.7	U	4.7	0.94	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Naphthalene	4.7	U	4.7	0.94	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Styrene	4.7	U	4.7	0.71	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Tert-amyl methyl ether	4.7	U	4.7	0.41	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
tert-Butyl alcohol	4.7	U	4.7	3.2	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,1,2,2-Tetrachloroethane	4.7	U	4.7	0.68	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Tetrachloroethene	4.7	U	4.7	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Toluene	4.7	U	4.7	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
trans-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
trans-1,3-Dichloropropene	4.7	U	4.7	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,2,4-Trichlorobenzene	4.7	U	4.7	0.69	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,1,1-Trichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,1,2-Trichloroethane	4.7	U	4.7	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Trichloroethene	4.7	U	4.7	0.45	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1

Client Sample ID: SB01-03 (5.0-6.0)
Date Collected: 08/19/13 14:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-4
Matrix: Solid
Percent Solids: 83.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.7	U	4.7	0.89	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7	U	4.7	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Vinyl chloride	4.7	U	4.7	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1
Xylenes, Total	9.4	U	9.4	1.8	ug/Kg	☼	08/22/13 13:27	08/30/13 18:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 122*	*08/22/13 13:27*	*08/30/13 18:13*	*1*
Dibromofluoromethane	*101*		*79 - 123*	*08/22/13 13:27*	*08/30/13 18:13*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*08/22/13 13:27*	*08/30/13 18:13*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Phenol	400	U	400	41	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2-Methylphenol	400	U	400	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
N-Nitrosodi-n-propylamine	400	U	400	38	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Isophorone	400	U	400	40	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2-Nitrophenol	400	U	400	49	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
4-Chloroaniline	790	U	790	62	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Hexachlorobutadiene	400	U	400	43	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Caprolactam	400	U	400	79	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Hexachlorocyclopentadiene	400	U	400	49	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
1,1'-Biphenyl	890	U	890	890	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2-Nitroaniline	2000	U	2000	54	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2,6-Dinitrotoluene	400	U	400	50	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Acenaphthylene	400	U	400	43	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
3-Nitroaniline	2000	U	2000	55	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Acenaphthene	400	U	400	49	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2,4-Dinitrophenol	2000	U	2000	990	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
4-Nitrophenol	2000	U	2000	400	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Diethyl phthalate	400	U	400	44	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1

Client Sample ID: SB01-03 (5.0-6.0)
Date Collected: 08/19/13 14:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-4
Matrix: Solid
Percent Solids: 83.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	43	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
4-Nitroaniline	2000	U	2000	59	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
4-Bromophenyl phenyl ether	400	U	400	43	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Atrazine	400	U	400	28	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Pentachlorophenol	2000	U	2000	400	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Phenanthrene	400	U	400	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Anthracene	400	U	400	30	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Carbazole	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Fluoranthene	400	U	400	38	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Pyrene	400	U	400	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
3,3'-Dichlorobenzidine	790	U	790	34	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Benzo[a]anthracene	400	U	400	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Chrysene	400	U	400	25	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Benzo[k]fluoranthene	400	U	400	78	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Benzo[a]pyrene	400	U	400	62	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1
Benzo[g,h,i]perylene	400	U	400	26	ug/Kg	☼	08/25/13 12:13	08/31/13 22:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*74*		*46 - 130*	*08/25/13 12:13*	*08/31/13 22:17*	*1*
2-Fluorobiphenyl	*77*		*58 - 130*	*08/25/13 12:13*	*08/31/13 22:17*	*1*
Terphenyl-d14 (Surr)	*71*		*60 - 130*	*08/25/13 12:13*	*08/31/13 22:17*	*1*
Phenol-d5 (Surr)	*71*		*49 - 130*	*08/25/13 12:13*	*08/31/13 22:17*	*1*
2-Fluorophenol (Surr)	*86*		*40 - 130*	*08/25/13 12:13*	*08/31/13 22:17*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*58 - 130*	*08/25/13 12:13*	*08/31/13 22:17*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	240	U	240	19	ug/Kg	☼	08/21/13 16:21	08/22/13 17:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*98*		*70 - 131*	*08/21/13 16:21*	*08/22/13 17:42*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1800**	**J B**	5800	1600	ug/Kg	☼	08/28/13 08:03	08/29/13 01:39	1
ORO C24-C40	**2400**	**J B**	5800	1600	ug/Kg	☼	08/28/13 08:03	08/29/13 01:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*61*		*50 - 150*	*08/28/13 08:03*	*08/29/13 01:39*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-02 (0.5-1.5)
Date Collected: 08/19/13 14:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-5
Matrix: Solid
Percent Solids: 86.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	20	U	20	5.8	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Benzene	3.9	U	3.9	0.39	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Bromodichloromethane	3.9	U	3.9	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Bromoform	3.9	U	3.9	0.50	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Bromomethane	3.9	U *	3.9	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Carbon disulfide	3.9	U	3.9	0.95	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Carbon tetrachloride	3.9	U	3.9	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Chlorobenzene	3.9	U	3.9	0.41	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Chloroethane	3.9	U	3.9	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Chloroform	3.9	U	3.9	0.47	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Chloromethane	3.9	U	3.9	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
cis-1,2-Dichloroethene	3.9	U	3.9	0.60	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
cis-1,3-Dichloropropene	3.9	U	3.9	0.95	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Cyclohexane	3.9	U	3.9	0.74	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Dibromochloromethane	3.9	U	3.9	0.69	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,2-Dibromo-3-Chloropropane	3.9	U	3.9	2.6	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,2-Dichlorobenzene	3.9	U	3.9	0.56	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,3-Dichlorobenzene	3.9	U	3.9	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,4-Dichlorobenzene	3.9	U	3.9	0.65	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Dichlorodifluoromethane	3.9	U	3.9	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,1-Dichloroethane	3.9	U	3.9	0.65	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,2-Dichloroethane	3.9	U	3.9	0.65	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,1-Dichloroethene	3.9	U	3.9	0.59	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,2-Dichloropropane	3.9	U	3.9	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Diisopropyl ether	3.9	U	3.9	0.43	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Ethylbenzene	3.9	U	3.9	0.48	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Ethylene Dibromide	3.9	U	3.9	0.38	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Ethyl tert-butyl ether	3.9	U	3.9	0.44	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
2-Hexanone	20	U	20	3.9	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Isopropylbenzene	3.9	U	3.9	0.54	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Methyl acetate	3.9	U	3.9	3.6	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Methylcyclohexane	3.9	U	3.9	0.69	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Methylene Chloride	12	U	12	7.9	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Methyl Ethyl Ketone	20	U	20	3.2	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
methyl isobutyl ketone	20	U	20	3.2	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Methyl tert-butyl ether	3.9	U	3.9	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Naphthalene	3.9	U	3.9	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Styrene	3.9	U	3.9	0.60	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Tert-amyl methyl ether	3.9	U	3.9	0.35	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
tert-Butyl alcohol	3.9	U	3.9	2.7	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,1,2,2-Tetrachloroethane	3.9	U	3.9	0.57	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Tetrachloroethene	3.9	U	3.9	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Toluene	3.9	U	3.9	0.55	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
trans-1,2-Dichloroethene	3.9	U	3.9	0.60	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
trans-1,3-Dichloropropene	3.9	U	3.9	0.73	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,2,4-Trichlorobenzene	3.9	U	3.9	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,1,1-Trichloroethane	3.9	U	3.9	0.87	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,1,2-Trichloroethane	3.9	U	3.9	0.73	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Trichloroethene	3.9	U	3.9	0.38	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-02 (0.5-1.5)
Date Collected: 08/19/13 14:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-5
Matrix: Solid
Percent Solids: 86.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	3.9	U	3.9	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.9	U	3.9	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Vinyl chloride	3.9	U	3.9	0.73	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1
Xylenes, Total	7.9	U	7.9	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/22/13 13:27*	*08/30/13 18:37*	*1*
Dibromofluoromethane	*101*		*79 - 123*	*08/22/13 13:27*	*08/30/13 18:37*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*08/22/13 13:27*	*08/30/13 18:37*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	380	U	380	67	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Phenol	380	U	380	39	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Bis(2-chloroethyl)ether	380	U	380	52	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2-Chlorophenol	380	U	380	46	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2-Methylphenol	380	U	380	31	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
bis (2-chloroisopropyl) ether	380	U	380	35	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Acetophenone	380	U	380	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
3 & 4 Methylphenol	380	U	380	50	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
N-Nitrosodi-n-propylamine	380	U	380	37	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Hexachloroethane	380	U	380	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Nitrobenzene	380	U	380	30	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Isophorone	380	U	380	38	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2-Nitrophenol	380	U	380	47	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2,4-Dimethylphenol	380	U	380	51	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Bis(2-chloroethoxy)methane	380	U	380	45	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2,4-Dichlorophenol	380	U	380	40	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Naphthalene	**72**	**J**	380	35	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
4-Chloroaniline	760	U	760	60	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Hexachlorobutadiene	380	U	380	41	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Caprolactam	380	U	380	76	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
4-Chloro-3-methylphenol	380	U	380	40	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2-Methylnaphthalene	**93**	**J**	380	44	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Hexachlorocyclopentadiene	380	U	380	47	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2,4,6-Trichlorophenol	380	U	380	33	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2,4,5-Trichlorophenol	380	U	380	40	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
1,1'-Biphenyl	850	U	850	850	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2-Chloronaphthalene	380	U	380	40	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2-Nitroaniline	2000	U	2000	52	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Dimethyl phthalate	380	U	380	39	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2,6-Dinitrotoluene	380	U	380	48	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Acenaphthylene	380	U	380	41	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
3-Nitroaniline	2000	U	2000	53	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Acenaphthene	380	U	380	47	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2,4-Dinitrophenol	2000	U	2000	960	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
4-Nitrophenol	2000	U	2000	380	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Dibenzofuran	380	U	380	38	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
2,4-Dinitrotoluene	380	U	380	56	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Diethyl phthalate	380	U	380	43	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1

Client Sample ID: SB01-02 (0.5-1.5)
Date Collected: 08/19/13 14:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-5
Matrix: Solid
Percent Solids: 86.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	380	U	380	41	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
4-Chlorophenyl phenyl ether	380	U	380	51	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
4-Nitroaniline	2000	U	2000	56	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
N-Nitrosodiphenylamine	380	U	380	38	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
4-Bromophenyl phenyl ether	380	U	380	41	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Hexachlorobenzene	380	U	380	45	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Atrazine	380	U	380	26	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Pentachlorophenol	2000	U	2000	380	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Phenanthrene	**64**	**J**	380	31	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Anthracene	380	U	380	29	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Carbazole	380	U	380	35	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Di-n-butyl phthalate	380	U	380	35	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Fluoranthene	**58**	**J**	380	37	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Pyrene	**42**	**J**	380	31	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Butyl benzyl phthalate	380	U	380	30	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
3,3'-Dichlorobenzidine	760	U	760	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Benzo[a]anthracene	**47**	**J**	380	31	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Chrysene	**78**	**J**	380	24	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Bis(2-ethylhexyl) phthalate	380	U	380	33	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Di-n-octyl phthalate	380	U	380	33	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Benzo[b]fluoranthene	**130**	**J**	380	44	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Benzo[k]fluoranthene	380	U	380	75	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Benzo[a]pyrene	**79**	**J**	380	60	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Indeno[1,2,3-cd]pyrene	**74**	**J**	380	32	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Dibenz(a,h)anthracene	380	U	380	45	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1
Benzo[g,h,i]perylene	**94**	**J**	380	25	ug/Kg	☼	08/25/13 12:13	08/31/13 22:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*68*		*46 - 130*	*08/25/13 12:13*	*08/31/13 22:43*	*1*
2-Fluorobiphenyl	*74*		*58 - 130*	*08/25/13 12:13*	*08/31/13 22:43*	*1*
Terphenyl-d14 (Surr)	*63*		*60 - 130*	*08/25/13 12:13*	*08/31/13 22:43*	*1*
Phenol-d5 (Surr)	*66*		*49 - 130*	*08/25/13 12:13*	*08/31/13 22:43*	*1*
2-Fluorophenol (Surr)	*61*		*40 - 130*	*08/25/13 12:13*	*08/31/13 22:43*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*58 - 130*	*08/25/13 12:13*	*08/31/13 22:43*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**380**	**J**	430	33	ug/Kg	☼	08/21/13 16:21	08/22/13 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*106*		*70 - 131*	*08/21/13 16:21*	*08/22/13 18:02*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**37000**		5600	1600	ug/Kg	☼	08/30/13 13:38	09/01/13 18:19	1
ORO C24-C40	**50000**	**B**	5600	1600	ug/Kg	☼	08/30/13 13:38	09/01/13 18:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*78*		*50 - 150*	*08/30/13 13:38*	*09/01/13 18:19*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-02 (5.0-6.0)
Date Collected: 08/19/13 14:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-6
Matrix: Solid
Percent Solids: 75.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	57	U	57	17	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Benzene	11	U	11	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Bromodichloromethane	11	U	11	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Bromoform	11	U	11	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Bromomethane	11	U *	11	3.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Carbon disulfide	11	U	11	2.8	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Carbon tetrachloride	11	U	11	3.9	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Chlorobenzene	11	U	11	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Chloroethane	11	U	11	4.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Chloroform	11	U	11	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Chloromethane	11	U	11	2.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
cis-1,2-Dichloroethene	11	U	11	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
cis-1,3-Dichloropropene	11	U	11	2.8	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Cyclohexane	11	U	11	2.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Dibromochloromethane	11	U	11	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,2-Dibromo-3-Chloropropane	11	U	11	7.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,2-Dichlorobenzene	11	U	11	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,3-Dichlorobenzene	11	U	11	2.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,4-Dichlorobenzene	11	U	11	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Dichlorodifluoromethane	11	U	11	3.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,1-Dichloroethane	11	U	11	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,2-Dichloroethane	11	U	11	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,1-Dichloroethene	11	U	11	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,2-Dichloropropane	11	U	11	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Diisopropyl ether	11	U	11	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Ethylbenzene	11	U	11	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Ethylene Dibromide	11	U	11	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Ethyl tert-butyl ether	11	U	11	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
2-Hexanone	57	U	57	11	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Isopropylbenzene	11	U	11	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Methyl acetate	11	U	11	11	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Methylcyclohexane	11	U	11	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Methylene Chloride	34	U	34	23	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Methyl Ethyl Ketone	57	U	57	9.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
methyl isobutyl ketone	57	U	57	9.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Methyl tert-butyl ether	11	U	11	2.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Naphthalene	11	U	11	2.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Styrene	11	U	11	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Tert-amyl methyl ether	11	U	11	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
tert-Butyl alcohol	11	U	11	7.8	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,1,2,2-Tetrachloroethane	11	U	11	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Tetrachloroethene	11	U	11	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Toluene	11	U	11	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
trans-1,2-Dichloroethene	11	U	11	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
trans-1,3-Dichloropropene	11	U	11	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,2,4-Trichlorobenzene	11	U	11	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,1,1-Trichloroethane	11	U	11	2.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,1,2-Trichloroethane	11	U	11	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Trichloroethene	11	U	11	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1

Client Sample ID: SB01-02 (5.0-6.0)
Date Collected: 08/19/13 14:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-6
Matrix: Solid
Percent Solids: 75.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	11	U	11	2.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	11	U	11	4.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Vinyl chloride	11	U	11	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1
Xylenes, Total	23	U	23	4.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/22/13 13:27*	*08/30/13 19:03*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/22/13 13:27*	*08/30/13 19:03*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/22/13 13:27*	*08/30/13 19:03*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	430	U	430	76	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Phenol	430	U	430	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Bis(2-chloroethyl)ether	430	U	430	59	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2-Chlorophenol	430	U	430	52	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2-Methylphenol	430	U	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
bis (2-chloroisopropyl) ether	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Acetophenone	430	U	430	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
3 & 4 Methylphenol	430	U	430	56	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
N-Nitrosodi-n-propylamine	430	U	430	42	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Hexachloroethane	430	U	430	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Nitrobenzene	430	U	430	34	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Isophorone	430	U	430	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2-Nitrophenol	430	U	430	54	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2,4-Dimethylphenol	430	U	430	57	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Bis(2-chloroethoxy)methane	430	U	430	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2,4-Dichlorophenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Naphthalene	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
4-Chloroaniline	860	U	860	68	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Hexachlorobutadiene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Caprolactam	430	U	430	86	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
4-Chloro-3-methylphenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2-Methylnaphthalene	430	U	430	50	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Hexachlorocyclopentadiene	430	U	430	54	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2,4,6-Trichlorophenol	430	U	430	38	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2,4,5-Trichlorophenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
1,1'-Biphenyl	970	U	970	970	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2-Chloronaphthalene	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2-Nitroaniline	2200	U	2200	59	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Dimethyl phthalate	430	U	430	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2,6-Dinitrotoluene	430	U	430	55	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Acenaphthylene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
3-Nitroaniline	2200	U	2200	60	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Acenaphthene	430	U	430	54	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
4-Nitrophenol	2200	U	2200	430	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Dibenzofuran	430	U	430	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
2,4-Dinitrotoluene	430	U	430	64	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Diethyl phthalate	430	U	430	48	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1

Client Sample ID: SB01-02 (5.0-6.0)
Date Collected: 08/19/13 14:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-6
Matrix: Solid
Percent Solids: 75.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
4-Chlorophenyl phenyl ether	430	U	430	57	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
4-Nitroaniline	2200	U	2200	64	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
N-Nitrosodiphenylamine	430	U	430	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
4-Bromophenyl phenyl ether	430	U	430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Hexachlorobenzene	430	U	430	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Atrazine	430	U	430	30	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Pentachlorophenol	2200	U	2200	430	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Phenanthrene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Anthracene	430	U	430	33	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Carbazole	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Di-n-butyl phthalate	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Fluoranthene	430	U	430	42	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Pyrene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Butyl benzyl phthalate	430	U	430	34	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
3,3'-Dichlorobenzidine	860	U	860	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Benzo[a]anthracene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Chrysene	430	U	430	27	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Bis(2-ethylhexyl) phthalate	430	U	430	38	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Di-n-octyl phthalate	430	U	430	38	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Benzo[b]fluoranthene	430	U	430	50	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Benzo[k]fluoranthene	430	U	430	85	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Benzo[a]pyrene	430	U	430	68	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Indeno[1,2,3-cd]pyrene	430	U	430	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Dibenz(a,h)anthracene	430	U	430	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1
Benzo[g,h,i]perylene	430	U	430	29	ug/Kg	☼	08/25/13 12:13	08/31/13 23:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*66*		*46 - 130*	*08/25/13 12:13*	*08/31/13 23:09*	*1*
2-Fluorobiphenyl	*71*		*58 - 130*	*08/25/13 12:13*	*08/31/13 23:09*	*1*
Terphenyl-d14 (Surr)	*66*		*60 - 130*	*08/25/13 12:13*	*08/31/13 23:09*	*1*
Phenol-d5 (Surr)	*60*		*49 - 130*	*08/25/13 12:13*	*08/31/13 23:09*	*1*
2-Fluorophenol (Surr)	*68*		*40 - 130*	*08/25/13 12:13*	*08/31/13 23:09*	*1*
2,4,6-Tribromophenol (Surr)	*67*		*58 - 130*	*08/25/13 12:13*	*08/31/13 23:09*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**290**		280	21	ug/Kg	☼	08/21/13 16:21	08/22/13 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*111*		*70 - 131*	*08/21/13 16:21*	*08/22/13 18:22*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1800**	**J B**	6400	1800	ug/Kg	☼	08/28/13 08:03	08/29/13 02:10	1
ORO C24-C40	**2000**	**J B**	6400	1800	ug/Kg	☼	08/28/13 08:03	08/29/13 02:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*61*		*50 - 150*	*08/28/13 08:03*	*08/29/13 02:10*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-04 (0.0-1.0)
Date Collected: 08/19/13 15:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-7
Matrix: Solid
Percent Solids: 81.1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	41	U	41	12	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Benzene	8.1	U	8.1	0.80	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Bromodichloromethane	8.1	U	8.1	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Bromoform	8.1	U	8.1	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Bromomethane	8.1	U *	8.1	2.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Carbon disulfide	8.1	U	8.1	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Carbon tetrachloride	8.1	U	8.1	2.8	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Chlorobenzene	8.1	U	8.1	0.85	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Chloroethane	8.1	U	8.1	3.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Chloroform	8.1	U	8.1	0.96	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Chloromethane	8.1	U	8.1	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
cis-1,2-Dichloroethene	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
cis-1,3-Dichloropropene	8.1	U	8.1	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Cyclohexane	8.1	U	8.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Dibromochloromethane	8.1	U	8.1	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,2-Dibromo-3-Chloropropane	8.1	U	8.1	5.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,2-Dichlorobenzene	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,3-Dichlorobenzene	8.1	U	8.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,4-Dichlorobenzene	8.1	U	8.1	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Dichlorodifluoromethane	8.1	U	8.1	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,1-Dichloroethane	8.1	U	8.1	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,2-Dichloroethane	8.1	U	8.1	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,1-Dichloroethene	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,2-Dichloropropane	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Diisopropyl ether	8.1	U	8.1	0.89	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Ethylbenzene	8.1	U	8.1	0.99	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Ethylene Dibromide	8.1	U	8.1	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Ethyl tert-butyl ether	8.1	U	8.1	0.91	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
2-Hexanone	41	U	41	8.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Isopropylbenzene	8.1	U	8.1	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Methyl acetate	8.1	U	8.1	7.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Methylcyclohexane	8.1	U	8.1	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Methylene Chloride	24	U	24	16	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Methyl Ethyl Ketone	41	U	41	6.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
methyl isobutyl ketone	41	U	41	6.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Methyl tert-butyl ether	8.1	U	8.1	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Naphthalene	8.1	U	8.1	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Styrene	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Tert-amyl methyl ether	8.1	U	8.1	0.72	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
tert-Butyl alcohol	8.1	U	8.1	5.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,1,2,2-Tetrachloroethane	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Tetrachloroethene	8.1	U	8.1	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Toluene	8.1	U	8.1	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
trans-1,2-Dichloroethene	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
trans-1,3-Dichloropropene	8.1	U	8.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,2,4-Trichlorobenzene	8.1	U	8.1	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,1,1-Trichloroethane	8.1	U	8.1	1.8	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,1,2-Trichloroethane	8.1	U	8.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Trichloroethene	8.1	U	8.1	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-04 (0.0-1.0)
Date Collected: 08/19/13 15:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-7
Matrix: Solid
Percent Solids: 81.1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	8.1	U	8.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	8.1	U	8.1	3.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Vinyl chloride	8.1	U	8.1	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1
Xylenes, Total	16	U	16	3.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/22/13 13:27*	*08/30/13 19:29*	*1*
Dibromofluoromethane	*101*		*79 - 123*	*08/22/13 13:27*	*08/30/13 19:29*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/22/13 13:27*	*08/30/13 19:29*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	**87**	**J**	410	71	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Phenol	410	U	410	42	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Bis(2-chloroethyl)ether	410	U	410	55	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2-Chlorophenol	410	U	410	49	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2-Methylphenol	410	U	410	33	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
bis (2-chloroisopropyl) ether	410	U	410	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Acetophenone	410	U	410	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
3 & 4 Methylphenol	410	U	410	53	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
N-Nitrosodi-n-propylamine	410	U	410	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Hexachloroethane	410	U	410	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Nitrobenzene	410	U	410	32	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Isophorone	410	U	410	41	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2-Nitrophenol	410	U	410	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2,4-Dimethylphenol	410	U	410	54	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Bis(2-chloroethoxy)methane	410	U	410	48	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2,4-Dichlorophenol	410	U	410	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Naphthalene	**130**	**J**	410	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
4-Chloroaniline	810	U	810	64	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Hexachlorobutadiene	410	U	410	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Caprolactam	410	U	410	81	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
4-Chloro-3-methylphenol	410	U	410	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2-Methylnaphthalene	**180**	**J**	410	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Hexachlorocyclopentadiene	410	U	410	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2,4,6-Trichlorophenol	410	U	410	36	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2,4,5-Trichlorophenol	410	U	410	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
1,1'-Biphenyl	910	U	910	910	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2-Chloronaphthalene	410	U	410	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Dimethyl phthalate	410	U	410	42	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2,6-Dinitrotoluene	410	U	410	52	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Acenaphthylene	410	U	410	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
3-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Acenaphthene	410	U	410	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
4-Nitrophenol	2100	U	2100	410	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Dibenzofuran	**57**	**J**	410	41	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
2,4-Dinitrotoluene	410	U	410	60	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Diethyl phthalate	410	U	410	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1

Client Sample ID: SB01-04 (0.0-1.0)
Date Collected: 08/19/13 15:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-7
Matrix: Solid
Percent Solids: 81.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	410	U	410	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
4-Chlorophenyl phenyl ether	410	U	410	54	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
N-Nitrosodiphenylamine	410	U	410	41	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
4-Bromophenyl phenyl ether	410	U	410	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Hexachlorobenzene	410	U	410	48	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Atrazine	410	U	410	28	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Pentachlorophenol	2100	U	2100	410	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Phenanthrene	**150**	**J**	410	33	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Anthracene	410	U	410	31	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Carbazole	410	U	410	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Di-n-butyl phthalate	410	U	410	37	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Fluoranthene	**110**	**J**	410	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Pyrene	**76**	**J**	410	33	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Butyl benzyl phthalate	410	U	410	32	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
3,3'-Dichlorobenzidine	810	U	810	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Benzo[a]anthracene	**55**	**J**	410	33	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Chrysene	**96**	**J**	410	26	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Bis(2-ethylhexyl) phthalate	410	U	410	36	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Di-n-octyl phthalate	410	U	410	36	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Benzo[b]fluoranthene	**89**	**J**	410	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Benzo[k]fluoranthene	410	U	410	80	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Benzo[a]pyrene	410	U	410	64	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Indeno[1,2,3-cd]pyrene	410	U	410	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Dibenz(a,h)anthracene	410	U	410	48	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1
Benzo[g,h,i]perylene	**34**	**J**	410	27	ug/Kg	☼	08/25/13 12:13	08/31/13 23:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*67*		*46 - 130*	*08/25/13 12:13*	*08/31/13 23:34*	*1*
2-Fluorobiphenyl	*71*		*58 - 130*	*08/25/13 12:13*	*08/31/13 23:34*	*1*
Terphenyl-d14 (Surr)	*74*		*60 - 130*	*08/25/13 12:13*	*08/31/13 23:34*	*1*
Phenol-d5 (Surr)	*57*		*49 - 130*	*08/25/13 12:13*	*08/31/13 23:34*	*1*
2-Fluorophenol (Surr)	*64*		*40 - 130*	*08/25/13 12:13*	*08/31/13 23:34*	*1*
2,4,6-Tribromophenol (Surr)	*56*	*X*	*58 - 130*	*08/25/13 12:13*	*08/31/13 23:34*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**1400**		430	33	ug/Kg	☼	08/21/13 16:21	08/22/13 18:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*295*	*X*	*70 - 131*	*08/21/13 16:21*	*08/22/13 18:42*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**34000**		6100	1700	ug/Kg	☼	08/24/13 11:08	08/27/13 00:49	1
ORO C24-C40	**59000**	**B**	6100	1700	ug/Kg	☼	08/24/13 11:08	08/27/13 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*81*		*50 - 150*	*08/24/13 11:08*	*08/27/13 00:49*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-04 (5.0-6.0)
Date Collected: 08/19/13 15:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-8
Matrix: Solid
Percent Solids: 75.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	2700	U	2700	790	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Benzene	540	U	540	53	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Bromodichloromethane	540	U	540	90	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Bromoform	540	U	540	68	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Bromomethane	540	U *	540	150	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Carbon disulfide	540	U	540	130	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Carbon tetrachloride	540	U	540	180	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Chlorobenzene	540	U	540	56	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Chloroethane	540	U	540	200	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Chloroform	540	U	540	64	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Chloromethane	540	U	540	110	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
cis-1,2-Dichloroethene	540	U	540	82	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
cis-1,3-Dichloropropene	540	U	540	130	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Cyclohexane	540	U	540	100	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Dibromochloromethane	540	U	540	94	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,2-Dibromo-3-Chloropropane	540	U	540	360	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,2-Dichlorobenzene	540	U	540	76	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,3-Dichlorobenzene	540	U	540	100	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,4-Dichlorobenzene	540	U	540	88	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Dichlorodifluoromethane	540	U	540	140	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,1-Dichloroethane	540	U	540	89	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,2-Dichloroethane	540	U	540	88	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,1-Dichloroethene	540	U	540	81	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,2-Dichloropropane	540	U	540	80	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Diisopropyl ether	540	U	540	59	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Ethylbenzene	540	U	540	66	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Ethylene Dibromide	540	U	540	52	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Ethyl tert-butyl ether	540	U	540	60	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
2-Hexanone	2700	U	2700	540	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Isopropylbenzene	540	U	540	73	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Methyl acetate	540	U	540	500	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Methylcyclohexane	540	U	540	94	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Methylene Chloride	1600	U	1600	1100	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Methyl Ethyl Ketone	2700	U	2700	440	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
methyl isobutyl ketone	2700	U	2700	430	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Methyl tert-butyl ether	540	U	540	110	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Naphthalene	540	U	540	110	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Styrene	540	U	540	82	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Tert-amyl methyl ether	540	U	540	47	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
tert-Butyl alcohol	540	U	540	370	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,1,2,2-Tetrachloroethane	540	U	540	78	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Tetrachloroethene	540	U	540	90	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Toluene	540	U	540	75	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
trans-1,2-Dichloroethene	540	U	540	82	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
trans-1,3-Dichloropropene	540	U	540	99	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,2,4-Trichlorobenzene	540	U	540	79	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,1,1-Trichloroethane	540	U	540	120	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,1,2-Trichloroethane	540	U	540	99	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Trichloroethene	540	U	540	52	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-04 (5.0-6.0)
Date Collected: 08/19/13 15:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-8
Matrix: Solid
Percent Solids: 75.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	540	U	540	100	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
1,1,2-Trichloro-1,2,2-trifluoroethane	540	U	540	220	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Vinyl chloride	540	U	540	99	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50
Xylenes, Total	1100	U	1100	200	ug/Kg	☼	08/22/13 13:27	08/30/13 21:38	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/22/13 13:27*	*08/30/13 21:38*	*50*
Dibromofluoromethane	*94*		*79 - 123*	*08/22/13 13:27*	*08/30/13 21:38*	*50*
Toluene-d8 (Surr)	*95*		*80 - 120*	*08/22/13 13:27*	*08/30/13 21:38*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	430	U	430	76	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Phenol	430	U	430	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Bis(2-chloroethyl)ether	430	U	430	59	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2-Chlorophenol	430	U	430	52	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2-Methylphenol	430	U	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
bis (2-chloroisopropyl) ether	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Acetophenone	430	U	430	36	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
3 & 4 Methylphenol	430	U	430	56	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
N-Nitrosodi-n-propylamine	430	U	430	42	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Hexachloroethane	430	U	430	36	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Nitrobenzene	430	U	430	34	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Isophorone	430	U	430	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2-Nitrophenol	430	U	430	53	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2,4-Dimethylphenol	430	U	430	57	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Bis(2-chloroethoxy)methane	430	U	430	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2,4-Dichlorophenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Naphthalene	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
4-Chloroaniline	860	U	860	68	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Hexachlorobutadiene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Caprolactam	430	U	430	86	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
4-Chloro-3-methylphenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2-Methylnaphthalene	**82**	**J**	430	49	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Hexachlorocyclopentadiene	430	U	430	53	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2,4,6-Trichlorophenol	430	U	430	38	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2,4,5-Trichlorophenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
1,1'-Biphenyl	960	U	960	960	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2-Chloronaphthalene	430	U	430	46	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2-Nitroaniline	2200	U	2200	59	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Dimethyl phthalate	430	U	430	44	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2,6-Dinitrotoluene	430	U	430	55	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Acenaphthylene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
3-Nitroaniline	2200	U	2200	60	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Acenaphthene	**150**	**J**	430	53	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
4-Nitrophenol	2200	U	2200	430	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Dibenzofuran	**45**	**J**	430	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
2,4-Dinitrotoluene	430	U	430	64	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Diethyl phthalate	430	U	430	48	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1

Client Sample ID: SB01-04 (5.0-6.0)
Date Collected: 08/19/13 15:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-8
Matrix: Solid
Percent Solids: 75.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**510**		430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
4-Chlorophenyl phenyl ether	430	U	430	57	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
4-Nitroaniline	2200	U	2200	64	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
N-Nitrosodiphenylamine	**500**		430	43	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
4-Bromophenyl phenyl ether	430	U	430	47	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Hexachlorobenzene	430	U	430	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Atrazine	430	U	430	30	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Pentachlorophenol	2200	U	2200	430	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Phenanthrene	**79**	**J**	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Anthracene	**110**	**J**	430	33	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Carbazole	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Di-n-butyl phthalate	430	U	430	39	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Fluoranthene	430	U	430	42	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Pyrene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Butyl benzyl phthalate	430	U	430	34	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
3,3'-Dichlorobenzidine	860	U	860	36	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Benzo[a]anthracene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Chrysene	430	U	430	27	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Bis(2-ethylhexyl) phthalate	**50**	**J**	430	38	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Di-n-octyl phthalate	430	U	430	38	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Benzo[b]fluoranthene	430	U	430	49	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Benzo[k]fluoranthene	430	U	430	85	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Benzo[a]pyrene	430	U	430	68	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Indeno[1,2,3-cd]pyrene	430	U	430	36	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Dibenz(a,h)anthracene	430	U	430	51	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1
Benzo[g,h,i]perylene	430	U	430	29	ug/Kg	☼	08/25/13 12:13	08/31/13 23:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*52*		*46 - 130*	*08/25/13 12:13*	*08/31/13 23:59*	*1*
2-Fluorobiphenyl	*66*		*58 - 130*	*08/25/13 12:13*	*08/31/13 23:59*	*1*
Terphenyl-d14 (Surr)	*65*		*60 - 130*	*08/25/13 12:13*	*08/31/13 23:59*	*1*
Phenol-d5 (Surr)	*67*		*49 - 130*	*08/25/13 12:13*	*08/31/13 23:59*	*1*
2-Fluorophenol (Surr)	*79*		*40 - 130*	*08/25/13 12:13*	*08/31/13 23:59*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*58 - 130*	*08/25/13 12:13*	*08/31/13 23:59*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**40000**		11000	860	ug/Kg	☼	08/21/13 16:21	08/27/13 18:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*67*	*X*	*70 - 131*	*08/21/13 16:21*	*08/27/13 18:11*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**47000**		6400	1800	ug/Kg	☼	08/24/13 11:08	08/27/13 01:04	1
ORO C24-C40	**7300**	**B**	6400	1800	ug/Kg	☼	08/24/13 11:08	08/27/13 01:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*84*		*50 - 150*	*08/24/13 11:08*	*08/27/13 01:04*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-06 (1.0-2.0)
Date Collected: 08/19/13 16:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-9
Matrix: Solid
Percent Solids: 84.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	26	U	26	7.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Benzene	5.2	U	5.2	0.51	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Bromodichloromethane	5.2	U	5.2	0.87	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Bromoform	5.2	U	5.2	0.65	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Bromomethane	5.2	U *	5.2	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Carbon disulfide	5.2	U	5.2	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Carbon tetrachloride	5.2	U	5.2	1.8	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Chlorobenzene	5.2	U	5.2	0.54	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Chloroethane	5.2	U	5.2	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Chloroform	5.2	U	5.2	0.61	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Chloromethane	5.2	U	5.2	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
cis-1,2-Dichloroethene	5.2	U	5.2	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
cis-1,3-Dichloropropene	5.2	U	5.2	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Cyclohexane	5.2	U	5.2	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Dibromochloromethane	5.2	U	5.2	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,2-Dibromo-3-Chloropropane	5.2	U	5.2	3.4	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,2-Dichlorobenzene	5.2	U	5.2	0.73	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,3-Dichlorobenzene	5.2	U	5.2	0.98	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,4-Dichlorobenzene	5.2	U	5.2	0.85	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Dichlorodifluoromethane	5.2	U	5.2	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,1-Dichloroethane	5.2	U	5.2	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,2-Dichloroethane	5.2	U	5.2	0.85	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,1-Dichloroethene	5.2	U	5.2	0.77	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,2-Dichloropropane	5.2	U	5.2	0.76	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Diisopropyl ether	5.2	U	5.2	0.57	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Ethylbenzene	5.2	U	5.2	0.63	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Ethylene Dibromide	5.2	U	5.2	0.50	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Ethyl tert-butyl ether	5.2	U	5.2	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
2-Hexanone	26	U	26	5.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Isopropylbenzene	5.2	U	5.2	0.70	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Methyl acetate	5.2	U	5.2	4.7	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Methylcyclohexane	5.2	U	5.2	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Methylene Chloride	15	U	15	10	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Methyl Ethyl Ketone	26	U	26	4.2	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
methyl isobutyl ketone	26	U	26	4.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Methyl tert-butyl ether	5.2	U	5.2	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Naphthalene	5.2	U	5.2	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Styrene	5.2	U	5.2	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Tert-amyl methyl ether	5.2	U	5.2	0.45	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
tert-Butyl alcohol	5.2	U	5.2	3.5	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,1,2,2-Tetrachloroethane	5.2	U	5.2	0.74	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Tetrachloroethene	5.2	U	5.2	0.87	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Toluene	5.2	U	5.2	0.72	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
trans-1,2-Dichloroethene	5.2	U	5.2	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
trans-1,3-Dichloropropene	5.2	U	5.2	0.95	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,2,4-Trichlorobenzene	5.2	U	5.2	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,1,1-Trichloroethane	5.2	U	5.2	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,1,2-Trichloroethane	5.2	U	5.2	0.95	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Trichloroethene	5.2	U	5.2	0.50	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1

Client Sample ID: SB01-06 (1.0-2.0)
Date Collected: 08/19/13 16:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-9
Matrix: Solid
Percent Solids: 84.0

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.2	U	5.2	0.98	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.2	U	5.2	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Vinyl chloride	5.2	U	5.2	0.95	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1
Xylenes, Total	10	U	10	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 19:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 122*	*08/22/13 13:27*	*08/30/13 19:55*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/22/13 13:27*	*08/30/13 19:55*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*08/22/13 13:27*	*08/30/13 19:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	390	U	390	69	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Phenol	390	U	390	40	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Bis(2-chloroethyl)ether	390	U	390	54	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2-Chlorophenol	390	U	390	48	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2-Methylphenol	390	U	390	32	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
bis (2-chloroisopropyl) ether	390	U	390	36	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Acetophenone	390	U	390	33	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
3 & 4 Methylphenol	390	U	390	51	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
N-Nitrosodi-n-propylamine	390	U	390	38	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Hexachloroethane	390	U	390	33	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Nitrobenzene	390	U	390	31	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Isophorone	390	U	390	39	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2-Nitrophenol	390	U	390	49	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2,4-Dimethylphenol	390	U	390	52	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Bis(2-chloroethoxy)methane	390	U	390	46	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2,4-Dichlorophenol	390	U	390	42	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Naphthalene	390	U	390	36	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
4-Chloroaniline	790	U	790	62	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Hexachlorobutadiene	390	U	390	43	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Caprolactam	390	U	390	79	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
4-Chloro-3-methylphenol	390	U	390	42	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2-Methylnaphthalene	**55**	**J**	390	45	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Hexachlorocyclopentadiene	390	U	390	49	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2,4,6-Trichlorophenol	390	U	390	35	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2,4,5-Trichlorophenol	390	U	390	42	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
1,1'-Biphenyl	880	U	880	880	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2-Chloronaphthalene	390	U	390	42	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2-Nitroaniline	2000	U	2000	54	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Dimethyl phthalate	390	U	390	40	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2,6-Dinitrotoluene	390	U	390	50	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Acenaphthylene	390	U	390	43	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
3-Nitroaniline	2000	U	2000	55	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Acenaphthene	390	U	390	49	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2,4-Dinitrophenol	2000	U	2000	990	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
4-Nitrophenol	2000	U	2000	390	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Dibenzofuran	390	U	390	39	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
2,4-Dinitrotoluene	390	U	390	58	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Diethyl phthalate	390	U	390	44	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1

Client Sample ID: SB01-06 (1.0-2.0)
Date Collected: 08/19/13 16:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-9
Matrix: Solid
Percent Solids: 84.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	390	U	390	43	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
4-Chlorophenyl phenyl ether	390	U	390	52	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
4-Nitroaniline	2000	U	2000	58	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
N-Nitrosodiphenylamine	390	U	390	39	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
4-Bromophenyl phenyl ether	390	U	390	43	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Hexachlorobenzene	390	U	390	46	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Atrazine	390	U	390	27	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Pentachlorophenol	2000	U	2000	390	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Phenanthrene	**71**	**J**	390	32	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Anthracene	390	U	390	30	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Carbazole	390	U	390	36	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Di-n-butyl phthalate	390	U	390	36	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Fluoranthene	**76**	**J**	390	38	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Pyrene	**44**	**J**	390	32	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Butyl benzyl phthalate	390	U	390	31	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
3,3'-Dichlorobenzidine	790	U	790	33	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Benzo[a]anthracene	**34**	**J**	390	32	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Chrysene	**57**	**J**	390	25	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Bis(2-ethylhexyl) phthalate	390	U	390	35	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Di-n-octyl phthalate	390	U	390	35	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Benzo[b]fluoranthene	**54**	**J**	390	45	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Benzo[k]fluoranthene	390	U	390	77	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Benzo[a]pyrene	390	U	390	62	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Indeno[1,2,3-cd]pyrene	390	U	390	33	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Dibenz(a,h)anthracene	390	U	390	46	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1
Benzo[g,h,i]perylene	390	U	390	26	ug/Kg	☼	08/25/13 12:13	09/01/13 00:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*69*		*46 - 130*	*08/25/13 12:13*	*09/01/13 00:25*	*1*
2-Fluorobiphenyl	*68*		*58 - 130*	*08/25/13 12:13*	*09/01/13 00:25*	*1*
Terphenyl-d14 (Surr)	*66*		*60 - 130*	*08/25/13 12:13*	*09/01/13 00:25*	*1*
Phenol-d5 (Surr)	*66*		*49 - 130*	*08/25/13 12:13*	*09/01/13 00:25*	*1*
2-Fluorophenol (Surr)	*74*		*40 - 130*	*08/25/13 12:13*	*09/01/13 00:25*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*58 - 130*	*08/25/13 12:13*	*09/01/13 00:25*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	290	U	290	22	ug/Kg	☼	08/21/13 16:21	08/23/13 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*91*		*70 - 131*	*08/21/13 16:21*	*08/23/13 15:07*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**5900**		5900	1700	ug/Kg	☼	08/30/13 13:38	09/01/13 16:45	1
ORO C24-C40	**7300**	**B**	5900	1700	ug/Kg	☼	08/30/13 13:38	09/01/13 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*75*		*50 - 150*	*08/30/13 13:38*	*09/01/13 16:45*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-06 (6.5-7.5)
Date Collected: 08/19/13 16:20
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-10
Matrix: Solid
Percent Solids: 67.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	65		26	7.7	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Benzene	5.3	U	5.3	0.52	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Bromodichloromethane	5.3	U	5.3	0.88	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Bromoform	5.3	U	5.3	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Bromomethane	5.3	U *	5.3	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Carbon disulfide	5.3	U	5.3	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Carbon tetrachloride	5.3	U	5.3	1.8	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Chlorobenzene	5.3	U	5.3	0.55	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Chloroethane	5.3	U	5.3	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Chloroform	5.3	U	5.3	0.62	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Chloromethane	5.3	U	5.3	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
cis-1,2-Dichloroethene	5.3	U	5.3	0.80	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
cis-1,3-Dichloropropene	5.3	U	5.3	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Cyclohexane	5.3	U	5.3	0.99	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Dibromochloromethane	5.3	U	5.3	0.91	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,2-Dibromo-3-Chloropropane	5.3	U	5.3	3.5	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,2-Dichlorobenzene	5.3	U	5.3	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,3-Dichlorobenzene	5.3	U	5.3	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,4-Dichlorobenzene	5.3	U	5.3	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Dichlorodifluoromethane	5.3	U	5.3	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,1-Dichloroethane	5.3	U	5.3	0.87	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,2-Dichloroethane	5.3	U	5.3	0.86	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,1-Dichloroethene	5.3	U	5.3	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,2-Dichloropropane	5.3	U	5.3	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Diisopropyl ether	5.3	U	5.3	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Ethylbenzene	5.3	U	5.3	0.64	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Ethylene Dibromide	5.3	U	5.3	0.50	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Ethyl tert-butyl ether	5.3	U	5.3	0.59	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
2-Hexanone	26	U	26	5.3	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Isopropylbenzene	5.3	U	5.3	0.71	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Methyl acetate	5.3	U	5.3	4.8	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Methylcyclohexane	5.3	U	5.3	0.91	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Methylene Chloride	16	U	16	11	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Methyl Ethyl Ketone	26	U	26	4.3	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
methyl isobutyl ketone	26	U	26	4.2	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Methyl tert-butyl ether	5.3	U	5.3	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Naphthalene	5.3	U	5.3	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Styrene	5.3	U	5.3	0.80	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Tert-amyl methyl ether	5.3	U	5.3	0.46	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
tert-Butyl alcohol	5.3	U	5.3	3.6	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,1,2,2-Tetrachloroethane	5.3	U	5.3	0.76	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Tetrachloroethene	5.3	U	5.3	0.88	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Toluene	5.3	U	5.3	0.74	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
trans-1,2-Dichloroethene	5.3	U	5.3	0.80	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
trans-1,3-Dichloropropene	5.3	U	5.3	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,2,4-Trichlorobenzene	5.3	U	5.3	0.77	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,1,1-Trichloroethane	5.3	U	5.3	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,1,2-Trichloroethane	5.3	U	5.3	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Trichloroethene	5.3	U	5.3	0.50	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1

Client Sample ID: SB01-06 (6.5-7.5)
Date Collected: 08/19/13 16:20
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-10
Matrix: Solid
Percent Solids: 67.9

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.3	U	5.3	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.3	U	5.3	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Vinyl chloride	5.3	U	5.3	0.97	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1
Xylenes, Total	11	U	11	2.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 122*	*08/22/13 13:27*	*08/30/13 20:21*	*1*
Dibromofluoromethane	*100*		*79 - 123*	*08/22/13 13:27*	*08/30/13 20:21*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/22/13 13:27*	*08/30/13 20:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	480	U	480	85	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Phenol	480	U	480	50	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Bis(2-chloroethyl)ether	480	U	480	66	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2-Chlorophenol	480	U	480	59	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2-Methylphenol	480	U	480	40	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
bis (2-chloroisopropyl) ether	480	U	480	44	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Acetophenone	480	U	480	41	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
3 & 4 Methylphenol	480	U	480	63	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
N-Nitrosodi-n-propylamine	480	U	480	47	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Hexachloroethane	480	U	480	41	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Nitrobenzene	480	U	480	38	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Isophorone	480	U	480	48	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2-Nitrophenol	480	U	480	60	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2,4-Dimethylphenol	480	U	480	65	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Bis(2-chloroethoxy)methane	480	U	480	57	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2,4-Dichlorophenol	480	U	480	51	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Naphthalene	480	U	480	44	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
4-Chloroaniline	970	U	970	76	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Hexachlorobutadiene	480	U	480	53	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Caprolactam	480	U	480	97	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
4-Chloro-3-methylphenol	480	U	480	51	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2-Methylnaphthalene	480	U	480	56	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Hexachlorocyclopentadiene	480	U	480	60	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2,4,6-Trichlorophenol	480	U	480	43	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2,4,5-Trichlorophenol	480	U	480	51	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
1,1'-Biphenyl	1100	U	1100	1100	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2-Chloronaphthalene	480	U	480	51	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2-Nitroaniline	2500	U	2500	66	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Dimethyl phthalate	480	U	480	50	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2,6-Dinitrotoluene	480	U	480	62	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Acenaphthylene	480	U	480	53	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
3-Nitroaniline	2500	U	2500	68	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Acenaphthene	480	U	480	60	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2,4-Dinitrophenol	2500	U	2500	1200	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
4-Nitrophenol	2500	U	2500	480	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Dibenzofuran	480	U	480	48	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
2,4-Dinitrotoluene	480	U	480	72	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Diethyl phthalate	480	U	480	54	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1

Client Sample ID: SB01-06 (6.5-7.5)
Date Collected: 08/19/13 16:20
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-10
Matrix: Solid
Percent Solids: 67.9

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	480	U	480	53	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
4-Chlorophenyl phenyl ether	480	U	480	65	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
4-Nitroaniline	2500	U	2500	72	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
4,6-Dinitro-2-methylphenol	2500	U	2500	250	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
N-Nitrosodiphenylamine	480	U	480	48	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
4-Bromophenyl phenyl ether	480	U	480	53	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Hexachlorobenzene	480	U	480	57	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Atrazine	480	U	480	34	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Pentachlorophenol	2500	U	2500	480	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Phenanthrene	480	U	480	40	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Anthracene	480	U	480	37	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Carbazole	480	U	480	44	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Di-n-butyl phthalate	480	U	480	44	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Fluoranthene	480	U	480	47	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Pyrene	480	U	480	40	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Butyl benzyl phthalate	480	U	480	38	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
3,3'-Dichlorobenzidine	970	U	970	41	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Benzo[a]anthracene	480	U	480	40	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Chrysene	480	U	480	31	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Bis(2-ethylhexyl) phthalate	**43**	**J**	480	43	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Di-n-octyl phthalate	480	U	480	43	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Benzo[b]fluoranthene	480	U	480	56	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Benzo[k]fluoranthene	480	U	480	95	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Benzo[a]pyrene	480	U	480	76	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Indeno[1,2,3-cd]pyrene	480	U	480	41	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Dibenz(a,h)anthracene	480	U	480	57	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1
Benzo[g,h,i]perylene	480	U	480	32	ug/Kg	☼	08/25/13 12:13	09/01/13 00:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*55*		*46 - 130*	*08/25/13 12:13*	*09/01/13 00:50*	*1*
2-Fluorobiphenyl	*69*		*58 - 130*	*08/25/13 12:13*	*09/01/13 00:50*	*1*
Terphenyl-d14 (Surr)	*68*		*60 - 130*	*08/25/13 12:13*	*09/01/13 00:50*	*1*
Phenol-d5 (Surr)	*67*		*49 - 130*	*08/25/13 12:13*	*09/01/13 00:50*	*1*
2-Fluorophenol (Surr)	*77*		*40 - 130*	*08/25/13 12:13*	*09/01/13 00:50*	*1*
2,4,6-Tribromophenol (Surr)	*93*		*58 - 130*	*08/25/13 12:13*	*09/01/13 00:50*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**290**	**J**	320	24	ug/Kg	☼	08/21/13 16:21	08/23/13 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*96*		*70 - 131*	*08/21/13 16:21*	*08/23/13 15:27*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2500**	**J**	7200	2000	ug/Kg	☼	08/24/13 11:08	08/27/13 01:36	1
ORO C24-C40	**6400**	**J B**	7200	2000	ug/Kg	☼	08/24/13 11:08	08/27/13 01:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*77*		*50 - 150*	*08/24/13 11:08*	*08/27/13 01:36*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-05 (8.5-9.5)
Date Collected: 08/19/13 16:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-11
Matrix: Solid
Percent Solids: 75.1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**150**		28	8.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Benzene	5.5	U	5.5	0.54	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Bromodichloromethane	5.5	U	5.5	0.93	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Bromoform	5.5	U	5.5	0.70	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Bromomethane	5.5	U *	5.5	1.6	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Carbon disulfide	5.5	U	5.5	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Carbon tetrachloride	5.5	U	5.5	1.9	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Chlorobenzene	5.5	U	5.5	0.58	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Chloroethane	5.5	U	5.5	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Chloroform	5.5	U	5.5	0.65	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Chloromethane	5.5	U	5.5	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
cis-1,2-Dichloroethene	5.5	U	5.5	0.84	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
cis-1,3-Dichloropropene	5.5	U	5.5	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Cyclohexane	5.5	U	5.5	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Dibromochloromethane	5.5	U	5.5	0.96	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,2-Dibromo-3-Chloropropane	5.5	U	5.5	3.7	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,2-Dichlorobenzene	5.5	U	5.5	0.79	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,3-Dichlorobenzene	5.5	U	5.5	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,4-Dichlorobenzene	5.5	U	5.5	0.91	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Dichlorodifluoromethane	5.5	U	5.5	1.4	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,1-Dichloroethane	5.5	U	5.5	0.92	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,2-Dichloroethane	5.5	U	5.5	0.91	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,1-Dichloroethene	5.5	U	5.5	0.83	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,2-Dichloropropane	5.5	U	5.5	0.82	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Diisopropyl ether	5.5	U	5.5	0.61	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Ethylbenzene	5.5	U	5.5	0.68	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Ethylene Dibromide	5.5	U	5.5	0.53	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Ethyl tert-butyl ether	5.5	U	5.5	0.62	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
2-Hexanone	28	U	28	5.5	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Isopropylbenzene	5.5	U	5.5	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Methyl acetate	5.5	U	5.5	5.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Methylcyclohexane	5.5	U	5.5	0.96	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Methylene Chloride	17	U	17	11	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Methyl Ethyl Ketone	**32**		28	4.5	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
methyl isobutyl ketone	28	U	28	4.4	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Methyl tert-butyl ether	5.5	U	5.5	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Naphthalene	5.5	U	5.5	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Styrene	5.5	U	5.5	0.84	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Tert-amyl methyl ether	5.5	U	5.5	0.49	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
tert-Butyl alcohol	5.5	U	5.5	3.8	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,1,2,2-Tetrachloroethane	5.5	U	5.5	0.80	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Tetrachloroethene	5.5	U	5.5	0.93	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Toluene	5.5	U	5.5	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
trans-1,2-Dichloroethene	5.5	U	5.5	0.84	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
trans-1,3-Dichloropropene	5.5	U	5.5	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,2,4-Trichlorobenzene	5.5	U	5.5	0.81	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,1,1-Trichloroethane	5.5	U	5.5	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,1,2-Trichloroethane	5.5	U	5.5	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Trichloroethene	5.5	U	5.5	0.53	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1

Client Sample ID: SB01-05 (8.5-9.5)
Date Collected: 08/19/13 16:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-11
Matrix: Solid
Percent Solids: 75.1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.5	U	5.5	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.5	U	5.5	2.2	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Vinyl chloride	5.5	U	5.5	1.0	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1
Xylenes, Total	11	U	11	2.1	ug/Kg	☼	08/22/13 13:27	08/30/13 20:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/22/13 13:27*	*08/30/13 20:46*	*1*
Dibromofluoromethane	*100*		*79 - 123*	*08/22/13 13:27*	*08/30/13 20:46*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/22/13 13:27*	*08/30/13 20:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	430	U	430	76	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Phenol	430	U	430	45	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Bis(2-chloroethyl)ether	430	U	430	59	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2-Chlorophenol	430	U	430	52	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2-Methylphenol	430	U	430	35	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
bis (2-chloroisopropyl) ether	430	U	430	39	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Acetophenone	430	U	430	37	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
3 & 4 Methylphenol	430	U	430	56	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
N-Nitrosodi-n-propylamine	430	U	430	42	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Hexachloroethane	430	U	430	37	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Nitrobenzene	430	U	430	34	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Isophorone	430	U	430	43	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2-Nitrophenol	430	U	430	54	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2,4-Dimethylphenol	430	U	430	58	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Bis(2-chloroethoxy)methane	430	U	430	51	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2,4-Dichlorophenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Naphthalene	430	U	430	39	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
4-Chloroaniline	860	U	860	68	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Hexachlorobutadiene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Caprolactam	430	U	430	86	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
4-Chloro-3-methylphenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2-Methylnaphthalene	430	U	430	50	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Hexachlorocyclopentadiene	430	U	430	54	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2,4,6-Trichlorophenol	430	U	430	38	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2,4,5-Trichlorophenol	430	U	430	46	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
1,1'-Biphenyl	970	U	970	970	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2-Chloronaphthalene	430	U	430	46	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2-Nitroaniline	2200	U	2200	59	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Dimethyl phthalate	430	U	430	45	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2,6-Dinitrotoluene	430	U	430	55	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Acenaphthylene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
3-Nitroaniline	2200	U	2200	60	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Acenaphthene	430	U	430	54	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
4-Nitrophenol	2200	U	2200	430	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Dibenzofuran	430	U	430	43	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
2,4-Dinitrotoluene	430	U	430	64	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Diethyl phthalate	430	U	430	48	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1

Client Sample ID: SB01-05 (8.5-9.5)
Date Collected: 08/19/13 16:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-11
Matrix: Solid
Percent Solids: 75.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	430	U	430	47	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
4-Chlorophenyl phenyl ether	430	U	430	58	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
4-Nitroaniline	2200	U	2200	64	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
N-Nitrosodiphenylamine	430	U	430	43	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
4-Bromophenyl phenyl ether	430	U	430	47	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Hexachlorobenzene	430	U	430	51	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Atrazine	430	U	430	30	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Pentachlorophenol	2200	U	2200	430	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Phenanthrene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Anthracene	430	U	430	33	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Carbazole	430	U	430	39	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Di-n-butyl phthalate	430	U	430	39	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Fluoranthene	430	U	430	42	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Pyrene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Butyl benzyl phthalate	430	U	430	34	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
3,3'-Dichlorobenzidine	860	U	860	37	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Benzo[a]anthracene	430	U	430	35	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Chrysene	430	U	430	28	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Bis(2-ethylhexyl) phthalate	430	U	430	38	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Di-n-octyl phthalate	430	U	430	38	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Benzo[b]fluoranthene	430	U	430	50	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Benzo[k]fluoranthene	430	U	430	85	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Benzo[a]pyrene	430	U	430	68	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Indeno[1,2,3-cd]pyrene	430	U	430	37	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Dibenz(a,h)anthracene	430	U	430	51	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1
Benzo[g,h,i]perylene	430	U	430	29	ug/Kg	☼	08/25/13 12:13	09/01/13 01:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*36*	*X*	*46 - 130*	*08/25/13 12:13*	*09/01/13 01:16*	*1*
2-Fluorobiphenyl	*60*		*58 - 130*	*08/25/13 12:13*	*09/01/13 01:16*	*1*
Terphenyl-d14 (Surr)	*50*	*X*	*60 - 130*	*08/25/13 12:13*	*09/01/13 01:16*	*1*
Phenol-d5 (Surr)	*54*		*49 - 130*	*08/25/13 12:13*	*09/01/13 01:16*	*1*
2-Fluorophenol (Surr)	*69*		*40 - 130*	*08/25/13 12:13*	*09/01/13 01:16*	*1*
2,4,6-Tribromophenol (Surr)	*66*		*58 - 130*	*08/25/13 12:13*	*09/01/13 01:16*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**500**		320	24	ug/Kg	☼	08/21/13 16:21	08/23/13 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*92*		*70 - 131*	*08/21/13 16:21*	*08/23/13 15:47*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**25000**		6500	1800	ug/Kg	☼	08/24/13 11:08	08/27/13 01:51	1
ORO C24-C40	**43000**	**B**	6500	1800	ug/Kg	☼	08/24/13 11:08	08/27/13 01:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*50 - 150*	*08/24/13 11:08*	*08/27/13 01:51*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: SB01-05 (1.5-2.5)
Date Collected: 08/19/13 16:45
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-12
Matrix: Solid
Percent Solids: 86.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	U	22	6.6	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Benzene	4.5	U	4.5	0.44	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Bromodichloromethane	4.5	U	4.5	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Bromoform	4.5	U	4.5	0.57	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Bromomethane	4.5	U *	4.5	1.3	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Carbon disulfide	4.5	U	4.5	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Carbon tetrachloride	4.5	U	4.5	1.5	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Chlorobenzene	4.5	U	4.5	0.47	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Chloroethane	4.5	U	4.5	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Chloroform	4.5	U	4.5	0.53	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Chloromethane	4.5	U	4.5	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
cis-1,2-Dichloroethene	4.5	U	4.5	0.68	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
cis-1,3-Dichloropropene	4.5	U	4.5	1.1	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Cyclohexane	4.5	U	4.5	0.84	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Dibromochloromethane	4.5	U	4.5	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,2-Dibromo-3-Chloropropane	4.5	U	4.5	3.0	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,2-Dichlorobenzene	4.5	U	4.5	0.64	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,3-Dichlorobenzene	4.5	U	4.5	0.85	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,4-Dichlorobenzene	4.5	U	4.5	0.74	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Dichlorodifluoromethane	4.5	U	4.5	1.2	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,1-Dichloroethane	4.5	U	4.5	0.74	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,2-Dichloroethane	4.5	U	4.5	0.74	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,1-Dichloroethene	4.5	U	4.5	0.67	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,2-Dichloropropane	4.5	U	4.5	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Diisopropyl ether	4.5	U	4.5	0.49	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Ethylbenzene	4.5	U	4.5	0.55	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Ethylene Dibromide	4.5	U	4.5	0.43	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Ethyl tert-butyl ether	4.5	U	4.5	0.50	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
2-Hexanone	22	U	22	4.5	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Isopropylbenzene	4.5	U	4.5	0.61	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Methyl acetate	4.5	U	4.5	4.1	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Methylcyclohexane	4.5	U	4.5	0.78	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Methylene Chloride	13	U	13	9.0	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Methyl Ethyl Ketone	22	U	22	3.7	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
methyl isobutyl ketone	22	U	22	3.6	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Methyl tert-butyl ether	4.5	U	4.5	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Naphthalene	4.5	U	4.5	0.90	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Styrene	4.5	U	4.5	0.68	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Tert-amyl methyl ether	4.5	U	4.5	0.39	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
tert-Butyl alcohol	4.5	U	4.5	3.1	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,1,2,2-Tetrachloroethane	4.5	U	4.5	0.65	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Tetrachloroethene	4.5	U	4.5	0.75	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Toluene	4.5	U	4.5	0.63	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
trans-1,2-Dichloroethene	4.5	U	4.5	0.68	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
trans-1,3-Dichloropropene	4.5	U	4.5	0.83	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,2,4-Trichlorobenzene	4.5	U	4.5	0.66	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,1,1-Trichloroethane	4.5	U	4.5	0.99	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,1,2-Trichloroethane	4.5	U	4.5	0.83	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Trichloroethene	4.5	U	4.5	0.43	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1

Client Sample ID: SB01-05 (1.5-2.5)
Date Collected: 08/19/13 16:45
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-12
Matrix: Solid
Percent Solids: 86.4

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.5	U	4.5	0.85	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.5	U	4.5	1.8	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Vinyl chloride	4.5	U	4.5	0.83	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1
Xylenes, Total	9.0	U	9.0	1.7	ug/Kg	☼	08/22/13 13:27	08/30/13 21:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 122*	*08/22/13 13:27*	*08/30/13 21:12*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/22/13 13:27*	*08/30/13 21:12*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/22/13 13:27*	*08/30/13 21:12*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	380	U	380	66	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Phenol	380	U	380	39	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Bis(2-chloroethyl)ether	380	U	380	51	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2-Chlorophenol	380	U	380	46	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2-Methylphenol	380	U	380	31	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
bis (2-chloroisopropyl) ether	380	U	380	34	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Acetophenone	380	U	380	32	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
3 & 4 Methylphenol	380	U	380	49	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
N-Nitrosodi-n-propylamine	380	U	380	37	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Hexachloroethane	380	U	380	32	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Nitrobenzene	380	U	380	30	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Isophorone	380	U	380	38	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2-Nitrophenol	380	U	380	47	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2,4-Dimethylphenol	380	U	380	50	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Bis(2-chloroethoxy)methane	380	U	380	45	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2,4-Dichlorophenol	380	U	380	40	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Naphthalene	380	U	380	34	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
4-Chloroaniline	750	U	750	59	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Hexachlorobutadiene	380	U	380	41	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Caprolactam	380	U	380	75	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
4-Chloro-3-methylphenol	380	U	380	40	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2-Methylnaphthalene	380	U	380	43	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Hexachlorocyclopentadiene	380	U	380	47	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2,4,6-Trichlorophenol	380	U	380	33	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2,4,5-Trichlorophenol	380	U	380	40	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
1,1'-Biphenyl	840	U	840	840	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2-Chloronaphthalene	380	U	380	40	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2-Nitroaniline	1900	U	1900	51	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Dimethyl phthalate	380	U	380	39	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2,6-Dinitrotoluene	380	U	380	48	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Acenaphthylene	380	U	380	41	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
3-Nitroaniline	1900	U	1900	53	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Acenaphthene	380	U	380	47	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2,4-Dinitrophenol	1900	U	1900	950	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
4-Nitrophenol	1900	U	1900	380	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Dibenzofuran	380	U	380	38	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
2,4-Dinitrotoluene	380	U	380	56	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Diethyl phthalate	380	U	380	42	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1

Client Sample ID: SB01-05 (1.5-2.5)
Date Collected: 08/19/13 16:45
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-12
Matrix: Solid
Percent Solids: 86.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	380	U	380	41	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
4-Chlorophenyl phenyl ether	380	U	380	50	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
4-Nitroaniline	1900	U	1900	56	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
4,6-Dinitro-2-methylphenol	1900	U	1900	190	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
N-Nitrosodiphenylamine	380	U	380	38	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
4-Bromophenyl phenyl ether	380	U	380	41	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Hexachlorobenzene	380	U	380	45	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Atrazine	380	U	380	26	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Pentachlorophenol	1900	U	1900	380	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Phenanthrene	380	U	380	31	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Anthracene	380	U	380	29	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Carbazole	380	U	380	34	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Di-n-butyl phthalate	380	U	380	34	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Fluoranthene	380	U	380	37	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Pyrene	380	U	380	31	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Butyl benzyl phthalate	380	U	380	30	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
3,3'-Dichlorobenzidine	750	U	750	32	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Benzo[a]anthracene	380	U	380	31	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Chrysene	380	U	380	24	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Bis(2-ethylhexyl) phthalate	380	U	380	33	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Di-n-octyl phthalate	380	U	380	33	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Benzo[b]fluoranthene	380	U	380	43	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Benzo[k]fluoranthene	380	U	380	74	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Benzo[a]pyrene	380	U	380	59	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Indeno[1,2,3-cd]pyrene	380	U	380	32	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Dibenz(a,h)anthracene	380	U	380	45	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1
Benzo[g,h,i]perylene	380	U	380	25	ug/Kg	☼	08/25/13 12:13	09/01/13 01:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*62*		*46 - 130*	*08/25/13 12:13*	*09/01/13 01:41*	*1*
2-Fluorobiphenyl	*65*		*58 - 130*	*08/25/13 12:13*	*09/01/13 01:41*	*1*
Terphenyl-d14 (Surr)	*57*	*X*	*60 - 130*	*08/25/13 12:13*	*09/01/13 01:41*	*1*
Phenol-d5 (Surr)	*62*		*49 - 130*	*08/25/13 12:13*	*09/01/13 01:41*	*1*
2-Fluorophenol (Surr)	*61*		*40 - 130*	*08/25/13 12:13*	*09/01/13 01:41*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*58 - 130*	*08/25/13 12:13*	*09/01/13 01:41*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**250**		230	17	ug/Kg	☼	08/21/13 16:21	08/22/13 20:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*96*		*70 - 131*	*08/21/13 16:21*	*08/22/13 20:21*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**16000**		5700	1600	ug/Kg	☼	08/24/13 11:08	08/27/13 00:02	1
ORO C24-C40	**26000**	**B**	5700	1600	ug/Kg	☼	08/24/13 11:08	08/27/13 00:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*75*		*50 - 150*	*08/24/13 11:08*	*08/27/13 00:02*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: Trip Blank
Date Collected: 08/19/13 00:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/31/13 00:12	1
Benzene	1.0	U	1.0	0.34	ug/L			08/31/13 00:12	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/31/13 00:12	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/31/13 00:12	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/31/13 00:12	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/31/13 00:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/31/13 00:12	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/31/13 00:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/31/13 00:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/31/13 00:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/31/13 00:12	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/31/13 00:12	1
2-Hexanone	25	U	25	3.1	ug/L			08/31/13 00:12	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/31/13 00:12	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/31/13 00:12	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/31/13 00:12	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/31/13 00:12	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/31/13 00:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/31/13 00:12	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/31/13 00:12	1
Styrene	1.0	U	1.0	1.0	ug/L			08/31/13 00:12	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/31/13 00:12	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/31/13 00:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/31/13 00:12	1
Toluene	1.0	U	1.0	0.70	ug/L			08/31/13 00:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/31/13 00:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/31/13 00:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/31/13 00:12	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/31/13 00:12	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Client Sample ID: Trip Blank
Date Collected: 08/19/13 00:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93423-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/31/13 00:12	1
Xylenes, Total	10	U	10	1.6	ug/L			08/31/13 00:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*08/31/13 00:12*	*1*
Dibromofluoromethane	*100*		*81 - 121*		*08/31/13 00:12*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*08/31/13 00:12*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-190345/4
Matrix: Solid
Analysis Batch: 190345

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg			08/30/13 15:43	1
Benzene	5.0	U	5.0	0.49	ug/Kg			08/30/13 15:43	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg			08/30/13 15:43	1
Bromoform	5.0	U	5.0	0.63	ug/Kg			08/30/13 15:43	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg			08/30/13 15:43	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg			08/30/13 15:43	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg			08/30/13 15:43	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg			08/30/13 15:43	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg			08/30/13 15:43	1
Chloroform	5.0	U	5.0	0.59	ug/Kg			08/30/13 15:43	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			08/30/13 15:43	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/30/13 15:43	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg			08/30/13 15:43	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg			08/30/13 15:43	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg			08/30/13 15:43	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg			08/30/13 15:43	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg			08/30/13 15:43	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg			08/30/13 15:43	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg			08/30/13 15:43	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg			08/30/13 15:43	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg			08/30/13 15:43	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg			08/30/13 15:43	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg			08/30/13 15:43	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg			08/30/13 15:43	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg			08/30/13 15:43	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg			08/30/13 15:43	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg			08/30/13 15:43	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg			08/30/13 15:43	1
2-Hexanone	25	U	25	5.0	ug/Kg			08/30/13 15:43	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg			08/30/13 15:43	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg			08/30/13 15:43	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg			08/30/13 15:43	1
Methylene Chloride	15	U	15	10	ug/Kg			08/30/13 15:43	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg			08/30/13 15:43	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg			08/30/13 15:43	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			08/30/13 15:43	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg			08/30/13 15:43	1
Styrene	5.0	U	5.0	0.76	ug/Kg			08/30/13 15:43	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg			08/30/13 15:43	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg			08/30/13 15:43	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg			08/30/13 15:43	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg			08/30/13 15:43	1
Toluene	5.0	U	5.0	0.70	ug/Kg			08/30/13 15:43	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/30/13 15:43	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg			08/30/13 15:43	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg			08/30/13 15:43	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg			08/30/13 15:43	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg			08/30/13 15:43	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190345/4
Matrix: Solid
Analysis Batch: 190345

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	5.0	U	5.0	0.48	ug/Kg			08/30/13 15:43	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg			08/30/13 15:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg			08/30/13 15:43	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg			08/30/13 15:43	1
Xylenes, Total	10	U	10	1.9	ug/Kg			08/30/13 15:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 122*		*08/30/13 15:43*	*1*
Dibromofluoromethane	*102*		*79 - 123*		*08/30/13 15:43*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/30/13 15:43*	*1*

Lab Sample ID: LCS 400-190345/1000
Matrix: Solid
Analysis Batch: 190345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	255		ug/Kg		127	43 - 150
Benzene	50.0	48.2		ug/Kg		96	74 - 119
Bromodichloromethane	50.0	49.0		ug/Kg		98	68 - 128
Bromoform	50.0	48.9		ug/Kg		98	54 - 125
Bromomethane	50.0	29.1		ug/Kg		58	25 - 150
Carbon disulfide	50.0	48.8		ug/Kg		98	26 - 150
Carbon tetrachloride	50.0	47.7		ug/Kg		95	70 - 128
Chlorobenzene	50.0	47.1		ug/Kg		94	80 - 116
Chloroethane	50.0	37.5		ug/Kg		75	22 - 150
Chloroform	50.0	47.5		ug/Kg		95	74 - 119
Chloromethane	50.0	46.4		ug/Kg		93	36 - 147
cis-1,2-Dichloroethene	50.0	48.4		ug/Kg		97	68 - 126
cis-1,3-Dichloropropene	50.0	51.9		ug/Kg		104	68 - 125
Cyclohexane	50.0	49.5		ug/Kg		99	62 - 126
Dibromochloromethane	50.0	47.9		ug/Kg		96	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	49.3		ug/Kg		99	57 - 123
1,2-Dichlorobenzene	50.0	46.7		ug/Kg		93	76 - 120
1,3-Dichlorobenzene	50.0	48.2		ug/Kg		96	78 - 118
1,4-Dichlorobenzene	50.0	48.0		ug/Kg		96	77 - 118
Dichlorodifluoromethane	50.0	39.2		ug/Kg		78	44 - 145
1,1-Dichloroethane	50.0	48.3		ug/Kg		97	61 - 128
1,2-Dichloroethane	50.0	46.7		ug/Kg		93	70 - 125
1,1-Dichloroethene	50.0	52.5		ug/Kg		105	62 - 130
1,2-Dichloropropane	50.0	48.9		ug/Kg		98	64 - 129
Diisopropyl ether	50.0	47.8		ug/Kg		96	46 - 144
Ethylbenzene	50.0	47.8		ug/Kg		96	78 - 120
Ethylene Dibromide	50.0	48.7		ug/Kg		97	78 - 119
Ethyl tert-butyl ether	50.0	52.3		ug/Kg		105	60 - 128
2-Hexanone	200	196		ug/Kg		98	54 - 140
Isopropylbenzene	50.0	49.3		ug/Kg		99	78 - 119
Methyl acetate	250	250		ug/Kg		100	52 - 139
Methylcyclohexane	50.0	50.5		ug/Kg		101	65 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190345/1000
Matrix: Solid
Analysis Batch: 190345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	49.4		ug/Kg		99	45 - 150
Methyl Ethyl Ketone	200	213		ug/Kg		107	62 - 126
methyl isobutyl ketone	200	201		ug/Kg		101	56 - 137
Methyl tert-butyl ether	50.0	48.4		ug/Kg		97	69 - 124
Naphthalene	50.0	49.4		ug/Kg		99	64 - 126
Styrene	50.0	50.7		ug/Kg		101	66 - 132
Tert-amyl methyl ether	50.0	51.2		ug/Kg		102	65 - 124
tert-Butyl alcohol	500	522		ug/Kg		104	12 - 150
1,1,2,2-Tetrachloroethane	50.0	46.4		ug/Kg		93	67 - 120
Tetrachloroethene	50.0	48.7		ug/Kg		97	74 - 126
Toluene	50.0	46.4		ug/Kg		93	76 - 120
trans-1,2-Dichloroethene	50.0	48.4		ug/Kg		97	65 - 130
trans-1,3-Dichloropropene	50.0	49.6		ug/Kg		99	65 - 126
1,2,4-Trichlorobenzene	50.0	48.8		ug/Kg		98	72 - 126
1,1,1-Trichloroethane	50.0	48.0		ug/Kg		96	72 - 121
1,1,2-Trichloroethane	50.0	49.1		ug/Kg		98	75 - 118
Trichloroethene	50.0	51.4		ug/Kg		103	76 - 122
Trichlorofluoromethane	50.0	48.1		ug/Kg		96	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	51.7		ug/Kg		103	74 - 123
Vinyl chloride	50.0	48.2		ug/Kg		96	52 - 134
Xylenes, Total	100	97.4		ug/Kg		97	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*72 - 122*
Dibromofluoromethane	*100*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 400-190345/5
Matrix: Solid
Analysis Batch: 190345

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	254		ug/Kg		127	43 - 150	0	30
Benzene	50.0	47.0		ug/Kg		94	74 - 119	3	30
Bromodichloromethane	50.0	46.7		ug/Kg		93	68 - 128	5	30
Bromoform	50.0	48.4		ug/Kg		97	54 - 125	1	30
Bromomethane	50.0	46.1	*	ug/Kg		92	25 - 150	45	30
Carbon disulfide	50.0	46.8		ug/Kg		94	26 - 150	4	30
Carbon tetrachloride	50.0	46.5		ug/Kg		93	70 - 128	3	30
Chlorobenzene	50.0	44.1		ug/Kg		88	80 - 116	7	30
Chloroethane	50.0	46.0		ug/Kg		92	22 - 150	21	30
Chloroform	50.0	45.8		ug/Kg		92	74 - 119	4	30
Chloromethane	50.0	46.2		ug/Kg		92	36 - 147	0	30
cis-1,2-Dichloroethene	50.0	47.1		ug/Kg		94	68 - 126	3	30
cis-1,3-Dichloropropene	50.0	49.2		ug/Kg		98	68 - 125	5	30
Cyclohexane	50.0	47.2		ug/Kg		94	62 - 126	5	30
Dibromochloromethane	50.0	47.2		ug/Kg		94	65 - 131	2	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-190345/5
Matrix: Solid
Analysis Batch: 190345

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane			50.0	47.2		ug/Kg		94	57 - 123	4	30
1,2-Dichlorobenzene			50.0	43.5		ug/Kg		87	76 - 120	7	30
1,3-Dichlorobenzene			50.0	42.6		ug/Kg		85	78 - 118	12	30
1,4-Dichlorobenzene			50.0	42.7		ug/Kg		85	77 - 118	12	30
Dichlorodifluoromethane			50.0	38.7		ug/Kg		77	44 - 145	1	30
1,1-Dichloroethane			50.0	46.8		ug/Kg		94	61 - 128	3	30
1,2-Dichloroethane			50.0	46.1		ug/Kg		92	70 - 125	1	30
1,1-Dichloroethene			50.0	49.1		ug/Kg		98	62 - 130	7	30
1,2-Dichloropropane			50.0	47.8		ug/Kg		96	64 - 129	2	30
Diisopropyl ether			50.0	46.5		ug/Kg		93	46 - 144	3	30
Ethylbenzene			50.0	44.8		ug/Kg		90	78 - 120	7	30
Ethylene Dibromide			50.0	47.7		ug/Kg		95	78 - 119	2	30
Ethyl tert-butyl ether			50.0	50.3		ug/Kg		101	60 - 128	4	30
2-Hexanone			200	195		ug/Kg		97	54 - 140	1	30
Isopropylbenzene			50.0	45.5		ug/Kg		91	78 - 119	8	30
Methyl acetate			250	257		ug/Kg		103	52 - 139	3	30
Methylcyclohexane			50.0	48.1		ug/Kg		96	65 - 126	5	30
Methylene Chloride			50.0	48.3		ug/Kg		97	45 - 150	2	30
Methyl Ethyl Ketone			200	220		ug/Kg		110	62 - 126	3	30
methyl isobutyl ketone			200	202		ug/Kg		101	56 - 137	0	30
Methyl tert-butyl ether			50.0	47.7		ug/Kg		95	69 - 124	2	30
Naphthalene			50.0	46.9		ug/Kg		94	64 - 126	5	30
Styrene			50.0	46.5		ug/Kg		93	66 - 132	9	30
Tert-amyl methyl ether			50.0	50.6		ug/Kg		101	65 - 124	1	30
tert-Butyl alcohol			500	404		ug/Kg		81	12 - 150	25	30
1,1,2,2-Tetrachloroethane			50.0	46.6		ug/Kg		93	67 - 120	0	30
Tetrachloroethene			50.0	46.3		ug/Kg		93	74 - 126	5	30
Toluene			50.0	44.0		ug/Kg		88	76 - 120	5	30
trans-1,2-Dichloroethene			50.0	46.5		ug/Kg		93	65 - 130	4	30
trans-1,3-Dichloropropene			50.0	47.8		ug/Kg		96	65 - 126	4	30
1,2,4-Trichlorobenzene			50.0	43.4		ug/Kg		87	72 - 126	12	30
1,1,1-Trichloroethane			50.0	46.3		ug/Kg		93	72 - 121	4	30
1,1,2-Trichloroethane			50.0	47.3		ug/Kg		95	75 - 118	4	30
Trichloroethene			50.0	48.2		ug/Kg		96	76 - 122	6	30
Trichlorofluoromethane			50.0	48.4		ug/Kg		97	65 - 132	1	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne			50.0	47.5		ug/Kg		95	74 - 123	8	30
Vinyl chloride			50.0	47.5		ug/Kg		95	52 - 134	1	30
Xylenes, Total			100	90.3		ug/Kg		90	70 - 120	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*72 - 122*
Dibromofluoromethane	*101*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190374/4
Matrix: Water
Analysis Batch: 190374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/30/13 15:43	1
Benzene	1.0	U	1.0	0.34	ug/L			08/30/13 15:43	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/30/13 15:43	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/30/13 15:43	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/30/13 15:43	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/30/13 15:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 15:43	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/30/13 15:43	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/30/13 15:43	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/30/13 15:43	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/30/13 15:43	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/30/13 15:43	1
2-Hexanone	25	U	25	3.1	ug/L			08/30/13 15:43	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/30/13 15:43	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/30/13 15:43	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/30/13 15:43	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/30/13 15:43	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/30/13 15:43	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/30/13 15:43	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/30/13 15:43	1
Styrene	1.0	U	1.0	1.0	ug/L			08/30/13 15:43	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/30/13 15:43	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/30/13 15:43	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/30/13 15:43	1
Toluene	1.0	U	1.0	0.70	ug/L			08/30/13 15:43	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 15:43	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/30/13 15:43	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/30/13 15:43	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190374/4
Matrix: Water
Analysis Batch: 190374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/30/13 15:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/30/13 15:43	1
Xylenes, Total	10	U	10	1.6	ug/L			08/30/13 15:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/30/13 15:43*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*08/30/13 15:43*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/30/13 15:43*	*1*

Lab Sample ID: LCS 400-190374/1000
Matrix: Water
Analysis Batch: 190374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	255		ug/L		127	24 - 150
Benzene	50.0	48.2		ug/L		96	79 - 120
Bromodichloromethane	50.0	49.0		ug/L		98	75 - 127
Bromoform	50.0	48.9		ug/L		98	65 - 121
Carbon disulfide	50.0	48.8		ug/L		98	41 - 140
Carbon tetrachloride	50.0	47.7		ug/L		95	46 - 141
Chlorobenzene	50.0	47.1		ug/L		94	85 - 120
Chloroethane	50.0	37.5		ug/L		75	37 - 150
Chloroform	50.0	47.5		ug/L		95	73 - 122
Chloromethane	50.0	46.4		ug/L		93	49 - 141
cis-1,2-Dichloroethene	50.0	48.4		ug/L		97	78 - 122
cis-1,3-Dichloropropene	50.0	51.9		ug/L		104	70 - 122
Cyclohexane	50.0	49.5		ug/L		99	69 - 123
Dibromochloromethane	50.0	47.9		ug/L		96	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	49.3		ug/L		99	52 - 124
1,2-Dichlorobenzene	50.0	46.7		ug/L		93	80 - 121
1,3-Dichlorobenzene	50.0	48.2		ug/L		96	77 - 124
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	79 - 119
Dichlorodifluoromethane	50.0	39.2		ug/L		78	27 - 144
1,1-Dichloroethane	50.0	48.3		ug/L		97	75 - 126
1,2-Dichloroethane	50.0	46.7		ug/L		93	69 - 128
1,1-Dichloroethene	50.0	52.5		ug/L		105	50 - 134
1,2-Dichloropropane	50.0	48.9		ug/L		98	77 - 126
Diisopropyl ether	50.0	47.8		ug/L		96	69 - 143
Ethylbenzene	50.0	47.8		ug/L		96	82 - 120
Ethylene Dibromide	50.0	48.7		ug/L		97	82 - 119
Ethyl tert-butyl ether	50.0	52.3		ug/L		105	58 - 142
2-Hexanone	200	196		ug/L		98	60 - 150
Isopropylbenzene	50.0	49.3		ug/L		99	76 - 118
Methyl acetate	250	250		ug/L		100	58 - 150
Methylcyclohexane	50.0	50.5		ug/L		101	72 - 121
Methylene Chloride	50.0	49.4		ug/L		99	70 - 130
Methyl Ethyl Ketone	200	213		ug/L		107	62 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190374/1000
Matrix: Water
Analysis Batch: 190374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
methyl isobutyl ketone	200	201		ug/L		101	63 - 150
Methyl tert-butyl ether	50.0	48.4		ug/L		97	70 - 124
Naphthalene	50.0	49.4		ug/L		99	45 - 131
Styrene	50.0	50.7		ug/L		101	79 - 124
Tert-amyl methyl ether	50.0	51.2		ug/L		102	65 - 125
tert-Butyl alcohol	500	522		ug/L		104	44 - 150
1,1,2,2-Tetrachloroethane	50.0	46.4		ug/L		93	68 - 132
Tetrachloroethene	50.0	48.7		ug/L		97	76 - 124
Toluene	50.0	46.4		ug/L		93	81 - 120
trans-1,2-Dichloroethene	50.0	48.4		ug/L		97	70 - 126
trans-1,3-Dichloropropene	50.0	49.6		ug/L		99	64 - 120
1,2,4-Trichlorobenzene	50.0	48.8		ug/L		98	69 - 128
1,1,1-Trichloroethane	50.0	48.0		ug/L		96	66 - 130
1,1,2-Trichloroethane	50.0	49.1		ug/L		98	81 - 117
Trichloroethene	50.0	51.4		ug/L		103	77 - 119
Trichlorofluoromethane	50.0	48.1		ug/L		96	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	51.7		ug/L		103	45 - 138
Vinyl chloride	50.0	48.2		ug/L		96	60 - 128
Xylenes, Total	100	97.4		ug/L		97	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*78 - 118*
Dibromofluoromethane	*100*		*81 - 121*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-290771/19-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290771

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	57	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Phenol	330	U	330	34	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Bis(2-chloroethyl)ether	330	U	330	44	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2-Chlorophenol	330	U	330	40	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2-Methylphenol	330	U	330	27	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Acetophenone	330	U	330	28	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
3 & 4 Methylphenol	330	U	330	42	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Hexachloroethane	330	U	330	28	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Nitrobenzene	330	U	330	26	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Isophorone	330	U	330	33	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2-Nitrophenol	330	U	330	41	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2,4-Dimethylphenol	330	U	330	43	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Bis(2-chloroethoxy)methane	330	U	330	39	ug/Kg		08/25/13 12:13	08/30/13 18:41	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290771/19-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290771

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenol	330	U	330	35	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Naphthalene	330	U	330	30	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
4-Chloroaniline	650	U	650	51	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Caprolactam	330	U	330	65	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2-Methylnaphthalene	330	U	330	38	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Hexachlorocyclopentadiene	330	U	330	41	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
1,1'-Biphenyl	730	U	730	730	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2-Nitroaniline	1700	U	1700	44	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Dimethyl phthalate	330	U	330	34	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2,6-Dinitrotoluene	330	U	330	42	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Acenaphthylene	330	U	330	36	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
3-Nitroaniline	1700	U	1700	45	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Acenaphthene	330	U	330	41	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2,4-Dinitrophenol	1700	U	1700	820	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Dibenzofuran	330	U	330	33	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
2,4-Dinitrotoluene	330	U	330	48	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Diethyl phthalate	330	U	330	37	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Fluorene	330	U	330	36	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
4-Chlorophenyl phenyl ether	330	U	330	43	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
4-Nitroaniline	1700	U	1700	48	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Hexachlorobenzene	330	U	330	39	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Atrazine	330	U	330	23	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Phenanthrene	330	U	330	27	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Anthracene	330	U	330	25	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Carbazole	330	U	330	30	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Fluoranthene	330	U	330	32	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Pyrene	330	U	330	27	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
3,3'-Dichlorobenzidine	650	U	650	28	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Chrysene	330	U	330	21	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Benzo[b]fluoranthene	330	U	330	38	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Benzo[k]fluoranthene	330	U	330	64	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Benzo[a]pyrene	330	U	330	51	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		08/25/13 12:13	08/30/13 18:41	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290771/19-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290771

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	330	U	330	39	ug/Kg		08/25/13 12:13	08/30/13 18:41	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		08/25/13 12:13	08/30/13 18:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*46 - 130*	*08/25/13 12:13*	*08/30/13 18:41*	*1*
2-Fluorobiphenyl	*79*		*58 - 130*	*08/25/13 12:13*	*08/30/13 18:41*	*1*
Terphenyl-d14 (Surr)	*69*		*60 - 130*	*08/25/13 12:13*	*08/30/13 18:41*	*1*
Phenol-d5 (Surr)	*58*		*49 - 130*	*08/25/13 12:13*	*08/30/13 18:41*	*1*
2-Fluorophenol (Surr)	*61*		*40 - 130*	*08/25/13 12:13*	*08/30/13 18:41*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*58 - 130*	*08/25/13 12:13*	*08/30/13 18:41*	*1*

Lab Sample ID: LCS 680-290771/20-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290771

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3300	760		ug/Kg		23	10 - 130
Phenol	3300	2400		ug/Kg		73	46 - 130
Bis(2-chloroethyl)ether	3300	2090		ug/Kg		63	42 - 130
2-Chlorophenol	3300	2500		ug/Kg		76	51 - 130
2-Methylphenol	3300	2540		ug/Kg		77	49 - 130
bis (2-chloroisopropyl) ether	3300	2150		ug/Kg		65	44 - 130
Acetophenone	3300	2120		ug/Kg		64	42 - 130
3 & 4 Methylphenol	3300	2610		ug/Kg		79	50 - 130
N-Nitrosodi-n-propylamine	3300	2370		ug/Kg		72	48 - 130
Hexachloroethane	3300	2090		ug/Kg		63	44 - 130
Nitrobenzene	3300	2310		ug/Kg		70	43 - 130
Isophorone	3300	2340		ug/Kg		71	48 - 130
2-Nitrophenol	3300	2680		ug/Kg		81	45 - 130
2,4-Dimethylphenol	3300	2420		ug/Kg		73	47 - 130
Bis(2-chloroethoxy)methane	3300	2660		ug/Kg		81	56 - 130
2,4-Dichlorophenol	3300	2660		ug/Kg		80	53 - 130
Naphthalene	3300	2510		ug/Kg		76	54 - 130
4-Chloroaniline	3300	2100		ug/Kg		64	36 - 130
Hexachlorobutadiene	3300	2600		ug/Kg		79	47 - 130
Caprolactam	3300	3100		ug/Kg		94	52 - 130
4-Chloro-3-methylphenol	3300	3080		ug/Kg		93	52 - 130
2-Methylnaphthalene	3300	2450		ug/Kg		74	55 - 130
Hexachlorocyclopentadiene	3300	1230		ug/Kg		37	35 - 130
2,4,6-Trichlorophenol	3300	2860		ug/Kg		87	53 - 130
2,4,5-Trichlorophenol	3300	3000		ug/Kg		91	60 - 130
1,1'-Biphenyl	3300	2580		ug/Kg		78	57 - 130
2-Chloronaphthalene	3300	2510		ug/Kg		76	55 - 130
2-Nitroaniline	3300	2690		ug/Kg		82	52 - 130
Dimethyl phthalate	3300	2870		ug/Kg		87	63 - 130
2,6-Dinitrotoluene	3300	2860		ug/Kg		87	57 - 130
Acenaphthylene	3300	2860		ug/Kg		87	58 - 130
3-Nitroaniline	3300	2620		ug/Kg		79	42 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290771/20-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290771

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	3300	2430		ug/Kg		74	58 - 130
2,4-Dinitrophenol	3300	2740		ug/Kg		83	10 - 154
4-Nitrophenol	3300	2520		ug/Kg		76	30 - 130
Dibenzofuran	3300	2600		ug/Kg		79	56 - 130
2,4-Dinitrotoluene	3300	2820		ug/Kg		85	55 - 130
Diethyl phthalate	3300	2790		ug/Kg		85	62 - 130
Fluorene	3300	2530		ug/Kg		77	58 - 130
4-Chlorophenyl phenyl ether	3300	2660		ug/Kg		81	61 - 130
4-Nitroaniline	3300	2690		ug/Kg		82	49 - 130
4,6-Dinitro-2-methylphenol	3300	2980		ug/Kg		90	14 - 137
N-Nitrosodiphenylamine	3300	2890		ug/Kg		88	62 - 130
4-Bromophenyl phenyl ether	3300	2720		ug/Kg		83	65 - 130
Hexachlorobenzene	3300	2690		ug/Kg		82	59 - 130
Atrazine	3300	2500		ug/Kg		76	54 - 141
Pentachlorophenol	3300	3200		ug/Kg		97	38 - 131
Phenanthrene	3300	2730		ug/Kg		83	61 - 130
Anthracene	3300	2710		ug/Kg		82	60 - 130
Carbazole	3300	2930		ug/Kg		89	60 - 130
Di-n-butyl phthalate	3300	2950		ug/Kg		89	65 - 130
Fluoranthene	3300	2820		ug/Kg		85	62 - 130
Pyrene	3300	2310		ug/Kg		70	59 - 130
Butyl benzyl phthalate	3300	2800		ug/Kg		85	65 - 134
3,3'-Dichlorobenzidine	3300	2840		ug/Kg		86	45 - 130
Benzo[a]anthracene	3300	2930		ug/Kg		89	62 - 130
Chrysene	3300	3000		ug/Kg		91	62 - 130
Bis(2-ethylhexyl) phthalate	3300	3200		ug/Kg		97	62 - 132
Di-n-octyl phthalate	3300	3480		ug/Kg		105	59 - 146
Benzo[b]fluoranthene	3300	2780		ug/Kg		84	53 - 130
Benzo[k]fluoranthene	3300	2740		ug/Kg		83	57 - 130
Benzo[a]pyrene	3300	2760		ug/Kg		84	68 - 131
Indeno[1,2,3-cd]pyrene	3300	2910		ug/Kg		88	52 - 130
Dibenz(a,h)anthracene	3300	2810		ug/Kg		85	56 - 130
Benzo[g,h,i]perylene	3300	2780		ug/Kg		84	54 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*73*		*46 - 130*
2-Fluorobiphenyl	*82*		*58 - 130*
Terphenyl-d14 (Surr)	*79*		*60 - 130*
Phenol-d5 (Surr)	*70*		*49 - 130*
2-Fluorophenol (Surr)	*68*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*90*		*58 - 130*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 680-290369/9
Matrix: Solid
Analysis Batch: 290369

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/22/13 14:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*90*		*70 - 131*		*08/22/13 14:34*	*1*

Lab Sample ID: LCS 680-290369/6
Matrix: Solid
Analysis Batch: 290369

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1000	939		ug/Kg		94	64 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*93*		*70 - 131*

Lab Sample ID: LCSD 680-290369/7
Matrix: Solid
Analysis Batch: 290369

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1000	1010		ug/Kg		101	64 - 133	7	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*95*		*70 - 131*

Lab Sample ID: MB 680-290531/7
Matrix: Solid
Analysis Batch: 290531

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/23/13 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*80*		*70 - 131*		*08/23/13 12:05*	*1*

Lab Sample ID: LCS 680-290531/5
Matrix: Solid
Analysis Batch: 290531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1000	784		ug/Kg		78	64 - 133

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCS 680-290531/5
Matrix: Solid
Analysis Batch: 290531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	*87*		*70 - 131*

Lab Sample ID: LCSD 680-290531/6
Matrix: Solid
Analysis Batch: 290531

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	879		ug/Kg		88	64 - 133	11	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	*90*		*70 - 131*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 490-102377/1-A
Matrix: Solid
Analysis Batch: 102839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 102377

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5000	U	5000	1400	ug/Kg		08/24/13 11:08	08/27/13 12:07	1
ORO C24-C40	2330	J	5000	1400	ug/Kg		08/24/13 11:08	08/27/13 12:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	*73*		*50 - 150*	*08/24/13 11:08*	*08/27/13 12:07*	*1*

Lab Sample ID: LCS 490-102377/2-A
Matrix: Solid
Analysis Batch: 102589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102377

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]			40000	38300		ug/Kg		96	54 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	*81*		*50 - 150*

Lab Sample ID: 680-93423-12 MS
Matrix: Solid
Analysis Batch: 102589

Client Sample ID: SB01-05 (1.5-2.5)
Prep Type: Total/NA
Prep Batch: 102377

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	16000		45900	11900	F	ug/Kg	☼	-9	10 - 142

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: 680-93423-12 MS
Matrix: Solid
Analysis Batch: 102589

Client Sample ID: SB01-05 (1.5-2.5)
Prep Type: Total/NA
Prep Batch: 102377

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl (Surr)	*69*		*50 - 150*

Lab Sample ID: 680-93423-12 MSD
Matrix: Solid
Analysis Batch: 102589

Client Sample ID: SB01-05 (1.5-2.5)
Prep Type: Total/NA
Prep Batch: 102377

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	16000		45300	42600	F	ug/Kg	☼	59	10 - 142	113	47

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl (Surr)	*78*		*50 - 150*

Lab Sample ID: MB 490-103126/1-A
Matrix: Solid
Analysis Batch: 103420

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103126

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	10000		5000	1400	ug/Kg		08/28/13 08:03	08/28/13 19:42	1
ORO C24-C40	16100		5000	1400	ug/Kg		08/28/13 08:03	08/28/13 19:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	*86*		*50 - 150*	*08/28/13 08:03*	*08/28/13 19:42*	*1*

Lab Sample ID: LCS 490-103126/2-A
Matrix: Solid
Analysis Batch: 103420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103126

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			40000	26600		ug/Kg		66	54 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	*101*		*50 - 150*

Lab Sample ID: MB 490-103975/1-A
Matrix: Solid
Analysis Batch: 104206

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103975

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5000	U	5000	1400	ug/Kg		08/30/13 13:38	09/01/13 16:14	1
ORO C24-C40	2430	J	5000	1400	ug/Kg		08/30/13 13:38	09/01/13 16:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	*71*		*50 - 150*	*08/30/13 13:38*	*09/01/13 16:14*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: LCS 490-103975/2-A
Matrix: Solid
Analysis Batch: 104206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103975

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			40000	34400		ug/Kg		86	54 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*92*		*50 - 150*

Lab Sample ID: 680-93423-9 MS
Matrix: Solid
Analysis Batch: 104206

Client Sample ID: SB01-06 (1.0-2.0)
Prep Type: Total/NA
Prep Batch: 103975

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]	5900		47000	38500		ug/Kg	☼	69	10 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl (Surr)	*87*		*50 - 150*

Lab Sample ID: 680-93423-9 MSD
Matrix: Solid
Analysis Batch: 104206

Client Sample ID: SB01-06 (1.0-2.0)
Prep Type: Total/NA
Prep Batch: 103975

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	5900		47300	42400		ug/Kg	☼	77	10 - 142	10	47

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*85*		*50 - 150*

GC/MS VOA

Prep Batch: 189491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	5035	
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	5035	
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	5035	
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	5035	
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	5035	
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	5035	
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	5035	
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	5035	
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	5035	
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	5035	
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	5035	
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	5035	

Analysis Batch: 190345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	8260B	189491
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	8260B	189491
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	8260B	189491
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	8260B	189491
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	8260B	189491
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	8260B	189491
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	8260B	189491
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	8260B	189491
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	8260B	189491
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	8260B	189491
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	8260B	189491
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	8260B	189491
LCS 400-190345/1000	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 400-190345/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 400-190345/4	Method Blank	Total/NA	Solid	8260B	

Analysis Batch: 190374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-13	Trip Blank	Total/NA	Water	8260B	
LCS 400-190374/1000	Lab Control Sample	Total/NA	Water	8260B	
MB 400-190374/4	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 290771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	3546	
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	3546	
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	3546	
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	3546	
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	3546	
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	3546	
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	3546	
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	3546	
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	3546	

GC/MS Semi VOA (Continued)

Prep Batch: 290771 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	3546	
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	3546	
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	3546	
LCS 680-290771/20-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-290771/19-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 291613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-290771/20-A	Lab Control Sample	Total/NA	Solid	8270D	290771
MB 680-290771/19-A	Method Blank	Total/NA	Solid	8270D	290771

Analysis Batch: 291788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	8270D	290771
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	8270D	290771
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	8270D	290771
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	8270D	290771
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	8270D	290771
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	8270D	290771
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	8270D	290771
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	8270D	290771
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	8270D	290771
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	8270D	290771
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	8270D	290771
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	8270D	290771

GC VOA

Prep Batch: 290283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	5035	
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	5035	
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	5035	
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	5035	
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	5035	
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	5035	
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	5035	
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	5035	
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	5035	
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	5035	
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	5035	
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	5035	

Analysis Batch: 290369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	8015C	290283
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	8015C	290283
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	8015C	290283
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	8015C	290283
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	8015C	290283

GC VOA (Continued)

Analysis Batch: 290369 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	8015C	290283
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	8015C	290283
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	8015C	290283
LCS 680-290369/6	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290369/7	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290369/9	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 290531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	8015C	290283
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	8015C	290283
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	8015C	290283
LCS 680-290531/5	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290531/6	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290531/7	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 290971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	8015C	290283

GC Semi VOA

Prep Batch: 102377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	3550C	
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	3550C	
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	3550C	
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	3550C	
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	3550C	
680-93423-12 MS	SB01-05 (1.5-2.5)	Total/NA	Solid	3550C	
680-93423-12 MSD	SB01-05 (1.5-2.5)	Total/NA	Solid	3550C	
LCS 490-102377/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-102377/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 102589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-7	SB01-04 (0.0-1.0)	Total/NA	Solid	8015C	102377
680-93423-8	SB01-04 (5.0-6.0)	Total/NA	Solid	8015C	102377
680-93423-10	SB01-06 (6.5-7.5)	Total/NA	Solid	8015C	102377
680-93423-11	SB01-05 (8.5-9.5)	Total/NA	Solid	8015C	102377
680-93423-12	SB01-05 (1.5-2.5)	Total/NA	Solid	8015C	102377
680-93423-12 MS	SB01-05 (1.5-2.5)	Total/NA	Solid	8015C	102377
680-93423-12 MSD	SB01-05 (1.5-2.5)	Total/NA	Solid	8015C	102377
LCS 490-102377/2-A	Lab Control Sample	Total/NA	Solid	8015C	102377

Analysis Batch: 102839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-102377/1-A	Method Blank	Total/NA	Solid	8015C	102377

GC Semi VOA (Continued)

Prep Batch: 103126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	3550C	
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	3550C	
LCS 490-103126/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-103126/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 103420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-4	SB01-03 (5.0-6.0)	Total/NA	Solid	8015C	103126
680-93423-6	SB01-02 (5.0-6.0)	Total/NA	Solid	8015C	103126
LCS 490-103126/2-A	Lab Control Sample	Total/NA	Solid	8015C	103126
MB 490-103126/1-A	Method Blank	Total/NA	Solid	8015C	103126

Prep Batch: 103975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	3550C	
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	3550C	
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	3550C	
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	3550C	
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	3550C	
680-93423-9 MS	SB01-06 (1.0-2.0)	Total/NA	Solid	3550C	
680-93423-9 MSD	SB01-06 (1.0-2.0)	Total/NA	Solid	3550C	
LCS 490-103975/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-103975/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 104206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93423-1	SB01-01 (1.0-2.0)	Total/NA	Solid	8015C	103975
680-93423-2	SB01-01 (9.0-10.0)	Total/NA	Solid	8015C	103975
680-93423-3	SB01-03 (0.5-1.5)	Total/NA	Solid	8015C	103975
680-93423-5	SB01-02 (0.5-1.5)	Total/NA	Solid	8015C	103975
680-93423-9	SB01-06 (1.0-2.0)	Total/NA	Solid	8015C	103975
680-93423-9 MS	SB01-06 (1.0-2.0)	Total/NA	Solid	8015C	103975
680-93423-9 MSD	SB01-06 (1.0-2.0)	Total/NA	Solid	8015C	103975
LCS 490-103975/2-A	Lab Control Sample	Total/NA	Solid	8015C	103975
MB 490-103975/1-A	Method Blank	Total/NA	Solid	8015C	103975

Client Sample ID: SB01-01 (1.0-2.0)

Lab Sample ID: 680-93423-1

Date Collected: 08/19/13 12:30

Matrix: Solid

Date Received: 08/21/13 10:07

Percent Solids: 73.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 17:00	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 21:01	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 16:38	AJMC	TAL SAV
Total/NA	Prep	3550C			103975	08/30/13 13:38	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104206	09/01/13 17:32	GMH	TAL NSH

Client Sample ID: SB01-01 (9.0-10.0)

Lab Sample ID: 680-93423-2

Date Collected: 08/19/13 12:35

Matrix: Solid

Date Received: 08/21/13 10:07

Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 17:24	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 21:26	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 16:58	AJMC	TAL SAV
Total/NA	Prep	3550C			103975	08/30/13 13:38	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104206	09/01/13 17:48	GMH	TAL NSH

Client Sample ID: SB01-03 (0.5-1.5)

Lab Sample ID: 680-93423-3

Date Collected: 08/19/13 14:00

Matrix: Solid

Date Received: 08/21/13 10:07

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 17:47	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 21:52	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 17:20	AJMC	TAL SAV
Total/NA	Prep	3550C			103975	08/30/13 13:38	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104206	09/01/13 18:03	GMH	TAL NSH

Client Sample ID: SB01-03 (5.0-6.0)

Lab Sample ID: 680-93423-4

Date Collected: 08/19/13 14:10

Matrix: Solid

Date Received: 08/21/13 10:07

Percent Solids: 83.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN

Client Sample ID: SB01-03 (5.0-6.0)

Lab Sample ID: 680-93423-4

Date Collected: 08/19/13 14:10
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 83.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190345	08/30/13 18:13	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 22:17	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 17:42	AJMC	TAL SAV
Total/NA	Prep	3550C			103126	08/28/13 08:03	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103420	08/29/13 01:39	JML	TAL NSH

Client Sample ID: SB01-02 (0.5-1.5)

Lab Sample ID: 680-93423-5

Date Collected: 08/19/13 14:25
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 86.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 18:37	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 22:43	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 18:02	AJMC	TAL SAV
Total/NA	Prep	3550C			103975	08/30/13 13:38	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104206	09/01/13 18:19	GMH	TAL NSH

Client Sample ID: SB01-02 (5.0-6.0)

Lab Sample ID: 680-93423-6

Date Collected: 08/19/13 14:30
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 75.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 19:03	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 23:09	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 18:22	AJMC	TAL SAV
Total/NA	Prep	3550C			103126	08/28/13 08:03	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103420	08/29/13 02:10	JML	TAL NSH

Client Sample ID: SB01-04 (0.0-1.0)

Lab Sample ID: 680-93423-7

Date Collected: 08/19/13 15:30
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 81.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 19:29	WPD	TAL PEN

Client Sample ID: SB01-04 (0.0-1.0)

Lab Sample ID: 680-93423-7

Date Collected: 08/19/13 15:30
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 81.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 23:34	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 18:42	AJMC	TAL SAV
Total/NA	Prep	3550C			102377	08/24/13 11:08	JLP	TAL NSH
Total/NA	Analysis	8015C		1	102589	08/27/13 00:49	JML	TAL NSH

Client Sample ID: SB01-04 (5.0-6.0)

Lab Sample ID: 680-93423-8

Date Collected: 08/19/13 15:35
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 75.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		50	190345	08/30/13 21:38	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	08/31/13 23:59	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290971	08/27/13 18:11	AJMC	TAL SAV
Total/NA	Prep	3550C			102377	08/24/13 11:08	JLP	TAL NSH
Total/NA	Analysis	8015C		1	102589	08/27/13 01:04	JML	TAL NSH

Client Sample ID: SB01-06 (1.0-2.0)

Lab Sample ID: 680-93423-9

Date Collected: 08/19/13 16:15
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 19:55	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	09/01/13 00:25	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 15:07	AJMC	TAL SAV
Total/NA	Prep	3550C			103975	08/30/13 13:38	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104206	09/01/13 16:45	GMH	TAL NSH

Client Sample ID: SB01-06 (6.5-7.5)

Lab Sample ID: 680-93423-10

Date Collected: 08/19/13 16:20
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 67.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 20:21	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV

Client Sample ID: SB01-06 (6.5-7.5)

Lab Sample ID: 680-93423-10

Date Collected: 08/19/13 16:20
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 67.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	291788	09/01/13 00:50	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 15:27	AJMC	TAL SAV
Total/NA	Prep	3550C			102377	08/24/13 11:08	JLP	TAL NSH
Total/NA	Analysis	8015C		1	102589	08/27/13 01:36	JML	TAL NSH

Client Sample ID: SB01-05 (8.5-9.5)

Lab Sample ID: 680-93423-11

Date Collected: 08/19/13 16:50
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 75.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 20:46	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	09/01/13 01:16	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 15:47	AJMC	TAL SAV
Total/NA	Prep	3550C			102377	08/24/13 11:08	JLP	TAL NSH
Total/NA	Analysis	8015C		1	102589	08/27/13 01:51	JML	TAL NSH

Client Sample ID: SB01-05 (1.5-2.5)

Lab Sample ID: 680-93423-12

Date Collected: 08/19/13 16:45
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189491	08/22/13 13:27	CAR	TAL PEN
Total/NA	Analysis	8260B		1	190345	08/30/13 21:12	WPD	TAL PEN
Total/NA	Prep	3546			290771	08/25/13 12:13	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	09/01/13 01:41	SMP	TAL SAV
Total/NA	Prep	5035			290283	08/21/13 16:21	FES	TAL SAV
Total/NA	Analysis	8015C		1	290369	08/22/13 20:21	AJMC	TAL SAV
Total/NA	Prep	3550C			102377	08/24/13 11:08	JLP	TAL NSH
Total/NA	Analysis	8015C		1	102589	08/27/13 00:02	JML	TAL NSH

Client Sample ID: Trip Blank

Lab Sample ID: 680-93423-13

Date Collected: 08/19/13 00:00
Matrix: Water
Date Received: 08/21/13 10:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190374	08/31/13 00:12	WPD	TAL PEN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC #

LABORATORY INFORMATION

- [x] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

CSXT Project Name: C&O CANAL | BRUNSWICK RAIL YARD

CSXT Contact: PAUL KURZANSKI

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS

Address: 1114 BENFIELD BLVD

City, State, Zip: MILLERSVILLE, MD 21108

Project #: MD000843.0011.0004

PM: MEGAN KELLNER

Email: MEGAN.KELLNER@ARCADIS-US.COM

Phone: (410)987-0032 Fax: (410)907-4342

Turnaround Time:
- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days
- Specify # Days _____
- [x] Standard 14 Days
- [ ] Other _____

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxicie; 6 = Other _____

Note ➡ 0 — Pres. Code

Deliverables:
- [x] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv: _____
- [ ] EDD Required, Format: _____

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix Code	METHODS FOR ANALYSIS: SVOCs (8270)	COMMENTS	LAB USE
SB01-01 (1.0-2.0)	1 4oz SOIL JAR	8-19-13	1230	LL	N	GR	SO	X		
SB01-01 (9.0-10.0)			1235		N	GRAB	SO	X		
SB01-03 (0.5-1.5)			1400		N		SO	X		
SB01-03 (5.0-6.0)			1410		N		SO	X		
SB01-02 (0.5-1.5)			1425	LL	N		SO	X		
SB01-02 (5.0-6.0)	1 4 oz. SOIL JAR		1430		N	GRAB	SO	X		
SB01-04 (0.0-1.0)			1530		N		SO	X		
SB01-04 (5.0-6.0)			1535		N		SO	X		
SB01-06 (1.0-2.0)			1615		N		SO	X		
SB01-06 (6.5-7.5)	1 4 oz. SOIL JAR		1620	LL	N	GRAB	SO	X		

680-93423 Chain of Custody

	Date/Time:	Received By:	Date/Time:
Relinquished By:	8-19-13 2200	Received By:	8/20/13 1000
Relinquished By:	8/20/13 1000	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory:	08/21/13 1007	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No; Custody Seal # ; LAB Log Number #

Comments & Special Analytical Requirements: 680-93423 2.6°C

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC #

LABORATORY INFORMATION

- [x] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

CSXT Project Name: C&O CANAL / BRUNSWICK RAIL YARD

CSXT Contact: PAUL KURANSKI

LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS

Project #: MD000843.0011.0004

PM: MEGAN KELLNER

Address: 1114 BENFIELD BLVD

Email: MEGAN.KELLNER@ARCADIS-US.COM

City, State, Zip: MILLERSVILLE, MD 21108

Phone: (410) 967-3200

Fax:

Turnaround Time:

- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days — Specify # Days _____
- [ ] Standard 14 Days
- [ ] Other _____

Deliverables:

- [ ] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv: _____
- [ ] EDD Required, Format: _____

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other _____

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix: Code	Note ➡ 0 / Pres. Code: SVOCs (8270)	COMMENTS	LAB USE
SB01-05 (8.5-9.5)	1 4oz SOIL JAR	8-19-13	1650	LL	N	GRAB	SO	X		
SB01-05 (1.5-2.5)	1 4oz. SOIL JAR	8-19-13	1645	LL	N	GRAB	SO	X		

Relinquished By: Paul Kuranski	Date/Time: 8-19-13 / 2200	Received By: Paul Kuranski	Date/Time: 8/20/13 / 1000	Comments & Special Analytical Requirements: 680-93423 2.6°	
Relinquished By: Paul Kuranski	Date/Time: 8/20/13 / 1000	Received By:	Date/Time:		
Relinquished By:	Date/Time:	Received By:	Date/Time:		
Received By Laboratory:	Date/Time: 08/21/13 1007	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No	Custody Seal #	LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

9/13/2013

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130819-01

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method: lab courier

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

CSXT Project Name: C&O Canal / Brunswick Rail Yard

CSXT Contact: Paul Kurzanski

LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS, INC

Address: 1114 Benfield Blvd

City, State, Zip: Millersville MD 21108

Project #: MD000843.0011.00004

PM: Megan Kellner

Email: megan.kellner@arcadis-us.com

Phone: (410) 987-0032 Fax: (410) 987-4347

Turnaround Time:

- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days
- ☒ Standard 14 Days
- ☐ Other

Deliverables:

- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv:
- ☐ EDD Required, Format:

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other Terracore

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix: Code	Note ➡ Pres. Code	METHODS FOR ANALYSIS: TPH-GRO (8015)	Full Suite VOCs + Fuel Oxygenates (8260)	COMMENTS	LAB USE
~~SB01-01~~ SB01 (1.0-1.5)	2 TERRACORE	8-19-13	1230	LL	N	GRAB	SO	6	X	X		
~~SB01-01~~ SB01 (9.0-9.5)			1235	LL	N		SO		X	X		
SB01-03 (1.0-1.5)			1400	LL	N		SO		X	X		
SB01-03 (5.0-5.5)			1410	LL	N		SO		X	X		
SB01-02 (1.0-1.5)			1425	LL	N		SO		X	X		
SB01-02 (5.0-5.5)			1430	LL	N		SO		X	X		
SB01-04 (0.5-1.0)			1530	LL	N		SO		X	X		
SB01-04 (5.0-5.5)			1535	LL	N		SO		X	X		
SB01-06 (1.5-2.0)			1615	LL	N		SO		X	X		
SB01-06 (6.5-7.0)	2 TERRACORE	8-19-13	1620	LL	N	GRAB	SO		X	X		

	Date/Time	Received By	Date/Time
Relinquished By:	8-19-13 / 2200		8/20/13 / 1000
Relinquished By:	8/20/13 / 1400		
Relinquished By:			
Received By Laboratory:	08/20/13 / 1007	Lab Remarks:	

Comments & Special Analytical Requirements:

680-93423

12.6°C

LAB USE: ☐ Custody Intact Yes ☐ No

Custody Seal #

LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC #

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 94153381

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

CSXT Project Name: C+O CANAL / BRUNSWICK RAILYARD

CSXT Contact: PAUL KURZANSKI

LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS

Project #: MD000843.0011.0004

PM: MEGAN KELLNER

Address: 1114 BENFIELD BLVD

Email: MEGAN.KELLNER@ARCADIS-US.COM

City, State, Zip: MILLERSVILLE, MD 21108

Phone: (410) 987-0032 Fax: (410) 987-4847

Turnaround Time:
- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days
- ☒ Standard 14 Days
- ☐ Other

Deliverables:
- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv:
- ☐ EDD Required, Format:

Preservative Codes:
0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other TERRACORE

Matrix Codes:
GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	Note ➡ 6 / Pres. Code 6 — METHODS FOR ANALYSIS: TPH-GRO (8015)	Full-suite VOC + 3 Fuel oxygenates (8260)	COMMENTS	LAB USE
SB01-05(8.5-9.0)	2 TERRACORE	8-19-13	1650	LL	N	GRAB	SO	X	X		
SB01-06(2.0-2.5)	2 TERRACORE	8-19-13	1645	LL	N	GRAB	SO	X	X		

	Date/Time		Date/Time	
Relinquished By:	8-19-13 / 2200	Received By:	8/20/13 / 1000	Comments & Special Analytical Requirements: 680-93423, 2.6°C
Relinquished By:	8/20/13 / 1400	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By Laboratory:	Date/Time: 08/21/13 1007	Lab Remarks:	LAB USE: ☐ Yes ☐ No Custody Intact	Custody Seal #	LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

9/13/2013

NASHVILLE – 2960 FOSTER CREIGHTON DR. NASHVILLE, TN 37204

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC #

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-691-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 941538I

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

CSXT Project Name: C&O CANAL / BRUNSWICK RAIL YARD

CSXT Contact: PAUL KURANSKI

LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS

Project #: MD000843.0011.0004

PM: MEGAN KELLNER

Address: 1114 BENFIELD BLVD

Email: MEGAN.KELLNER@ARCADIS-US.COM

City, State, Zip: ~~AD~~ MILLERSVILLE, MD 21108

Phone: (410) 987-3205 Fax: (410) 907-4342

Turnaround Time:
- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days
- ☒ Standard 14 Days
- ☐ Other

Deliverables:
- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv:
- ☐ EDD Required, Format:

Preservative Codes:
0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other

Note ➡ 0

Pres. Code

Matrix Codes:
GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	METHODS FOR ANALYSIS: TPH DRO/ORO (8015)	COMMENTS	LAB USE
SB01-01 (1.0-2.0)	1402 SOIL JAR	8-19-13	1230	LL	N	GRAB	SO	X		
SB01-01 (9.0-10.0)			1235		N		SO	X		
SB01-03 (0.5-1.5)			1400		N		SO	X		
SB01-03 (5.0-6.0)			1410		N		SO	X		
SB01-02 (0.5-1.5)			1425	LL	N		SO	X		
SB01-02 (5.0-6.0)			1430		N		SO	X		
SB01-04 (0.0-1.0)			1530		N	GRAB	SO	X		
SB01-04 (5.0-6.0)			1535		N		SO	X		
SB01-06 (1.0-2.0)			1615		N		SO	X		
SB01-06 (6.5-7.5)	1402 SOIL JAR	8-19-13	1620	LL	N	GRAB	SO	X		

	Date/Time:	Received By:	Date/Time:
Relinquished By:	8-19-13 / 2200		8/20/13 / 1000
Relinquished By:	8/20/13 / 1400		
Relinquished By:			
Received By Laboratory:		Lab Remarks:	

Comments & Special Analytical Requirements:

LAB USE: ☐ Yes ☐ Custody Intact ☐ No

Custody Seal #:

LAB Log Number #:

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

NASHVILLE

NASHVILE - 2960 FOSTER CREIGHTON DR. NASHVILLE, TN 37204

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC #

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-691-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

CSXT Project Name: C&O CANAL / BRUNSWICK RAIL YARD

CSXT Contact: PAUL KURZANSKI

LWON: ENV 33683

CONSULTANT INFORMATION

Company: ARCADIS

Address: 1114 ~~MILLERSVILLE~~ BONFIELD BLVD

City, State, Zip: ~~PAD~~, MILLERSVILLE, MD 21108

Project #: MD000843.0011.0004

PM: MEGAN KELLNER

Email: MEGAN.KELLNER@ARCADIS-US.COM

Phone: (410) 987-0032 Fax:

Turnaround Time:

- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days
- ☒ Standard 14 Days
- ☐ Other

Deliverables:

- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv:
- ☐ EDD Required, Format:

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	Note ➡ 0 Pres. Code: TPH DRO (8015)	COMMENTS	LAB USE
SB01-05(8.5-9.5)	1 4 oz soil JAR	8-19-13	1650	LL	N	GRAB	SO	X		
SB01-05(1.5-2.5)	1 4 oz soil JAR	8-19-13	1645	LL	N	GRAB	SO	X		

Relinquished By:	Date/Time: 8-19-13 / 2200	Received By:	Date/Time: 8/20/13 / 1000	Comments & Special Analytical Requirements:
Relinquished By:	Date/Time: 8/20/13 / 1400	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By Laboratory:	Date/Time:	Lab Remarks:	LAB USE: ☐ Yes ☐ No Custody Intact	Custody Seal #	LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

NASHville

680-93423

CSX TRANSPORTATION

680-93423 COC

F Y

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

COC # 130819-01

SHIPMENT INFORMATION

Shipment Method: lab carrier

Shipment Tracking No: —

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

CSXT Project Name: C&O Canal / Brunswick Rail Yard

CSXT Contact: Paul Kurzanski

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS, INC

Address: 1114 Benfield Blvd

City, State, Zip: Millersville MD 21108

Project #: MD000843.0011.00004

PM: Megan Kellner

Email: megan.kellner@arcadis-us.com

Phone: (410) 987-0032 Fax: (410) 987-4382

Turnaround Time:

- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days _____
- ☑ Standard 14 Days
- ☐ Other _____

Deliverables:

- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv: _____
- ☐ EDD Required, Format: _____

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other Encore

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix: Code	Note ➡ Pres. Code: 6	METHODS FOR ANALYSIS: 6	COMMENTS	LAB USE
								TPH-GRO (8015)	Full Suite VOCs w/ Fuel Oxygenates (8260)		
SB01-01 SB01 (1.0-1.5)	2 TERRACORE	8-19-13	1230	LL	N	GRAB	SO	X	X		
SB01-01 SB01 (9.0-9.5)			1235	LL	N		SO	X	X		
SB01-03 (1.0-1.5)			1400	LL	N		SO	X	X		
SB01-03 (5.0-5.5)			1410	LL	N		SO	X	X		
SB01-02 (1.0-1.5)			1425	LL	N		SO	X	X		
SB01-02 (5.0-5.5)			1430	LL	N		SO	X	X		
SB01-04 (0.5-1.0)			1530	LL	N		SO	X	X		
SB01-04 (5.0-5.5)			1535	LL	N		SO	X	X		
SB01-06 (1.5-2.0)			1615	LL	N		SO	X	X		
SB01-06 (6.5-7.0)	2 TERRACORE	8-19-13	1620	LL	N	GRAB	SO	X	X		

	Date/Time:	Received By:	Date/Time:
Relinquished By: Lan Li	8-19-13 / 2200	Received By:	8/20/13 / 1000
Relinquished By: Paul Kurzanski	8/20/13 / 1900	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory: DC NC	8/21/13 0937	Lab Remarks: 0.7°C IR-5	LAB USE: ☐ Yes ☐ Custody Intact ☐ No

Comments & Special Analytical Requirements:

Custody Seal # | LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

PENSACOLA

680-93423

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC #

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-691-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 941 5381

CSXT Project Name: C&O CANAL / BRUNSWICK RAILYARD

CSXT Contact: PAUL KURZANSKI

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

LWON: ENV 33683

CONSULTANT INFORMATION

Company: ARCADIS

Address: 1114 BENFIELD BLVD

City, State, Zip: MILLERSVILLE, MD 21108

Project #: MD000843.0011.0004

PM: MEGAN KELLNER

Email: MEGAN.KELLNER@ARCADIS-US.COM

Phone: (410) 987-0032 Fax: (410) 987-4341

Turnaround Time:
- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days _____
- ☒ Standard 14 Days
- ☐ Other _____

Deliverables:
- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv: _____
- ☐ EDD Required, Format: _____

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other TERRACORE

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	Note ➡ 6	6	COMMENTS	LAB USE
								Pres. Code	METHODS FOR ANALYSIS: TPH-GRO (8015)	METHODS FOR ANALYSIS: FULL SUITE VOC + 3 FUEL OXYGENATES (8260)	
SB01-05(8.5-9.0)	2 TERRACORE	8-19-13	1650	LL	N	GRAB	SO		X	X	
SB01-05(2.0-2.5)	2 TERRACORE	8-19-13	1645	LL	N	GRAB	SO		X	X	
TRIPBLANK										X	
-MH 8/22/13											

	Date/Time		Date/Time	Comments & Special Analytical Requirements:
Relinquished By:	8-19-13 / 2200	Received By:	8/20/13 / 1000	
Relinquished By:	8/20/13 / 1400	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By Laboratory:	8/21/13 0937	Lab Remarks: 0-7°C IR-5	LAB USE: ☐ Yes ☐ No Custody Intact	Custody Seal #	LAB Log Number #

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

PENSACOLA

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93423-1

Login Number: 93423

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93423-1

Login Number: 93423
List Number: 1
Creator: McBride, Mike

List Source: TestAmerica Nashville
List Creation: 08/21/13 01:57 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93423-1

Login Number: 93423
List Number: 1
Creator: Nak, Deend

List Source: TestAmerica Pensacola
List Creation: 08/21/13 06:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C IR-5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93423-1

Login Number: 93423
List Number: 2
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/29/13 05:00 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time.		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	07-31-14
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14 *
California	NELAP	9	3217CA	07-31-14 *
Colorado	State Program	8	N/A	12-31-13
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-13 *
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14
South Carolina	State Program	4	98001	06-30-13 *
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13
West Virginia DEP	State Program	3	94	09-30-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Laboratory: TestAmerica Nashville (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
AIHA	IHLAP		100790	09-01-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-15
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-13
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14
Arizona	State Program	9	AZ0710	01-11-14
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-14

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93423-1

Laboratory: TestAmerica Pensacola (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200041	10-09-13
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-13
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-13 *
Michigan	State Program	5	9912	06-30-13 *
New Jersey	NELAP	2	FL006	06-30-13 *
North Carolina DENR	State Program	4	314	12-31-13
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-14
Rhode Island	State Program	1	LAO00307	12-31-13
South Carolina	State Program	4	96026	06-30-13 *
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-93445-1
Client Project/Site: CSX C&O Canal Brunswick, MD

For:
ARCADIS U.S., Inc.
1114 Benfield Blvd.
Suite A
Millersville, Maryland 21108

Attn: Ms. Megan Kellner

Authorized for release by:
9/11/2013 6:36:08 PM

Lisa Harvey, Project Manager II
lisa.harvey@testamericainc.com

Job ID: 680-93445-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX C&O Canal Brunswick, MD
Report Number: 680-93445-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 8/21/2013 10:07 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.8º C, 2.8º C, 3.2º C, 3.4º C and 3.4º C.

The footage on the COC for the VOCs and GRO is a shorter range than what was indicated for the SVOCs and DRO. For consistancy in reporting moisture values, the specific soil boring was logged in for all tests based on the sample ID and date/time sampled, and were subsequently logged in so as to report at the largest of the depth range.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SB01-07 (0.5-1.5) (680-93445-3), SB01-07 (9.0-10.0) (680-93445-4), SB01-08 (1.5-2.5) (680-93445-5), SB01-08 (9.0-10.0) (680-93445-6), SB01-09 (0.0-1.0) (680-93445-7), SB01-09 (4.0-5.0) (680-93445-8), SB01-10 (0.0-1.0) (680-93445-9), SB01-10 (4.0-5.0) (680-93445-10), SB02-01 (0.0-1.0) (680-93445-11), SB02-01 (7.0-8.0) (680-93445-12), SB02-02 (0.0-1.0) (680-93445-13), SB02-02 (4.5-5.5) (680-93445-14), SB02-03 (0.5-1.5) (680-93445-15), SB02-03 (5.0-6.0) (680-93445-16), SB02-04 (0.5-1.5) (680-93445-17), SB02-04 (7.0-8.0) (680-93445-18), SB02-05 (0.5-1.5) (680-93445-19), SB02-05 (7.0-8.0) (680-93445-20), SB02-06 (0.5-1.5) (680-93445-21) and SB02-06 (6.5-7.5) (680-93445-22) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Samples PZ01-04 (680-93445-1), PZ01-09 (680-93445-2), TB 130820-1 (680-93445-25) and TB 130820-2 (680-93445-26) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS

Samples SB01-07 (0.5-1.5) (680-93445-3), SB01-07 (9.0-10.0) (680-93445-4), SB01-08 (1.5-2.5) (680-93445-5), SB01-08 (9.0-10.0) (680-93445-6), SB01-09 (0.0-1.0) (680-93445-7), SB01-09 (4.0-5.0) (680-93445-8), SB01-10 (0.0-1.0) (680-93445-9), SB01-10 (4.0-5.0) (680-93445-10), SB02-01 (0.0-1.0) (680-93445-11), SB02-01 (7.0-8.0) (680-93445-12), SB02-02 (0.0-1.0) (680-93445-13), SB02-02 (4.5-5.5) (680-93445-14), SB02-03 (0.5-1.5) (680-93445-15), SB02-03 (5.0-6.0) (680-93445-16), SB02-04 (0.5-1.5) (680-93445-17), SB02-04 (7.0-8.0) (680-93445-18), SB02-05 (0.5-1.5) (680-93445-19), SB02-05 (7.0-8.0) (680-93445-20), SB02-06 (0.5-1.5) (680-93445-21) and SB02-06 (6.5-7.5) (680-93445-22) were analyzed for Semivolatile Organic Compounds (Solid) in accordance with EPA SW-846 Method 8270D.

Samples PZ01-04 (680-93445-1) and PZ01-09 (680-93445-2) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

The following analytes have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Famphur, 1,4-Napthaquinone, Methane sulfonate, Benzaldehyde, 1-naphthylamine, 2-naphthylamine, p-Dimethylamino azobenzene, p-phenylenediamine, a,a-dimethylphenethylamine, Methapyriline, 2-picoline (2-methylpyridine), 3,3'-dimethylbenzidine, 3,3'-dichlorobenzidine, Benzidine, Benzaldehyde, Benzoic acid, Dinoseb, Hexachlorophene, Hexachlorocyclopentadiene,

Job ID: 680-93445-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

o,o,o-triethylphosphoro-thioate. These analytes may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. These analytes may have a %D >60% if the average %D of all the analytes in the continuing calibration verification (CCV) is 30%.

A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for up to 4 analytes to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 290598 had one analyte outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for sample(s) PZ01-04 (680-93445-1) and SB01-08 (1.5-2.5)MSD (680-93445-5) were outside control limits.

The initial calibration curve analyzed in batch 290775 was outside method criteria for the following analyte(s): Atrazine and Benzidine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

The initial calibration verification (ICV) analyzed in batch 290775 was outside method criteria for the following analyte(s): Benzidine and Benzaldehyde. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Internal standard (ISTD) response for the following sample(s) was outside control limits: PZ01-04 (680-93445-1). The sample(s) was re-analyzed with concurring results. The original set of data has been reported.

The minimum response factor (RF) criteria for the initial calibration (ICAL) analyzed in batch 291413 was outside criteria for the following analyte(s): bis(2-chloroethyl) ether. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered estimated.

The initial calibration curve analyzed in batch 291781 was outside method criteria for the following analyte(s): benzoic acid. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

The continuing calibration verification (CCV) analyzed in batch 291613 was outside the method criteria for the following analyte(s): 2,2'oxybis[1-chloropropane], 2-Methylphenol, 3&4 Methylphenol, Anthracene, Benzidine, 1,2 Dichlorbenzene, Benzyl alcohol, Butyl benzyl phthalate, Carbazole, Di-n-butyl phthalate, Fluoranthene, Hexachloroethane, N-Nitrosodimethylamine, N-Nitrosodi-n-propylamine, phenol, pyrene, pyridine and Terphenyl-d14. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 291919 was outside the method criteria for the following analyte(s): 1,4 Dioxane, 2,3,4,6 Tetrachlorophenol, 2,4 Dinitrophenol, 2,4 Dinitrotoluene, 4,6-Dintro-2-methylphenol, 4 Nitroaniline, Caprolactum, Fluoranthene, N-Nitrosodimethylamine, and Pyridine. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The initial calibration curve analyzed in batch 291440 was outside method criteria for the following analyte(s): Acetophenone and Butyl benzyl phthalate. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

The initial calibration verification (ICV) analyzed in batch 291440 was outside method criteria for the following analyte(s): 1,2,4,5 Tetrachlorobenzene and Di-n-butyl phthalate. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Surrogate recovery for the following sample(s) was outside control limits: SB01-08 (1.5-2.5) (680-93445-5). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

Job ID: 680-93445-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Benzo[g,h,i]perylene, Dibenz(a,h)anthracene and Indeno[1,2,3-cd]pyrene were detected in method blank MB 680-290598/21-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

GASOLINE RANGE ORGANICS (GRO)

Samples SB01-07 (0.5-1.5) (680-93445-3), SB01-07 (9.0-10.0) (680-93445-4), SB01-08 (1.5-2.5) (680-93445-5), SB01-08 (9.0-10.0) (680-93445-6), SB01-09 (0.0-1.0) (680-93445-7), SB01-09 (4.0-5.0) (680-93445-8), SB01-10 (0.0-1.0) (680-93445-9), SB01-10 (4.0-5.0) (680-93445-10), SB02-01 (0.0-1.0) (680-93445-11), SB02-01 (7.0-8.0) (680-93445-12), SB02-02 (0.0-1.0) (680-93445-13), SB02-02 (4.5-5.5) (680-93445-14), SB02-03 (0.5-1.5) (680-93445-15), SB02-03 (5.0-6.0) (680-93445-16), SB02-04 (0.5-1.5) (680-93445-17), SB02-04 (7.0-8.0) (680-93445-18), SB02-05 (0.5-1.5) (680-93445-19), SB02-05 (7.0-8.0) (680-93445-20), SB02-06 (0.5-1.5) (680-93445-21) and SB02-06 (6.5-7.5) (680-93445-22) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015B.

Samples PZ01-04 (680-93445-1) and PZ01-09 (680-93445-2) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015C.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

The tare weights were covered by the client ID labels on 54 of 60 terracores. Tare weights of the vials are used in the calculation of original soil weight.

Method(s) 8015C: Terra core vial 93445-22E (H2O) has a low weight; see batch 680-290368.

Gasoline Range Organics (GRO)-C6-C10 was detected in method blank MB 680-291184/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Internal standard (ISTD) response for the following samples was outside of acceptance limits: SB02-03 (0.5-1.5) (680-93445-15), SB02-04 (7.0-8.0) (680-93445-18), SB02-05 (0.5-1.5) (680-93445-19), SB01-08 (1.5-2.5) (680-93445-5), SB01-08 (9.0-10.0) (680-93445-6), SB02-01 (0.0-1.0) (680-93445-11), SB01-09 (0.0-1.0) (680-93445-7), SB01-10 (0.0-1.0) (680-93445-9), SB02-02 (0.0-1.0) (680-93445-13), SB02-04 (0.5-1.5) (680-93445-17), SB02-06 (0.5-1.5) (680-93445-21), SB01-07 (9.0-10.0) (680-93445-4). The project shows evidence of matrix interference. Sample(s) were reanalyzed confirming the internal standard reponse outside acceptance limites; data have been reported.

Surrogate recovery for the following samples were outside control limits: SB02-03 (0.5-1.5) (680-93445-15), SB02-05 (0.5-1.5) (680-93445-19), SB01-07 (0.5-1.5) (680-93445-3), SB02-01 (0.0-1.0) (680-93445-11). Evidence of matrix interference is present t hroughout the project; therefore, re-analysis was not performed. Data have been reported.

DIESEL RANGE ORGANICS (DRO) and DRO-SGT

Samples SB01-07 (0.5-1.5) (680-93445-3), SB01-07 (9.0-10.0) (680-93445-4), SB01-08 (1.5-2.5) (680-93445-5), SB01-08 (9.0-10.0) (680-93445-6), SB01-09 (0.0-1.0) (680-93445-7), SB01-09 (4.0-5.0) (680-93445-8), SB01-10 (0.0-1.0) (680-93445-9), SB01-10 (4.0-5.0) (680-93445-10), SB02-01 (0.0-1.0) (680-93445-11), SB02-01 (7.0-8.0) (680-93445-12), SB02-02 (0.0-1.0) (680-93445-13), SB02-02 (4.5-5.5) (680-93445-14), SB02-03 (0.5-1.5) (680-93445-15), SB02-03 (5.0-6.0) (680-93445-16), SB02-04 (0.5-1.5) (680-93445-17), SB02-04 (7.0-8.0) (680-93445-18), SB02-05 (0.5-1.5) (680-93445-19), SB02-05 (7.0-8.0) (680-93445-20), SB02-06 (0.5-1.5) (680-93445-21) and SB02-06 (6.5-7.5) (680-93445-22) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Samples PZ01-04 (680-93445-1), PZ01-09 (680-93445-2), PZ01-04 (DRO-SGT) (680-93445-23) and PZ01-09 (DRO-SGT) (680-93445-24) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C. The samples were prepared and analyzed on 08/31/2013.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Job ID: 680-93445-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Diesel Range Organics [C10-C28] and ORO C24-C40 were detected in method blank MB 490-103240/1-A at levels exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. ORO C24-C40 was detected in method blank MB 490-104094/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Internal standard responses were outside of acceptance limits for the following sample(s): SB01-09 (0.0-1.0) (680-93445-7), SB01-09 (4.0-5.0) (680-93445-8), SB01-10 (0.0-1.0) (680-93445-9), SB01-10 (4.0-5.0) (680-93445-10), SB02-01 (0.0-1.0) (680-93445-11), SB02-01 (7.0-8.0) (680-93445-12), SB02-02 (4.5-5.5) (680-93445-14), SB02-03 (0.5-1.5) (680-93445-15), SB02-03 (5.0-6.0) (680-93445-16), SB02-04 (0.5-1.5) (680-93445-17), SB02-04 (7.0-8.0) (680-93445-18), SB02-05 (7.0-8.0) (680-93445-20), SB02-06 (0.5-1.5) (680-93445-21). Samples in this project shows evidence of matrix interference. Samples were reanalyzed confirming the internal standard reponse outside acceptance limites; data have been reported.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-93445-1	PZ01-04	Water	08/20/13 15:40	08/21/13 10:07
680-93445-2	PZ01-09	Water	08/20/13 16:10	08/21/13 10:07
680-93445-3	SB01-07 (0.5-1.5)	Solid	08/20/13 08:30	08/21/13 10:07
680-93445-4	SB01-07 (9.0-10.0)	Solid	08/20/13 08:40	08/21/13 10:07
680-93445-5	SB01-08 (1.5-2.5)	Solid	08/20/13 09:00	08/21/13 10:07
680-93445-6	SB01-08 (9.0-10.0)	Solid	08/20/13 09:10	08/21/13 10:07
680-93445-7	SB01-09 (0.0-1.0)	Solid	08/20/13 09:30	08/21/13 10:07
680-93445-8	SB01-09 (4.0-5.0)	Solid	08/20/13 09:40	08/21/13 10:07
680-93445-9	SB01-10 (0.0-1.0)	Solid	08/20/13 10:15	08/21/13 10:07
680-93445-10	SB01-10 (4.0-5.0)	Solid	08/20/13 10:25	08/21/13 10:07
680-93445-11	SB02-01 (0.0-1.0)	Solid	08/20/13 11:15	08/21/13 10:07
680-93445-12	SB02-01 (7.0-8.0)	Solid	08/20/13 11:25	08/21/13 10:07
680-93445-13	SB02-02 (0.0-1.0)	Solid	08/20/13 11:45	08/21/13 10:07
680-93445-14	SB02-02 (4.5-5.5)	Solid	08/20/13 11:50	08/21/13 10:07
680-93445-15	SB02-03 (0.5-1.5)	Solid	08/20/13 14:10	08/21/13 10:07
680-93445-16	SB02-03 (5.0-6.0)	Solid	08/20/13 14:15	08/21/13 10:07
680-93445-17	SB02-04 (0.5-1.5)	Solid	08/20/13 14:25	08/21/13 10:07
680-93445-18	SB02-04 (7.0-8.0)	Solid	08/20/13 14:30	08/21/13 10:07
680-93445-19	SB02-05 (0.5-1.5)	Solid	08/20/13 14:50	08/21/13 10:07
680-93445-20	SB02-05 (7.0-8.0)	Solid	08/20/13 15:00	08/21/13 10:07
680-93445-21	SB02-06 (0.5-1.5)	Solid	08/20/13 15:25	08/21/13 10:07
680-93445-22	SB02-06 (6.5-7.5)	Solid	08/20/13 15:35	08/21/13 10:07
680-93445-23	PZ01-04 (DRO-SGT)	Water	08/20/13 15:40	08/21/13 10:07
680-93445-24	PZ01-09 (DRO-SGT)	Water	08/20/13 16:10	08/21/13 10:07
680-93445-25	TB 130820-1	Water	08/20/13 00:00	08/21/13 10:07
680-93445-26	TB 130820-2	Water	08/20/13 00:00	08/21/13 10:07

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL NSH

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD exceeds the control limits
B	Compound was found in the blank and sample.
X	Surrogate is outside control limits
F	MS/MSD Recovery and/or RPD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: PZ01-04
Date Collected: 08/20/13 15:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/28/13 22:50	1
Benzene	1.0	U	1.0	0.34	ug/L			08/28/13 22:50	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/28/13 22:50	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/28/13 22:50	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/28/13 22:50	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/28/13 22:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 22:50	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/28/13 22:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/28/13 22:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/28/13 22:50	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/28/13 22:50	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/28/13 22:50	1
2-Hexanone	25	U	25	3.1	ug/L			08/28/13 22:50	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/28/13 22:50	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/28/13 22:50	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/28/13 22:50	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/28/13 22:50	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/28/13 22:50	1
Methyl tert-butyl ether	**0.87**	**J**	1.0	0.74	ug/L			08/28/13 22:50	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/28/13 22:50	1
Styrene	1.0	U	1.0	1.0	ug/L			08/28/13 22:50	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/28/13 22:50	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/28/13 22:50	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/28/13 22:50	1
Toluene	1.0	U	1.0	0.70	ug/L			08/28/13 22:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 22:50	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/28/13 22:50	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/28/13 22:50	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/28/13 22:50	1

Client Sample ID: PZ01-04
Date Collected: 08/20/13 15:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/28/13 22:50	1
Xylenes, Total	10	U	10	1.6	ug/L			08/28/13 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*78 - 118*		*08/28/13 22:50*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*08/28/13 22:50*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/28/13 22:50*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**2.1**	**J**	9.5	0.72	ug/L		08/22/13 14:46	08/26/13 21:55	1
Acenaphthylene	9.5	U	9.5	0.81	ug/L		08/22/13 14:46	08/26/13 21:55	1
Acetophenone	9.5	U	9.5	0.54	ug/L		08/22/13 14:46	08/26/13 21:55	1
Anthracene	9.5	U	9.5	0.66	ug/L		08/22/13 14:46	08/26/13 21:55	1
Atrazine	9.5	U	9.5	1.1	ug/L		08/22/13 14:46	08/26/13 21:55	1
Benzaldehyde	9.5	U	9.5	1.0	ug/L		08/22/13 14:46	08/26/13 21:55	1
Benzo[a]anthracene	9.5	U	9.5	0.52	ug/L		08/22/13 14:46	08/26/13 21:55	1
Benzo[a]pyrene	**3.2**	**J**	9.5	0.68	ug/L		08/22/13 14:46	08/26/13 21:55	1
Benzo[b]fluoranthene	9.5	U	9.5	2.5	ug/L		08/22/13 14:46	08/26/13 21:55	1
Benzo[g,h,i]perylene	**12**		9.5	0.83	ug/L		08/22/13 14:46	08/26/13 21:55	1
Benzo[k]fluoranthene	**2.0**	**J**	9.5	1.1	ug/L		08/22/13 14:46	08/26/13 21:55	1
1,1'-Biphenyl	9.5	U	9.5	0.55	ug/L		08/22/13 14:46	08/26/13 21:55	1
Bis(2-chloroethoxy)methane	9.5	U	9.5	0.90	ug/L		08/22/13 14:46	08/26/13 21:55	1
Bis(2-chloroethyl)ether	9.5	U	9.5	1.0	ug/L		08/22/13 14:46	08/26/13 21:55	1
bis (2-chloroisopropyl) ether	9.5	U	9.5	0.74	ug/L		08/22/13 14:46	08/26/13 21:55	1
Bis(2-ethylhexyl) phthalate	9.5	U	9.5	1.5	ug/L		08/22/13 14:46	08/26/13 21:55	1
4-Bromophenyl phenyl ether	9.5	U	9.5	0.73	ug/L		08/22/13 14:46	08/26/13 21:55	1
Butyl benzyl phthalate	9.5	U	9.5	1.1	ug/L		08/22/13 14:46	08/26/13 21:55	1
Caprolactam	9.5	U	9.5	0.75	ug/L		08/22/13 14:46	08/26/13 21:55	1
Carbazole	9.5	U	9.5	0.68	ug/L		08/22/13 14:46	08/26/13 21:55	1
4-Chloroaniline	19	U	19	2.1	ug/L		08/22/13 14:46	08/26/13 21:55	1
4-Chloro-3-methylphenol	9.5	U	9.5	0.95	ug/L		08/22/13 14:46	08/26/13 21:55	1
2-Chloronaphthalene	9.5	U	9.5	0.76	ug/L		08/22/13 14:46	08/26/13 21:55	1
2-Chlorophenol	9.5	U	9.5	0.83	ug/L		08/22/13 14:46	08/26/13 21:55	1
4-Chlorophenyl phenyl ether	9.5	U	9.5	0.80	ug/L		08/22/13 14:46	08/26/13 21:55	1
Chrysene	9.5	U	9.5	0.49	ug/L		08/22/13 14:46	08/26/13 21:55	1
Dibenz(a,h)anthracene	**9.8**		9.5	0.95	ug/L		08/22/13 14:46	08/26/13 21:55	1
Dibenzofuran	9.5	U	9.5	0.75	ug/L		08/22/13 14:46	08/26/13 21:55	1
3,3'-Dichlorobenzidine	57	U	57	29	ug/L		08/22/13 14:46	08/26/13 21:55	1
2,4-Dichlorophenol	9.5	U	9.5	1.0	ug/L		08/22/13 14:46	08/26/13 21:55	1
Diethyl phthalate	9.5	U	9.5	0.84	ug/L		08/22/13 14:46	08/26/13 21:55	1
2,4-Dimethylphenol	9.5	U	9.5	3.8	ug/L		08/22/13 14:46	08/26/13 21:55	1
Dimethyl phthalate	9.5	U	9.5	0.94	ug/L		08/22/13 14:46	08/26/13 21:55	1
Di-n-butyl phthalate	9.5	U	9.5	0.79	ug/L		08/22/13 14:46	08/26/13 21:55	1
4,6-Dinitro-2-methylphenol	48	U	48	9.5	ug/L		08/22/13 14:46	08/26/13 21:55	1
2,4-Dinitrophenol	48	U	48	9.5	ug/L		08/22/13 14:46	08/26/13 21:55	1
2,4-Dinitrotoluene	9.5	U	9.5	1.1	ug/L		08/22/13 14:46	08/26/13 21:55	1
2,6-Dinitrotoluene	9.5	U	9.5	1.0	ug/L		08/22/13 14:46	08/26/13 21:55	1
Di-n-octyl phthalate	9.5	U	9.5	1.3	ug/L		08/22/13 14:46	08/26/13 21:55	1

Client Sample ID: PZ01-04
Date Collected: 08/20/13 15:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	9.5	U	9.5	0.70	ug/L		08/22/13 14:46	08/26/13 21:55	1
Fluorene	**3.7**	**J**	9.5	0.91	ug/L		08/22/13 14:46	08/26/13 21:55	1
Hexachlorobenzene	9.5	U	9.5	0.75	ug/L		08/22/13 14:46	08/26/13 21:55	1
Hexachlorobutadiene	9.5	U	9.5	0.59	ug/L		08/22/13 14:46	08/26/13 21:55	1
Hexachlorocyclopentadiene	9.5	U	9.5	2.4	ug/L		08/22/13 14:46	08/26/13 21:55	1
Hexachloroethane	9.5	U	9.5	0.72	ug/L		08/22/13 14:46	08/26/13 21:55	1
Indeno[1,2,3-cd]pyrene	**1.8**	**J**	9.5	0.95	ug/L		08/22/13 14:46	08/26/13 21:55	1
Isophorone	9.5	U	9.5	0.86	ug/L		08/22/13 14:46	08/26/13 21:55	1
2-Methylnaphthalene	9.5	U	9.5	0.74	ug/L		08/22/13 14:46	08/26/13 21:55	1
2-Methylphenol	9.5	U	9.5	0.85	ug/L		08/22/13 14:46	08/26/13 21:55	1
3 & 4 Methylphenol	9.5	U	9.5	1.2	ug/L		08/22/13 14:46	08/26/13 21:55	1
Naphthalene	9.5	U	9.5	0.67	ug/L		08/22/13 14:46	08/26/13 21:55	1
2-Nitroaniline	48	U	48	1.2	ug/L		08/22/13 14:46	08/26/13 21:55	1
3-Nitroaniline	48	U	48	4.8	ug/L		08/22/13 14:46	08/26/13 21:55	1
4-Nitroaniline	48	U	48	4.8	ug/L		08/22/13 14:46	08/26/13 21:55	1
Nitrobenzene	9.5	U	9.5	0.70	ug/L		08/22/13 14:46	08/26/13 21:55	1
2-Nitrophenol	9.5	U	9.5	0.72	ug/L		08/22/13 14:46	08/26/13 21:55	1
4-Nitrophenol	48	U	48	1.8	ug/L		08/22/13 14:46	08/26/13 21:55	1
N-Nitrosodi-n-propylamine	9.5	U	9.5	0.69	ug/L		08/22/13 14:46	08/26/13 21:55	1
N-Nitrosodiphenylamine	9.5	U	9.5	0.88	ug/L		08/22/13 14:46	08/26/13 21:55	1
Pentachlorophenol	48	U	48	1.9	ug/L		08/22/13 14:46	08/26/13 21:55	1
Phenanthrene	9.5	U	9.5	0.73	ug/L		08/22/13 14:46	08/26/13 21:55	1
Phenol	9.5	U	9.5	0.79	ug/L		08/22/13 14:46	08/26/13 21:55	1
Pyrene	9.5	U	9.5	0.60	ug/L		08/22/13 14:46	08/26/13 21:55	1
2,4,5-Trichlorophenol	9.5	U	9.5	1.1	ug/L		08/22/13 14:46	08/26/13 21:55	1
2,4,6-Trichlorophenol	9.5	U	9.5	0.81	ug/L		08/22/13 14:46	08/26/13 21:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*69*		*38 - 130*	*08/22/13 14:46*	*08/26/13 21:55*	*1*
2-Fluorophenol (Surr)	*68*		*25 - 130*	*08/22/13 14:46*	*08/26/13 21:55*	*1*
Nitrobenzene-d5 (Surr)	*67*		*39 - 130*	*08/22/13 14:46*	*08/26/13 21:55*	*1*
Phenol-d5 (Surr)	*54*		*25 - 130*	*08/22/13 14:46*	*08/26/13 21:55*	*1*
Terphenyl-d14 (Surr)	*70*		*10 - 143*	*08/22/13 14:46*	*08/26/13 21:55*	*1*
2,4,6-Tribromophenol (Surr)	*93*		*31 - 141*	*08/22/13 14:46*	*08/26/13 21:55*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**34**	**J B**	50	11	ug/L			08/28/13 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*91*		*70 - 130*		*08/28/13 12:34*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1500**		95	27	ug/L		08/31/13 08:40	08/31/13 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*91*		*50 - 150*	*08/31/13 08:40*	*08/31/13 19:20*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: PZ01-09
Date Collected: 08/20/13 16:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/28/13 23:15	1
Benzene	1.0	U	1.0	0.34	ug/L			08/28/13 23:15	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/28/13 23:15	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/28/13 23:15	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/28/13 23:15	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/28/13 23:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 23:15	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/28/13 23:15	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/28/13 23:15	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/28/13 23:15	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/28/13 23:15	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/28/13 23:15	1
2-Hexanone	25	U	25	3.1	ug/L			08/28/13 23:15	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/28/13 23:15	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/28/13 23:15	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/28/13 23:15	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/28/13 23:15	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/28/13 23:15	1
Methyl tert-butyl ether	**3.0**		1.0	0.74	ug/L			08/28/13 23:15	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/28/13 23:15	1
Styrene	1.0	U	1.0	1.0	ug/L			08/28/13 23:15	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/28/13 23:15	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/28/13 23:15	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/28/13 23:15	1
Toluene	1.0	U	1.0	0.70	ug/L			08/28/13 23:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 23:15	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/28/13 23:15	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/28/13 23:15	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/28/13 23:15	1

Client Sample ID: PZ01-09
Date Collected: 08/20/13 16:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/28/13 23:15	1
Xylenes, Total	10	U	10	1.6	ug/L			08/28/13 23:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/28/13 23:15*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*08/28/13 23:15*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/28/13 23:15*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7	0.74	ug/L		08/22/13 14:46	08/26/13 22:20	1
Acenaphthylene	9.7	U	9.7	0.82	ug/L		08/22/13 14:46	08/26/13 22:20	1
Acetophenone	9.7	U	9.7	0.55	ug/L		08/22/13 14:46	08/26/13 22:20	1
Anthracene	9.7	U	9.7	0.67	ug/L		08/22/13 14:46	08/26/13 22:20	1
Atrazine	9.7	U	9.7	1.2	ug/L		08/22/13 14:46	08/26/13 22:20	1
Benzaldehyde	9.7	U	9.7	1.1	ug/L		08/22/13 14:46	08/26/13 22:20	1
Benzo[a]anthracene	9.7	U	9.7	0.53	ug/L		08/22/13 14:46	08/26/13 22:20	1
Benzo[a]pyrene	9.7	U	9.7	0.69	ug/L		08/22/13 14:46	08/26/13 22:20	1
Benzo[b]fluoranthene	9.7	U	9.7	2.5	ug/L		08/22/13 14:46	08/26/13 22:20	1
Benzo[g,h,i]perylene	9.7	U	9.7	0.84	ug/L		08/22/13 14:46	08/26/13 22:20	1
Benzo[k]fluoranthene	9.7	U	9.7	1.2	ug/L		08/22/13 14:46	08/26/13 22:20	1
1,1'-Biphenyl	9.7	U	9.7	0.56	ug/L		08/22/13 14:46	08/26/13 22:20	1
Bis(2-chloroethoxy)methane	9.7	U	9.7	0.91	ug/L		08/22/13 14:46	08/26/13 22:20	1
Bis(2-chloroethyl)ether	9.7	U	9.7	1.1	ug/L		08/22/13 14:46	08/26/13 22:20	1
bis (2-chloroisopropyl) ether	9.7	U	9.7	0.76	ug/L		08/22/13 14:46	08/26/13 22:20	1
Bis(2-ethylhexyl) phthalate	9.7	U	9.7	1.6	ug/L		08/22/13 14:46	08/26/13 22:20	1
4-Bromophenyl phenyl ether	9.7	U	9.7	0.75	ug/L		08/22/13 14:46	08/26/13 22:20	1
Butyl benzyl phthalate	9.7	U	9.7	1.2	ug/L		08/22/13 14:46	08/26/13 22:20	1
Caprolactam	9.7	U	9.7	0.77	ug/L		08/22/13 14:46	08/26/13 22:20	1
Carbazole	9.7	U	9.7	0.69	ug/L		08/22/13 14:46	08/26/13 22:20	1
4-Chloroaniline	19	U	19	2.1	ug/L		08/22/13 14:46	08/26/13 22:20	1
4-Chloro-3-methylphenol	9.7	U	9.7	0.97	ug/L		08/22/13 14:46	08/26/13 22:20	1
2-Chloronaphthalene	9.7	U	9.7	0.78	ug/L		08/22/13 14:46	08/26/13 22:20	1
2-Chlorophenol	9.7	U	9.7	0.84	ug/L		08/22/13 14:46	08/26/13 22:20	1
4-Chlorophenyl phenyl ether	9.7	U	9.7	0.82	ug/L		08/22/13 14:46	08/26/13 22:20	1
Chrysene	9.7	U	9.7	0.49	ug/L		08/22/13 14:46	08/26/13 22:20	1
Dibenz(a,h)anthracene	9.7	U	9.7	0.97	ug/L		08/22/13 14:46	08/26/13 22:20	1
Dibenzofuran	9.7	U	9.7	0.77	ug/L		08/22/13 14:46	08/26/13 22:20	1
3,3'-Dichlorobenzidine	58	U	58	29	ug/L		08/22/13 14:46	08/26/13 22:20	1
2,4-Dichlorophenol	9.7	U	9.7	1.1	ug/L		08/22/13 14:46	08/26/13 22:20	1
Diethyl phthalate	9.7	U	9.7	0.85	ug/L		08/22/13 14:46	08/26/13 22:20	1
2,4-Dimethylphenol	9.7	U	9.7	3.9	ug/L		08/22/13 14:46	08/26/13 22:20	1
Dimethyl phthalate	9.7	U	9.7	0.96	ug/L		08/22/13 14:46	08/26/13 22:20	1
Di-n-butyl phthalate	9.7	U	9.7	0.81	ug/L		08/22/13 14:46	08/26/13 22:20	1
4,6-Dinitro-2-methylphenol	49	U	49	9.7	ug/L		08/22/13 14:46	08/26/13 22:20	1
2,4-Dinitrophenol	49	U	49	9.7	ug/L		08/22/13 14:46	08/26/13 22:20	1
2,4-Dinitrotoluene	9.7	U	9.7	1.2	ug/L		08/22/13 14:46	08/26/13 22:20	1
2,6-Dinitrotoluene	9.7	U	9.7	1.1	ug/L		08/22/13 14:46	08/26/13 22:20	1
Di-n-octyl phthalate	9.7	U	9.7	1.4	ug/L		08/22/13 14:46	08/26/13 22:20	1

Client Sample ID: PZ01-09
Date Collected: 08/20/13 16:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-2
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	9.7	U	9.7	0.72	ug/L		08/22/13 14:46	08/26/13 22:20	1
Fluorene	9.7	U	9.7	0.93	ug/L		08/22/13 14:46	08/26/13 22:20	1
Hexachlorobenzene	9.7	U	9.7	0.77	ug/L		08/22/13 14:46	08/26/13 22:20	1
Hexachlorobutadiene	9.7	U	9.7	0.60	ug/L		08/22/13 14:46	08/26/13 22:20	1
Hexachlorocyclopentadiene	9.7	U	9.7	2.4	ug/L		08/22/13 14:46	08/26/13 22:20	1
Hexachloroethane	9.7	U	9.7	0.74	ug/L		08/22/13 14:46	08/26/13 22:20	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7	0.97	ug/L		08/22/13 14:46	08/26/13 22:20	1
Isophorone	9.7	U	9.7	0.87	ug/L		08/22/13 14:46	08/26/13 22:20	1
2-Methylnaphthalene	9.7	U	9.7	0.76	ug/L		08/22/13 14:46	08/26/13 22:20	1
2-Methylphenol	9.7	U	9.7	0.86	ug/L		08/22/13 14:46	08/26/13 22:20	1
3 & 4 Methylphenol	9.7	U	9.7	1.3	ug/L		08/22/13 14:46	08/26/13 22:20	1
Naphthalene	9.7	U	9.7	0.68	ug/L		08/22/13 14:46	08/26/13 22:20	1
2-Nitroaniline	49	U	49	1.3	ug/L		08/22/13 14:46	08/26/13 22:20	1
3-Nitroaniline	49	U	49	4.9	ug/L		08/22/13 14:46	08/26/13 22:20	1
4-Nitroaniline	49	U	49	4.9	ug/L		08/22/13 14:46	08/26/13 22:20	1
Nitrobenzene	9.7	U	9.7	0.71	ug/L		08/22/13 14:46	08/26/13 22:20	1
2-Nitrophenol	9.7	U	9.7	0.74	ug/L		08/22/13 14:46	08/26/13 22:20	1
4-Nitrophenol	49	U	49	1.8	ug/L		08/22/13 14:46	08/26/13 22:20	1
N-Nitrosodi-n-propylamine	9.7	U	9.7	0.70	ug/L		08/22/13 14:46	08/26/13 22:20	1
N-Nitrosodiphenylamine	9.7	U	9.7	0.89	ug/L		08/22/13 14:46	08/26/13 22:20	1
Pentachlorophenol	49	U	49	1.9	ug/L		08/22/13 14:46	08/26/13 22:20	1
Phenanthrene	9.7	U	9.7	0.75	ug/L		08/22/13 14:46	08/26/13 22:20	1
Phenol	9.7	U	9.7	0.81	ug/L		08/22/13 14:46	08/26/13 22:20	1
Pyrene	9.7	U	9.7	0.61	ug/L		08/22/13 14:46	08/26/13 22:20	1
2,4,5-Trichlorophenol	9.7	U	9.7	1.2	ug/L		08/22/13 14:46	08/26/13 22:20	1
2,4,6-Trichlorophenol	9.7	U	9.7	0.82	ug/L		08/22/13 14:46	08/26/13 22:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*38 - 130*	*08/22/13 14:46*	*08/26/13 22:20*	*1*
2-Fluorophenol (Surr)	*71*		*25 - 130*	*08/22/13 14:46*	*08/26/13 22:20*	*1*
Nitrobenzene-d5 (Surr)	*77*		*39 - 130*	*08/22/13 14:46*	*08/26/13 22:20*	*1*
Phenol-d5 (Surr)	*66*		*25 - 130*	*08/22/13 14:46*	*08/26/13 22:20*	*1*
Terphenyl-d14 (Surr)	*53*		*10 - 143*	*08/22/13 14:46*	*08/26/13 22:20*	*1*
2,4,6-Tribromophenol (Surr)	*90*		*31 - 141*	*08/22/13 14:46*	*08/26/13 22:20*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**18**	**J B**	50	11	ug/L			08/28/13 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*92*		*70 - 130*		*08/28/13 12:59*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**140**		95	27	ug/L		08/31/13 08:40	08/31/13 19:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*83*		*50 - 150*	*08/31/13 08:40*	*08/31/13 19:36*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-07 (0.5-1.5)
Date Collected: 08/20/13 08:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-3
Matrix: Solid
Percent Solids: 71.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	45	U	45	13	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Benzene	9.0	U	9.0	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Bromodichloromethane	9.0	U	9.0	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Bromoform	9.0	U	9.0	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Bromomethane	9.0	U	9.0	2.5	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Carbon disulfide	9.0	U	9.0	2.2	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Carbon tetrachloride	9.0	U	9.0	3.1	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Chlorobenzene	9.0	U	9.0	0.94	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Chloroethane	9.0	U	9.0	3.4	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Chloroform	9.0	U	9.0	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Chloromethane	9.0	U	9.0	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
cis-1,2-Dichloroethene	9.0	U	9.0	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
cis-1,3-Dichloropropene	9.0	U	9.0	2.2	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Cyclohexane	9.0	U	9.0	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Dibromochloromethane	9.0	U	9.0	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,2-Dibromo-3-Chloropropane	9.0	U	9.0	6.0	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,2-Dichlorobenzene	9.0	U	9.0	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,3-Dichlorobenzene	9.0	U	9.0	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,4-Dichlorobenzene	9.0	U	9.0	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Dichlorodifluoromethane	9.0	U	9.0	2.3	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,1-Dichloroethane	9.0	U	9.0	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,2-Dichloroethane	9.0	U	9.0	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,1-Dichloroethene	9.0	U	9.0	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,2-Dichloropropane	9.0	U	9.0	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Diisopropyl ether	9.0	U	9.0	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Ethylbenzene	9.0	U	9.0	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Ethylene Dibromide	9.0	U	9.0	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Ethyl tert-butyl ether	9.0	U	9.0	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
2-Hexanone	45	U	45	9.0	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Isopropylbenzene	9.0	U	9.0	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Methyl acetate	9.0	U	9.0	8.3	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Methylcyclohexane	9.0	U	9.0	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Methylene Chloride	27	U	27	18	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Methyl Ethyl Ketone	45	U	45	7.4	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
methyl isobutyl ketone	45	U	45	7.2	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Methyl tert-butyl ether	9.0	U	9.0	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Naphthalene	9.0	U	9.0	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Styrene	9.0	U	9.0	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Tert-amyl methyl ether	9.0	U	9.0	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
tert-Butyl alcohol	9.0	U	9.0	6.1	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,1,2,2-Tetrachloroethane	9.0	U	9.0	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Tetrachloroethene	9.0	U	9.0	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Toluene	9.0	U	9.0	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
trans-1,2-Dichloroethene	9.0	U	9.0	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
trans-1,3-Dichloropropene	9.0	U	9.0	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,2,4-Trichlorobenzene	9.0	U	9.0	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,1,1-Trichloroethane	9.0	U	9.0	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,1,2-Trichloroethane	9.0	U	9.0	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Trichloroethene	9.0	U	9.0	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1

Client Sample ID: SB01-07 (0.5-1.5)
Date Collected: 08/20/13 08:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-3
Matrix: Solid
Percent Solids: 71.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**2.4**	**J**	9.0	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	9.0	U	9.0	3.6	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Vinyl chloride	9.0	U	9.0	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1
Xylenes, Total	18	U	18	3.4	ug/Kg	☼	08/23/13 16:13	08/27/13 17:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/23/13 16:13*	*08/27/13 17:55*	*1*
Dibromofluoromethane	*105*		*79 - 123*	*08/23/13 16:13*	*08/27/13 17:55*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/27/13 17:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	**100**	**J**	450	80	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Phenol	450	U	450	47	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Bis(2-chloroethyl)ether	450	U	450	62	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2-Chlorophenol	450	U	450	55	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2-Methylphenol	450	U	450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
bis (2-chloroisopropyl) ether	450	U	450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Acetophenone	**74**	**J**	450	39	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
3 & 4 Methylphenol	450	U	450	59	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
N-Nitrosodi-n-propylamine	450	U	450	44	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Hexachloroethane	450	U	450	39	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Nitrobenzene	450	U	450	36	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Isophorone	450	U	450	45	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2-Nitrophenol	450	U	450	57	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2,4-Dimethylphenol	450	U	450	61	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Bis(2-chloroethoxy)methane	450	U	450	54	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2,4-Dichlorophenol	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Naphthalene	**490**		450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
4-Chloroaniline	910	U *	910	72	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Hexachlorobutadiene	450	U	450	50	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Caprolactam	450	U	450	91	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
4-Chloro-3-methylphenol	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2-Methylnaphthalene	**570**		450	52	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Hexachlorocyclopentadiene	450	U	450	57	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2,4,6-Trichlorophenol	450	U	450	40	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2,4,5-Trichlorophenol	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
1,1'-Biphenyl	1000	U	1000	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2-Chloronaphthalene	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2-Nitroaniline	2300	U	2300	62	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Dimethyl phthalate	450	U	450	47	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2,6-Dinitrotoluene	450	U	450	58	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Acenaphthylene	450	U	450	50	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
3-Nitroaniline	2300	U	2300	63	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Acenaphthene	450	U	450	57	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2,4-Dinitrophenol	2300	U	2300	1100	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
4-Nitrophenol	2300	U	2300	450	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Dibenzofuran	**200**	**J**	450	45	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
2,4-Dinitrotoluene	450	U	450	68	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Diethyl phthalate	450	U	450	51	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1

Client Sample ID: SB01-07 (0.5-1.5)
Date Collected: 08/20/13 08:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-3
Matrix: Solid
Percent Solids: 71.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	450	U	450	50	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
4-Chlorophenyl phenyl ether	450	U	450	61	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
4-Nitroaniline	2300	U	2300	68	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
4,6-Dinitro-2-methylphenol	2300	U	2300	230	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
N-Nitrosodiphenylamine	450	U	450	45	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
4-Bromophenyl phenyl ether	450	U	450	50	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Hexachlorobenzene	450	U	450	54	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Atrazine	450	U	450	32	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Pentachlorophenol	2300	U	2300	450	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Phenanthrene	**750**		450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Anthracene	**71**	**J**	450	34	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Carbazole	**45**	**J**	450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Di-n-butyl phthalate	450	U	450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Fluoranthene	**750**		450	44	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Pyrene	**450**		450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Butyl benzyl phthalate	450	U	450	36	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
3,3'-Dichlorobenzidine	910	U	910	39	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Benzo[a]anthracene	**280**	**J**	450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Chrysene	**440**	**J**	450	29	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Bis(2-ethylhexyl) phthalate	450	U	450	40	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Di-n-octyl phthalate	450	U	450	40	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Benzo[b]fluoranthene	**500**		450	52	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Benzo[k]fluoranthene	**180**	**J**	450	90	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Benzo[a]pyrene	**280**	**J**	450	72	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Indeno[1,2,3-cd]pyrene	**320**	**J B**	450	39	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Dibenz(a,h)anthracene	**240**	**J B**	450	54	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1
Benzo[g,h,i]perylene	**320**	**J B**	450	30	ug/Kg	☼	08/23/13 13:40	08/30/13 01:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*61*		*46 - 130*	*08/23/13 13:40*	*08/30/13 01:07*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/23/13 13:40*	*08/30/13 01:07*	*1*
Terphenyl-d14 (Surr)	*82*		*60 - 130*	*08/23/13 13:40*	*08/30/13 01:07*	*1*
Phenol-d5 (Surr)	*50*		*49 - 130*	*08/23/13 13:40*	*08/30/13 01:07*	*1*
2-Fluorophenol (Surr)	*47*		*40 - 130*	*08/23/13 13:40*	*08/30/13 01:07*	*1*
2,4,6-Tribromophenol (Surr)	*59*		*58 - 130*	*08/23/13 13:40*	*08/30/13 01:07*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**28000**		13000	960	ug/Kg	☼	08/22/13 10:07	08/27/13 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*20*	*X*	*70 - 131*	*08/22/13 10:07*	*08/27/13 17:48*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**38000**		6700	1900	ug/Kg	☼	08/31/13 08:51	08/31/13 21:43	1
ORO C24-C40	**25000**	**B**	6700	1900	ug/Kg	☼	08/31/13 08:51	08/31/13 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*50 - 150*	*08/31/13 08:51*	*08/31/13 21:43*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-07 (9.0-10.0)
Date Collected: 08/20/13 08:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-4
Matrix: Solid
Percent Solids: 74.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**110**		29	8.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Benzene	5.7	U	5.7	0.56	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Bromodichloromethane	5.7	U	5.7	0.96	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Bromoform	5.7	U	5.7	0.72	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Bromomethane	5.7	U	5.7	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Carbon disulfide	5.7	U	5.7	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Carbon tetrachloride	5.7	U	5.7	1.9	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Chlorobenzene	5.7	U	5.7	0.59	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Chloroethane	5.7	U	5.7	2.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Chloroform	5.7	U	5.7	0.67	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Chloromethane	5.7	U	5.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
cis-1,2-Dichloroethene	5.7	U	5.7	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
cis-1,3-Dichloropropene	5.7	U	5.7	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Cyclohexane	5.7	U	5.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Dibromochloromethane	5.7	U	5.7	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,2-Dibromo-3-Chloropropane	5.7	U	5.7	3.8	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,2-Dichlorobenzene	5.7	U	5.7	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,3-Dichlorobenzene	5.7	U	5.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,4-Dichlorobenzene	5.7	U	5.7	0.94	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Dichlorodifluoromethane	5.7	U	5.7	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,1-Dichloroethane	5.7	U	5.7	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,2-Dichloroethane	5.7	U	5.7	0.94	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,1-Dichloroethene	5.7	U	5.7	0.86	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,2-Dichloropropane	5.7	U	5.7	0.84	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Diisopropyl ether	5.7	U	5.7	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Ethylbenzene	5.7	U	5.7	0.70	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Ethylene Dibromide	5.7	U	5.7	0.55	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Ethyl tert-butyl ether	5.7	U	5.7	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
2-Hexanone	29	U	29	5.7	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Isopropylbenzene	5.7	U	5.7	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Methyl acetate	5.7	U	5.7	5.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Methylcyclohexane	**18**		5.7	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Methylene Chloride	17	U	17	11	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Methyl Ethyl Ketone	**23**	**J**	29	4.7	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
methyl isobutyl ketone	29	U	29	4.6	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Methyl tert-butyl ether	**2.1**	**J**	5.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Naphthalene	5.7	U	5.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Styrene	5.7	U	5.7	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Tert-amyl methyl ether	5.7	U	5.7	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
tert-Butyl alcohol	5.7	U	5.7	3.9	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,1,2,2-Tetrachloroethane	5.7	U	5.7	0.82	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Tetrachloroethene	5.7	U	5.7	0.96	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Toluene	5.7	U	5.7	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
trans-1,2-Dichloroethene	5.7	U	5.7	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
trans-1,3-Dichloropropene	5.7	U	5.7	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,2,4-Trichlorobenzene	5.7	U	5.7	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,1,1-Trichloroethane	5.7	U	5.7	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,1,2-Trichloroethane	5.7	U	5.7	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Trichloroethene	5.7	U	5.7	0.55	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-07 (9.0-10.0)
Date Collected: 08/20/13 08:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-4
Matrix: Solid
Percent Solids: 74.4

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.7	U	5.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.7	U	5.7	2.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Vinyl chloride	5.7	U	5.7	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1
Xylenes, Total	11	U	11	2.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/27/13 18:18*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/23/13 16:13*	*08/27/13 18:18*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/27/13 18:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	440	U	440	77	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Phenol	440	U	440	45	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Bis(2-chloroethyl)ether	440	U	440	60	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2-Chlorophenol	440	U	440	53	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2-Methylphenol	440	U	440	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
bis (2-chloroisopropyl) ether	440	U	440	40	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Acetophenone	440	U	440	37	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
3 & 4 Methylphenol	440	U	440	57	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
N-Nitrosodi-n-propylamine	440	U	440	42	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Hexachloroethane	440	U	440	37	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Nitrobenzene	440	U	440	35	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Isophorone	440	U	440	44	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2-Nitrophenol	440	U	440	54	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2,4-Dimethylphenol	440	U	440	58	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Bis(2-chloroethoxy)methane	440	U	440	52	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2,4-Dichlorophenol	440	U	440	46	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Naphthalene	440	U	440	40	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
4-Chloroaniline	880	U *	880	69	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Hexachlorobutadiene	440	U	440	48	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Caprolactam	440	U	440	88	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
4-Chloro-3-methylphenol	440	U	440	46	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2-Methylnaphthalene	440	U	440	50	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Hexachlorocyclopentadiene	440	U	440	54	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2,4,6-Trichlorophenol	440	U	440	38	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2,4,5-Trichlorophenol	440	U	440	46	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
1,1'-Biphenyl	980	U	980	980	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2-Chloronaphthalene	440	U	440	46	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2-Nitroaniline	2300	U	2300	60	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Dimethyl phthalate	440	U	440	45	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2,6-Dinitrotoluene	440	U	440	56	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Acenaphthylene	440	U	440	48	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
3-Nitroaniline	2300	U	2300	61	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Acenaphthene	440	U	440	54	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2,4-Dinitrophenol	2300	U	2300	1100	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
4-Nitrophenol	2300	U	2300	440	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Dibenzofuran	440	U	440	44	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
2,4-Dinitrotoluene	440	U	440	65	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Diethyl phthalate	440	U	440	49	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1

Client Sample ID: SB01-07 (9.0-10.0)
Date Collected: 08/20/13 08:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-4
Matrix: Solid
Percent Solids: 74.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	440	U	440	48	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
4-Chlorophenyl phenyl ether	440	U	440	58	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
4-Nitroaniline	2300	U	2300	65	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
4,6-Dinitro-2-methylphenol	2300	U	2300	230	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
N-Nitrosodiphenylamine	440	U	440	44	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
4-Bromophenyl phenyl ether	440	U	440	48	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Hexachlorobenzene	440	U	440	52	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Atrazine	440	U	440	31	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Pentachlorophenol	2300	U	2300	440	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Phenanthrene	440	U	440	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Anthracene	440	U	440	33	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Carbazole	440	U	440	40	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Di-n-butyl phthalate	440	U	440	40	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Fluoranthene	440	U	440	42	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Pyrene	440	U	440	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Butyl benzyl phthalate	440	U	440	35	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
3,3'-Dichlorobenzidine	880	U	880	37	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Benzo[a]anthracene	440	U	440	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Chrysene	440	U	440	28	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Bis(2-ethylhexyl) phthalate	440	U	440	38	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Di-n-octyl phthalate	440	U	440	38	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Benzo[b]fluoranthene	440	U	440	50	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Benzo[k]fluoranthene	440	U	440	86	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Benzo[a]pyrene	440	U	440	69	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Indeno[1,2,3-cd]pyrene	440	U	440	37	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Dibenz(a,h)anthracene	440	U	440	52	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1
Benzo[g,h,i]perylene	440	U	440	29	ug/Kg	☼	08/23/13 13:40	09/03/13 15:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*58*		*46 - 130*	*08/23/13 13:40*	*09/03/13 15:11*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/23/13 13:40*	*09/03/13 15:11*	*1*
Terphenyl-d14 (Surr)	*69*		*60 - 130*	*08/23/13 13:40*	*09/03/13 15:11*	*1*
Phenol-d5 (Surr)	*76*		*49 - 130*	*08/23/13 13:40*	*09/03/13 15:11*	*1*
2-Fluorophenol (Surr)	*91*		*40 - 130*	*08/23/13 13:40*	*09/03/13 15:11*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*58 - 130*	*08/23/13 13:40*	*09/03/13 15:11*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**4500**		270	21	ug/Kg	☼	08/22/13 10:07	08/28/13 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*113*		*70 - 131*	*08/22/13 10:07*	*08/28/13 19:20*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1800**	**J**	6500	1800	ug/Kg	☼	08/31/13 08:51	08/31/13 21:59	1
ORO C24-C40	**4400**	**J B**	6500	1800	ug/Kg	☼	08/31/13 08:51	08/31/13 21:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*101*		*50 - 150*	*08/31/13 08:51*	*08/31/13 21:59*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-08 (1.5-2.5)
Date Collected: 08/20/13 09:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-5
Matrix: Solid
Percent Solids: 78.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	34	U	34	9.8	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Benzene	6.7	U	6.7	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Bromodichloromethane	6.7	U	6.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Bromoform	6.7	U	6.7	0.84	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Bromomethane	6.7	U	6.7	1.9	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Carbon disulfide	6.7	U	6.7	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Carbon tetrachloride	6.7	U	6.7	2.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Chlorobenzene	6.7	U	6.7	0.70	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Chloroethane	6.7	U	6.7	2.5	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Chloroform	6.7	U	6.7	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Chloromethane	6.7	U	6.7	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
cis-1,2-Dichloroethene	6.7	U	6.7	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
cis-1,3-Dichloropropene	6.7	U	6.7	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Cyclohexane	6.7	U	6.7	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Dibromochloromethane	6.7	U	6.7	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,2-Dibromo-3-Chloropropane	6.7	U	6.7	4.4	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,2-Dichlorobenzene	6.7	U	6.7	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,3-Dichlorobenzene	6.7	U	6.7	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,4-Dichlorobenzene	6.7	U	6.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Dichlorodifluoromethane	6.7	U	6.7	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,1-Dichloroethane	6.7	U	6.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,2-Dichloroethane	6.7	U	6.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,1-Dichloroethene	6.7	U	6.7	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,2-Dichloropropane	6.7	U	6.7	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Diisopropyl ether	6.7	U	6.7	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Ethylbenzene	6.7	U	6.7	0.82	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Ethylene Dibromide	6.7	U	6.7	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Ethyl tert-butyl ether	6.7	U	6.7	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
2-Hexanone	34	U	34	6.7	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Isopropylbenzene	6.7	U	6.7	0.91	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Methyl acetate	6.7	U	6.7	6.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Methylcyclohexane	6.7	U	6.7	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Methylene Chloride	20	U	20	13	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Methyl Ethyl Ketone	34	U	34	5.5	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
methyl isobutyl ketone	34	U	34	5.4	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Methyl tert-butyl ether	6.7	U	6.7	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Naphthalene	6.7	U	6.7	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Styrene	6.7	U	6.7	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Tert-amyl methyl ether	6.7	U	6.7	0.59	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
tert-Butyl alcohol	6.7	U	6.7	4.6	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,1,2,2-Tetrachloroethane	6.7	U	6.7	0.97	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Tetrachloroethene	6.7	U	6.7	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Toluene	6.7	U	6.7	0.94	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
trans-1,2-Dichloroethene	6.7	U	6.7	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
trans-1,3-Dichloropropene	6.7	U	6.7	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,2,4-Trichlorobenzene	6.7	U	6.7	0.98	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,1,1-Trichloroethane	6.7	U	6.7	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,1,2-Trichloroethane	6.7	U	6.7	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Trichloroethene	6.7	U	6.7	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-08 (1.5-2.5)
Date Collected: 08/20/13 09:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-5
Matrix: Solid
Percent Solids: 78.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	6.7	U	6.7	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	6.7	U	6.7	2.7	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Vinyl chloride	6.7	U	6.7	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1
Xylenes, Total	13	U	13	2.5	ug/Kg	☼	08/23/13 16:13	08/27/13 18:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/23/13 16:13*	*08/27/13 18:44*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/23/13 16:13*	*08/27/13 18:44*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/27/13 18:44*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	420	U	420	73	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Phenol	420	U	420	43	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Bis(2-chloroethyl)ether	420	U	420	57	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2-Chlorophenol	420	U	420	50	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2-Methylphenol	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
bis (2-chloroisopropyl) ether	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Acetophenone	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
3 & 4 Methylphenol	420	U	420	54	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
N-Nitrosodi-n-propylamine	420	U	420	40	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Hexachloroethane	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Nitrobenzene	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Isophorone	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2-Nitrophenol	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2,4-Dimethylphenol	420	U	420	55	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Bis(2-chloroethoxy)methane	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2,4-Dichlorophenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Naphthalene	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
4-Chloroaniline	830	U *	830	66	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Hexachlorobutadiene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Caprolactam	420	U	420	83	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
4-Chloro-3-methylphenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2-Methylnaphthalene	420	U	420	48	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Hexachlorocyclopentadiene	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2,4,6-Trichlorophenol	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2,4,5-Trichlorophenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
1,1'-Biphenyl	930	U	930	930	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2-Chloronaphthalene	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Dimethyl phthalate	420	U	420	43	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2,6-Dinitrotoluene	420	U	420	53	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Acenaphthylene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
3-Nitroaniline	2100	U	2100	58	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Acenaphthene	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
4-Nitrophenol	2100	U	2100	420	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Dibenzofuran	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
2,4-Dinitrotoluene	420	U	420	62	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Diethyl phthalate	420	U	420	47	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1

Client Sample ID: SB01-08 (1.5-2.5)
Date Collected: 08/20/13 09:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-5
Matrix: Solid
Percent Solids: 78.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
4-Chlorophenyl phenyl ether	420	U	420	55	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
4-Nitroaniline	2100	U	2100	62	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
N-Nitrosodiphenylamine	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
4-Bromophenyl phenyl ether	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Hexachlorobenzene	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Atrazine	420	U	420	29	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Pentachlorophenol	2100	U	2100	420	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Phenanthrene	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Anthracene	420	U	420	32	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Carbazole	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Di-n-butyl phthalate	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Fluoranthene	420	U	420	40	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Pyrene	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Butyl benzyl phthalate	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
3,3'-Dichlorobenzidine	830	U	830	35	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Benzo[a]anthracene	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Chrysene	420	U	420	26	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Bis(2-ethylhexyl) phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Di-n-octyl phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Benzo[b]fluoranthene	420	U	420	48	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Benzo[k]fluoranthene	420	U	420	82	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Benzo[a]pyrene	420	U	420	66	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Indeno[1,2,3-cd]pyrene	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Dibenz(a,h)anthracene	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1
Benzo[g,h,i]perylene	420	U	420	28	ug/Kg	☼	08/23/13 13:40	08/30/13 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*14*	*X*	*46 - 130*	*08/23/13 13:40*	*08/30/13 18:59*	*1*
2-Fluorobiphenyl	*14*	*X*	*58 - 130*	*08/23/13 13:40*	*08/30/13 18:59*	*1*
Terphenyl-d14 (Surr)	*11*	*X*	*60 - 130*	*08/23/13 13:40*	*08/30/13 18:59*	*1*
Phenol-d5 (Surr)	*9*	*X*	*49 - 130*	*08/23/13 13:40*	*08/30/13 18:59*	*1*
2-Fluorophenol (Surr)	*8*	*X*	*40 - 130*	*08/23/13 13:40*	*08/30/13 18:59*	*1*
2,4,6-Tribromophenol (Surr)	*5*	*X*	*58 - 130*	*08/23/13 13:40*	*08/30/13 18:59*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**860**		500	38	ug/Kg	☼	08/22/13 10:07	08/24/13 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*127*		*70 - 131*	*08/22/13 10:07*	*08/24/13 18:17*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**9700**		6300	1800	ug/Kg	☼	08/31/13 08:51	08/31/13 22:46	1
ORO C24-C40	**9700**	**B**	6300	1800	ug/Kg	☼	08/31/13 08:51	08/31/13 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*73*		*50 - 150*	*08/31/13 08:51*	*08/31/13 22:46*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-08 (9.0-10.0)
Date Collected: 08/20/13 09:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-6
Matrix: Solid
Percent Solids: 80.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22		18	5.3	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Benzene	3.6	U	3.6	0.35	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Bromodichloromethane	3.6	U	3.6	0.60	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Bromoform	3.6	U	3.6	0.45	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Bromomethane	3.6	U	3.6	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Carbon disulfide	3.6	U	3.6	0.86	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Carbon tetrachloride	3.6	U	3.6	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Chlorobenzene	3.6	U	3.6	0.37	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Chloroethane	3.6	U	3.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Chloroform	3.6	U	3.6	0.42	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Chloromethane	3.6	U	3.6	0.72	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
cis-1,2-Dichloroethene	3.6	U	3.6	0.55	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
cis-1,3-Dichloropropene	3.6	U	3.6	0.86	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Cyclohexane	3.6	U	3.6	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Dibromochloromethane	3.6	U	3.6	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,2-Dibromo-3-Chloropropane	3.6	U	3.6	2.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,2-Dichlorobenzene	3.6	U	3.6	0.51	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,3-Dichlorobenzene	3.6	U	3.6	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,4-Dichlorobenzene	3.6	U	3.6	0.59	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Dichlorodifluoromethane	3.6	U	3.6	0.94	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,1-Dichloroethane	3.6	U	3.6	0.60	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,2-Dichloroethane	3.6	U	3.6	0.59	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,1-Dichloroethene	3.6	U	3.6	0.54	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,2-Dichloropropane	3.6	U	3.6	0.53	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Diisopropyl ether	3.6	U	3.6	0.40	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Ethylbenzene	3.6	U	3.6	0.44	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Ethylene Dibromide	3.6	U	3.6	0.35	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Ethyl tert-butyl ether	3.6	U	3.6	0.40	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
2-Hexanone	18	U	18	3.6	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Isopropylbenzene	3.6	U	3.6	0.49	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Methyl acetate	3.6	U	3.6	3.3	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Methylcyclohexane	3.6	U	3.6	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Methylene Chloride	11	U	11	7.2	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Methyl Ethyl Ketone	18	U	18	3.0	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
methyl isobutyl ketone	18	U	18	2.9	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Methyl tert-butyl ether	3.6	U	3.6	0.72	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Naphthalene	3.6	U	3.6	0.72	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Styrene	3.6	U	3.6	0.55	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Tert-amyl methyl ether	3.6	U	3.6	0.32	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
tert-Butyl alcohol	3.6	U	3.6	2.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,1,2,2-Tetrachloroethane	3.6	U	3.6	0.52	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Tetrachloroethene	3.6	U	3.6	0.60	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Toluene	3.6	U	3.6	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
trans-1,2-Dichloroethene	3.6	U	3.6	0.55	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
trans-1,3-Dichloropropene	3.6	U	3.6	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,2,4-Trichlorobenzene	3.6	U	3.6	0.53	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,1,1-Trichloroethane	3.6	U	3.6	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,1,2-Trichloroethane	3.6	U	3.6	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Trichloroethene	3.6	U	3.6	0.35	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-08 (9.0-10.0)
Date Collected: 08/20/13 09:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-6
Matrix: Solid
Percent Solids: 80.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	3.6	U	3.6	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.6	U	3.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Vinyl chloride	3.6	U	3.6	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1
Xylenes, Total	7.2	U	7.2	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/27/13 19:10*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/23/13 16:13*	*08/27/13 19:10*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/23/13 16:13*	*08/27/13 19:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	410	U	410	72	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Phenol	410	U	410	42	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Bis(2-chloroethyl)ether	410	U	410	56	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2-Chlorophenol	410	U	410	50	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2-Methylphenol	410	U	410	34	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
bis (2-chloroisopropyl) ether	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Acetophenone	410	U	410	35	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
3 & 4 Methylphenol	410	U	410	54	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
N-Nitrosodi-n-propylamine	410	U	410	40	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Hexachloroethane	410	U	410	35	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Nitrobenzene	410	U	410	32	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Isophorone	410	U	410	41	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2-Nitrophenol	410	U	410	51	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2,4-Dimethylphenol	410	U	410	55	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Bis(2-chloroethoxy)methane	410	U	410	49	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2,4-Dichlorophenol	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Naphthalene	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
4-Chloroaniline	820	U *	820	65	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Hexachlorobutadiene	410	U	410	45	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Caprolactam	410	U	410	82	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
4-Chloro-3-methylphenol	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2-Methylnaphthalene	410	U	410	47	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Hexachlorocyclopentadiene	410	U	410	51	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2,4,6-Trichlorophenol	410	U	410	36	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2,4,5-Trichlorophenol	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
1,1'-Biphenyl	920	U	920	920	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2-Chloronaphthalene	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Dimethyl phthalate	410	U	410	42	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2,6-Dinitrotoluene	410	U	410	52	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Acenaphthylene	410	U	410	45	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
3-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Acenaphthene	410	U	410	51	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
4-Nitrophenol	2100	U	2100	410	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Dibenzofuran	410	U	410	41	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
2,4-Dinitrotoluene	410	U	410	61	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Diethyl phthalate	410	U	410	46	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1

Client Sample ID: SB01-08 (9.0-10.0)
Date Collected: 08/20/13 09:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-6
Matrix: Solid
Percent Solids: 80.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	410	U	410	45	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
4-Chlorophenyl phenyl ether	410	U	410	55	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
4-Nitroaniline	2100	U	2100	61	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
N-Nitrosodiphenylamine	410	U	410	41	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
4-Bromophenyl phenyl ether	410	U	410	45	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Hexachlorobenzene	410	U	410	49	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Atrazine	410	U	410	29	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Pentachlorophenol	2100	U	2100	410	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Phenanthrene	410	U	410	34	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Anthracene	410	U	410	31	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Carbazole	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Di-n-butyl phthalate	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Fluoranthene	410	U	410	40	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Pyrene	410	U	410	34	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Butyl benzyl phthalate	410	U	410	32	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
3,3'-Dichlorobenzidine	820	U	820	35	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Benzo[a]anthracene	410	U	410	34	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Chrysene	410	U	410	26	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Bis(2-ethylhexyl) phthalate	410	U	410	36	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Di-n-octyl phthalate	410	U	410	36	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Benzo[b]fluoranthene	410	U	410	47	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Benzo[k]fluoranthene	410	U	410	81	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Benzo[a]pyrene	410	U	410	65	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Indeno[1,2,3-cd]pyrene	410	U	410	35	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Dibenz(a,h)anthracene	410	U	410	49	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1
Benzo[g,h,i]perylene	410	U	410	27	ug/Kg	☼	08/23/13 13:40	08/30/13 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*66*		*46 - 130*	*08/23/13 13:40*	*08/30/13 19:25*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/23/13 13:40*	*08/30/13 19:25*	*1*
Terphenyl-d14 (Surr)	*88*		*60 - 130*	*08/23/13 13:40*	*08/30/13 19:25*	*1*
Phenol-d5 (Surr)	*73*		*49 - 130*	*08/23/13 13:40*	*08/30/13 19:25*	*1*
2-Fluorophenol (Surr)	*75*		*40 - 130*	*08/23/13 13:40*	*08/30/13 19:25*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*58 - 130*	*08/23/13 13:40*	*08/30/13 19:25*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**320**		250	19	ug/Kg	☼	08/22/13 10:07	08/24/13 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*113*		*70 - 131*	*08/22/13 10:07*	*08/24/13 18:37*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1800**	**J**	6100	1700	ug/Kg	☼	08/31/13 08:51	08/31/13 20:55	1
ORO C24-C40	**4800**	**J B**	6100	1700	ug/Kg	☼	08/31/13 08:51	08/31/13 20:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*74*		*50 - 150*	*08/31/13 08:51*	*08/31/13 20:55*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-09 (0.0-1.0)
Date Collected: 08/20/13 09:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-7
Matrix: Solid
Percent Solids: 71.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	27	U	27	7.8	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Benzene	5.4	U	5.4	0.53	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Bromodichloromethane	5.4	U	5.4	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Bromoform	5.4	U	5.4	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Bromomethane	5.4	U	5.4	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Carbon disulfide	5.4	U	5.4	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Carbon tetrachloride	5.4	U	5.4	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Chlorobenzene	5.4	U	5.4	0.56	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Chloroethane	5.4	U	5.4	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Chloroform	5.4	U	5.4	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Chloromethane	5.4	U	5.4	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
cis-1,2-Dichloroethene	5.4	U	5.4	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
cis-1,3-Dichloropropene	5.4	U	5.4	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Cyclohexane	5.4	U	5.4	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Dibromochloromethane	5.4	U	5.4	0.93	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,2-Dibromo-3-Chloropropane	5.4	U	5.4	3.5	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,2-Dichlorobenzene	5.4	U	5.4	0.76	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,3-Dichlorobenzene	5.4	U	5.4	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,4-Dichlorobenzene	5.4	U	5.4	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Dichlorodifluoromethane	5.4	U	5.4	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,1-Dichloroethane	5.4	U	5.4	0.89	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,2-Dichloroethane	5.4	U	5.4	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,1-Dichloroethene	5.4	U	5.4	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,2-Dichloropropane	5.4	U	5.4	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Diisopropyl ether	5.4	U	5.4	0.59	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Ethylbenzene	5.4	U	5.4	0.65	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Ethylene Dibromide	5.4	U	5.4	0.51	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Ethyl tert-butyl ether	5.4	U	5.4	0.60	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
2-Hexanone	27	U	27	5.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Isopropylbenzene	5.4	U	5.4	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Methyl acetate	5.4	U	5.4	4.9	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Methylcyclohexane	5.4	U	5.4	0.93	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Methylene Chloride	16	U	16	11	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Methyl Ethyl Ketone	27	U	27	4.4	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
methyl isobutyl ketone	27	U	27	4.3	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Methyl tert-butyl ether	5.4	U	5.4	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Naphthalene	5.4	U	5.4	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Styrene	5.4	U	5.4	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Tert-amyl methyl ether	5.4	U	5.4	0.47	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
tert-Butyl alcohol	5.4	U	5.4	3.6	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,1,2,2-Tetrachloroethane	5.4	U	5.4	0.77	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Tetrachloroethene	5.4	U	5.4	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Toluene	5.4	U	5.4	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
trans-1,2-Dichloroethene	5.4	U	5.4	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
trans-1,3-Dichloropropene	5.4	U	5.4	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,2,4-Trichlorobenzene	5.4	U	5.4	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,1,1-Trichloroethane	5.4	U	5.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,1,2-Trichloroethane	5.4	U	5.4	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Trichloroethene	5.4	U	5.4	0.51	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-09 (0.0-1.0)
Date Collected: 08/20/13 09:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-7
Matrix: Solid
Percent Solids: 71.4

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.4	U	5.4	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.4	U	5.4	2.1	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Vinyl chloride	5.4	U	5.4	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1
Xylenes, Total	11	U	11	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 19:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/27/13 19:36*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/23/13 16:13*	*08/27/13 19:36*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/23/13 16:13*	*08/27/13 19:36*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	460	U	460	81	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Phenol	460	U	460	47	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Bis(2-chloroethyl)ether	460	U	460	63	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2-Chlorophenol	460	U	460	56	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2-Methylphenol	460	U	460	38	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
bis (2-chloroisopropyl) ether	460	U	460	42	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Acetophenone	460	U	460	39	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
3 & 4 Methylphenol	460	U	460	60	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
N-Nitrosodi-n-propylamine	460	U	460	45	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Hexachloroethane	460	U	460	39	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Nitrobenzene	460	U	460	36	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Isophorone	460	U	460	46	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2-Nitrophenol	460	U	460	57	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2,4-Dimethylphenol	460	U	460	61	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Bis(2-chloroethoxy)methane	460	U	460	54	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2,4-Dichlorophenol	460	U	460	49	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Naphthalene	460	U	460	42	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
4-Chloroaniline	920	U *	920	73	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Hexachlorobutadiene	460	U	460	50	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Caprolactam	460	U	460	92	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
4-Chloro-3-methylphenol	460	U	460	49	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2-Methylnaphthalene	**310**	**J**	460	53	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Hexachlorocyclopentadiene	460	U	460	57	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2,4,6-Trichlorophenol	460	U	460	40	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2,4,5-Trichlorophenol	460	U	460	49	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
1,1'-Biphenyl	1000	U	1000	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2-Chloronaphthalene	460	U	460	49	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2-Nitroaniline	2400	U	2400	63	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Dimethyl phthalate	460	U	460	47	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2,6-Dinitrotoluene	460	U	460	59	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Acenaphthylene	460	U	460	50	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
3-Nitroaniline	2400	U	2400	64	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Acenaphthene	460	U	460	57	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2,4-Dinitrophenol	2400	U	2400	1200	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
4-Nitrophenol	2400	U	2400	460	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Dibenzofuran	**88**	**J**	460	46	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
2,4-Dinitrotoluene	460	U	460	68	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Diethyl phthalate	460	U	460	52	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1

Client Sample ID: SB01-09 (0.0-1.0)
Date Collected: 08/20/13 09:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-7
Matrix: Solid
Percent Solids: 71.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	460	U	460	50	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
4-Chlorophenyl phenyl ether	460	U	460	61	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
4-Nitroaniline	2400	U	2400	68	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
4,6-Dinitro-2-methylphenol	2400	U	2400	240	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
N-Nitrosodiphenylamine	460	U	460	46	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
4-Bromophenyl phenyl ether	460	U	460	50	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Hexachlorobenzene	460	U	460	54	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Atrazine	460	U	460	32	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Pentachlorophenol	2400	U	2400	460	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Phenanthrene	**180**	**J**	460	38	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Anthracene	460	U	460	35	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Carbazole	460	U	460	42	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Di-n-butyl phthalate	460	U	460	42	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Fluoranthene	**110**	**J**	460	45	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Pyrene	**69**	**J**	460	38	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Butyl benzyl phthalate	460	U	460	36	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
3,3'-Dichlorobenzidine	920	U	920	39	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Benzo[a]anthracene	460	U	460	38	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Chrysene	**84**	**J**	460	29	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Bis(2-ethylhexyl) phthalate	460	U	460	40	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Di-n-octyl phthalate	460	U	460	40	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Benzo[b]fluoranthene	**75**	**J**	460	53	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Benzo[k]fluoranthene	460	U	460	91	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Benzo[a]pyrene	460	U	460	73	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Indeno[1,2,3-cd]pyrene	460	U	460	39	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Dibenz(a,h)anthracene	460	U	460	54	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1
Benzo[g,h,i]perylene	**34**	**J B**	460	31	ug/Kg	☼	08/23/13 13:40	08/30/13 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*65*		*46 - 130*	*08/23/13 13:40*	*08/30/13 19:50*	*1*
2-Fluorobiphenyl	*70*		*58 - 130*	*08/23/13 13:40*	*08/30/13 19:50*	*1*
Terphenyl-d14 (Surr)	*68*		*60 - 130*	*08/23/13 13:40*	*08/30/13 19:50*	*1*
Phenol-d5 (Surr)	*57*		*49 - 130*	*08/23/13 13:40*	*08/30/13 19:50*	*1*
2-Fluorophenol (Surr)	*60*		*40 - 130*	*08/23/13 13:40*	*08/30/13 19:50*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*58 - 130*	*08/23/13 13:40*	*08/30/13 19:50*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**260**	**J**	310	24	ug/Kg	☼	08/22/13 10:07	08/28/13 20:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*120*		*70 - 131*	*08/22/13 10:07*	*08/28/13 20:19*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6800	U	6800	1900	ug/Kg	☼	08/28/13 11:44	08/30/13 00:58	1
ORO C24-C40	**4400**	**J B**	6800	1900	ug/Kg	☼	08/28/13 11:44	08/30/13 00:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*74*		*50 - 150*	*08/28/13 11:44*	*08/30/13 00:58*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-09 (4.0-5.0)
Date Collected: 08/20/13 09:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-8
Matrix: Solid
Percent Solids: 84.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	26	U	26	7.7	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Benzene	5.3	U	5.3	0.52	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Bromodichloromethane	5.3	U	5.3	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Bromoform	5.3	U	5.3	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Bromomethane	5.3	U	5.3	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Carbon disulfide	5.3	U	5.3	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Carbon tetrachloride	5.3	U	5.3	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Chlorobenzene	5.3	U	5.3	0.55	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Chloroethane	5.3	U	5.3	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Chloroform	5.3	U	5.3	0.62	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Chloromethane	5.3	U	5.3	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
cis-1,2-Dichloroethene	5.3	U	5.3	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
cis-1,3-Dichloropropene	5.3	U	5.3	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Cyclohexane	5.3	U	5.3	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Dibromochloromethane	5.3	U	5.3	0.91	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,2-Dibromo-3-Chloropropane	5.3	U	5.3	3.5	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,2-Dichlorobenzene	5.3	U	5.3	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,3-Dichlorobenzene	5.3	U	5.3	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,4-Dichlorobenzene	5.3	U	5.3	0.86	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Dichlorodifluoromethane	5.3	U	5.3	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,1-Dichloroethane	5.3	U	5.3	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,2-Dichloroethane	5.3	U	5.3	0.86	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,1-Dichloroethene	5.3	U	5.3	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,2-Dichloropropane	5.3	U	5.3	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Diisopropyl ether	5.3	U	5.3	0.58	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Ethylbenzene	5.3	U	5.3	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Ethylene Dibromide	5.3	U	5.3	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Ethyl tert-butyl ether	5.3	U	5.3	0.59	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
2-Hexanone	26	U	26	5.3	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Isopropylbenzene	5.3	U	5.3	0.71	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Methyl acetate	5.3	U	5.3	4.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Methylcyclohexane	5.3	U	5.3	0.91	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Methylene Chloride	16	U	16	11	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Methyl Ethyl Ketone	26	U	26	4.3	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
methyl isobutyl ketone	26	U	26	4.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Methyl tert-butyl ether	**1.7**	**J**	5.3	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Naphthalene	5.3	U	5.3	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Styrene	5.3	U	5.3	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Tert-amyl methyl ether	5.3	U	5.3	0.46	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
tert-Butyl alcohol	5.3	U	5.3	3.6	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,1,2,2-Tetrachloroethane	5.3	U	5.3	0.76	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Tetrachloroethene	5.3	U	5.3	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Toluene	5.3	U	5.3	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
trans-1,2-Dichloroethene	5.3	U	5.3	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
trans-1,3-Dichloropropene	5.3	U	5.3	0.97	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,2,4-Trichlorobenzene	5.3	U	5.3	0.77	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,1,1-Trichloroethane	5.3	U	5.3	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,1,2-Trichloroethane	5.3	U	5.3	0.97	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Trichloroethene	5.3	U	5.3	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-09 (4.0-5.0)
Date Collected: 08/20/13 09:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-8
Matrix: Solid
Percent Solids: 84.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.3	U	5.3	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.3	U	5.3	2.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Vinyl chloride	5.3	U	5.3	0.97	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1
Xylenes, Total	11	U	11	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 122*	*08/23/13 16:13*	*08/27/13 20:01*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/23/13 16:13*	*08/27/13 20:01*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/23/13 16:13*	*08/27/13 20:01*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	390	U	390	68	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Phenol	390	U	390	40	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Bis(2-chloroethyl)ether	390	U	390	53	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2-Chlorophenol	390	U	390	47	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2-Methylphenol	390	U	390	32	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
bis (2-chloroisopropyl) ether	390	U	390	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Acetophenone	390	U	390	33	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
3 & 4 Methylphenol	390	U	390	51	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
N-Nitrosodi-n-propylamine	390	U	390	38	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Hexachloroethane	390	U	390	33	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Nitrobenzene	390	U	390	31	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Isophorone	390	U	390	39	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2-Nitrophenol	390	U	390	48	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2,4-Dimethylphenol	390	U	390	52	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Bis(2-chloroethoxy)methane	390	U	390	46	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2,4-Dichlorophenol	390	U	390	41	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Naphthalene	390	U	390	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
4-Chloroaniline	780	U *	780	61	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Hexachlorobutadiene	390	U	390	42	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Caprolactam	390	U	390	78	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
4-Chloro-3-methylphenol	390	U	390	41	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2-Methylnaphthalene	390	U	390	45	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Hexachlorocyclopentadiene	390	U	390	48	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2,4,6-Trichlorophenol	390	U	390	34	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2,4,5-Trichlorophenol	390	U	390	41	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
1,1'-Biphenyl	870	U	870	870	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2-Chloronaphthalene	390	U	390	41	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2-Nitroaniline	2000	U	2000	53	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Dimethyl phthalate	390	U	390	40	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2,6-Dinitrotoluene	390	U	390	49	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Acenaphthylene	390	U	390	42	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
3-Nitroaniline	2000	U	2000	54	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Acenaphthene	390	U	390	48	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2,4-Dinitrophenol	2000	U	2000	980	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
4-Nitrophenol	2000	U	2000	390	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Dibenzofuran	390	U	390	39	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
2,4-Dinitrotoluene	390	U	390	58	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Diethyl phthalate	390	U	390	44	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-09 (4.0-5.0)
Date Collected: 08/20/13 09:40
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-8
Matrix: Solid
Percent Solids: 84.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	390	U	390	42	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
4-Chlorophenyl phenyl ether	390	U	390	52	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
4-Nitroaniline	2000	U	2000	58	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
N-Nitrosodiphenylamine	390	U	390	39	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
4-Bromophenyl phenyl ether	390	U	390	42	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Hexachlorobenzene	390	U	390	46	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Atrazine	390	U	390	27	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Pentachlorophenol	2000	U	2000	390	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Phenanthrene	390	U	390	32	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Anthracene	390	U	390	29	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Carbazole	390	U	390	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Di-n-butyl phthalate	390	U	390	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Fluoranthene	390	U	390	38	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Pyrene	390	U	390	32	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Butyl benzyl phthalate	390	U	390	31	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
3,3'-Dichlorobenzidine	780	U	780	33	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Benzo[a]anthracene	390	U	390	32	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Chrysene	390	U	390	25	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Bis(2-ethylhexyl) phthalate	390	U	390	34	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Di-n-octyl phthalate	390	U	390	34	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Benzo[b]fluoranthene	390	U	390	45	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Benzo[k]fluoranthene	390	U	390	76	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Benzo[a]pyrene	390	U	390	61	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Indeno[1,2,3-cd]pyrene	390	U	390	33	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Dibenz(a,h)anthracene	390	U	390	46	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1
Benzo[g,h,i]perylene	390	U	390	26	ug/Kg	☼	08/23/13 13:40	08/30/13 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*71*		*46 - 130*	*08/23/13 13:40*	*08/30/13 20:16*	*1*
2-Fluorobiphenyl	*81*		*58 - 130*	*08/23/13 13:40*	*08/30/13 20:16*	*1*
Terphenyl-d14 (Surr)	*92*		*60 - 130*	*08/23/13 13:40*	*08/30/13 20:16*	*1*
Phenol-d5 (Surr)	*75*		*49 - 130*	*08/23/13 13:40*	*08/30/13 20:16*	*1*
2-Fluorophenol (Surr)	*80*		*40 - 130*	*08/23/13 13:40*	*08/30/13 20:16*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*58 - 130*	*08/23/13 13:40*	*08/30/13 20:16*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	220	U	220	17	ug/Kg	☼	08/22/13 10:07	08/24/13 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*88*		*70 - 131*	*08/22/13 10:07*	*08/24/13 19:17*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5900	U	5900	1600	ug/Kg	☼	08/28/13 11:44	08/30/13 01:14	1
ORO C24-C40	**3500**	**J B**	5900	1600	ug/Kg	☼	08/28/13 11:44	08/30/13 01:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*87*		*50 - 150*	*08/28/13 11:44*	*08/30/13 01:14*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-10 (0.0-1.0)
Date Collected: 08/20/13 10:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-9
Matrix: Solid
Percent Solids: 77.1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	26	U	26	7.6	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Benzene	5.2	U	5.2	0.51	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Bromodichloromethane	5.2	U	5.2	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Bromoform	5.2	U	5.2	0.65	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Bromomethane	5.2	U	5.2	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Carbon disulfide	5.2	U	5.2	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Carbon tetrachloride	5.2	U	5.2	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Chlorobenzene	5.2	U	5.2	0.54	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Chloroethane	5.2	U	5.2	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Chloroform	5.2	U	5.2	0.61	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Chloromethane	5.2	U	5.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
cis-1,2-Dichloroethene	5.2	U	5.2	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
cis-1,3-Dichloropropene	5.2	U	5.2	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Cyclohexane	5.2	U	5.2	0.97	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Dibromochloromethane	5.2	U	5.2	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,2-Dibromo-3-Chloropropane	5.2	U	5.2	3.4	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,2-Dichlorobenzene	5.2	U	5.2	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,3-Dichlorobenzene	5.2	U	5.2	0.98	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,4-Dichlorobenzene	5.2	U	5.2	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Dichlorodifluoromethane	5.2	U	5.2	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,1-Dichloroethane	5.2	U	5.2	0.86	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,2-Dichloroethane	5.2	U	5.2	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,1-Dichloroethene	5.2	U	5.2	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,2-Dichloropropane	5.2	U	5.2	0.77	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Diisopropyl ether	5.2	U	5.2	0.57	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Ethylbenzene	5.2	U	5.2	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Ethylene Dibromide	5.2	U	5.2	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Ethyl tert-butyl ether	5.2	U	5.2	0.58	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
2-Hexanone	26	U	26	5.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Isopropylbenzene	5.2	U	5.2	0.70	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Methyl acetate	5.2	U	5.2	4.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Methylcyclohexane	5.2	U	5.2	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Methylene Chloride	16	U	16	10	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Methyl Ethyl Ketone	26	U	26	4.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
methyl isobutyl ketone	26	U	26	4.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Methyl tert-butyl ether	5.2	U	5.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Naphthalene	5.2	U	5.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Styrene	5.2	U	5.2	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Tert-amyl methyl ether	5.2	U	5.2	0.46	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
tert-Butyl alcohol	5.2	U	5.2	3.5	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,1,2,2-Tetrachloroethane	5.2	U	5.2	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Tetrachloroethene	5.2	U	5.2	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Toluene	5.2	U	5.2	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
trans-1,2-Dichloroethene	5.2	U	5.2	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
trans-1,3-Dichloropropene	5.2	U	5.2	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,2,4-Trichlorobenzene	5.2	U	5.2	0.76	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,1,1-Trichloroethane	5.2	U	5.2	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,1,2-Trichloroethane	5.2	U	5.2	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Trichloroethene	5.2	U	5.2	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-10 (0.0-1.0)
Date Collected: 08/20/13 10:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-9
Matrix: Solid
Percent Solids: 77.1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.2	U	5.2	0.98	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.2	U	5.2	2.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Vinyl chloride	5.2	U	5.2	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1
Xylenes, Total	10	U	10	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 122*	*08/23/13 16:13*	*08/27/13 20:27*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/23/13 16:13*	*08/27/13 20:27*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/23/13 16:13*	*08/27/13 20:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	420	U	420	74	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Phenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Bis(2-chloroethyl)ether	420	U	420	58	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2-Chlorophenol	420	U	420	51	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2-Methylphenol	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
bis (2-chloroisopropyl) ether	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Acetophenone	420	U	420	36	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
3 & 4 Methylphenol	420	U	420	55	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
N-Nitrosodi-n-propylamine	420	U	420	41	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Hexachloroethane	420	U	420	36	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Nitrobenzene	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Isophorone	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2-Nitrophenol	420	U	420	53	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2,4-Dimethylphenol	420	U	420	56	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Bis(2-chloroethoxy)methane	420	U	420	50	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2,4-Dichlorophenol	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Naphthalene	**38**	**J**	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
4-Chloroaniline	850	U *	850	67	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Hexachlorobutadiene	420	U	420	46	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Caprolactam	420	U	420	85	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
4-Chloro-3-methylphenol	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2-Methylnaphthalene	**54**	**J**	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Hexachlorocyclopentadiene	420	U	420	53	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2,4,6-Trichlorophenol	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2,4,5-Trichlorophenol	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
1,1'-Biphenyl	950	U	950	950	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2-Chloronaphthalene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2-Nitroaniline	2200	U	2200	58	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Dimethyl phthalate	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2,6-Dinitrotoluene	420	U	420	54	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Acenaphthylene	420	U	420	46	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
3-Nitroaniline	2200	U	2200	59	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Acenaphthene	420	U	420	53	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
4-Nitrophenol	2200	U	2200	420	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Dibenzofuran	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
2,4-Dinitrotoluene	420	U	420	63	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Diethyl phthalate	420	U	420	47	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1

Client Sample ID: SB01-10 (0.0-1.0)
Date Collected: 08/20/13 10:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-9
Matrix: Solid
Percent Solids: 77.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	420	U	420	46	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
4-Chlorophenyl phenyl ether	420	U	420	56	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
4-Nitroaniline	2200	U	2200	63	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
N-Nitrosodiphenylamine	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
4-Bromophenyl phenyl ether	420	U	420	46	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Hexachlorobenzene	420	U	420	50	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Atrazine	420	U	420	29	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Pentachlorophenol	2200	U	2200	420	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Phenanthrene	**50**	**J**	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Anthracene	420	U	420	32	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Carbazole	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Di-n-butyl phthalate	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Fluoranthene	**49**	**J**	420	41	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Pyrene	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Butyl benzyl phthalate	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
3,3'-Dichlorobenzidine	850	U	850	36	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Benzo[a]anthracene	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Chrysene	**40**	**J**	420	27	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Bis(2-ethylhexyl) phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Di-n-octyl phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Benzo[b]fluoranthene	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Benzo[k]fluoranthene	420	U	420	83	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Benzo[a]pyrene	420	U	420	67	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Indeno[1,2,3-cd]pyrene	420	U	420	36	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Dibenz(a,h)anthracene	420	U	420	50	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1
Benzo[g,h,i]perylene	420	U	420	28	ug/Kg	☼	08/23/13 13:40	08/30/13 20:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*76*		*46 - 130*	*08/23/13 13:40*	*08/30/13 20:41*	*1*
2-Fluorobiphenyl	*81*		*58 - 130*	*08/23/13 13:40*	*08/30/13 20:41*	*1*
Terphenyl-d14 (Surr)	*81*		*60 - 130*	*08/23/13 13:40*	*08/30/13 20:41*	*1*
Phenol-d5 (Surr)	*70*		*49 - 130*	*08/23/13 13:40*	*08/30/13 20:41*	*1*
2-Fluorophenol (Surr)	*69*		*40 - 130*	*08/23/13 13:40*	*08/30/13 20:41*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*58 - 130*	*08/23/13 13:40*	*08/30/13 20:41*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**310**	**J**	350	26	ug/Kg	☼	08/22/13 10:07	08/28/13 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*131*		*70 - 131*	*08/22/13 10:07*	*08/28/13 20:39*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6300	U	6300	1800	ug/Kg	☼	08/28/13 11:44	08/30/13 01:30	1
ORO C24-C40	**3400**	**J B**	6300	1800	ug/Kg	☼	08/28/13 11:44	08/30/13 01:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*69*		*50 - 150*	*08/28/13 11:44*	*08/30/13 01:30*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB01-10 (4.0-5.0)
Date Collected: 08/20/13 10:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-10
Matrix: Solid
Percent Solids: 72.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	24	U	24	7.0	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Benzene	4.8	U	4.8	0.47	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Bromodichloromethane	4.8	U	4.8	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Bromoform	4.8	U	4.8	0.60	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Bromomethane	4.8	U	4.8	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Carbon disulfide	4.8	U	4.8	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Carbon tetrachloride	4.8	U	4.8	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Chlorobenzene	4.8	U	4.8	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Chloroethane	4.8	U	4.8	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Chloroform	4.8	U	4.8	0.57	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Chloromethane	4.8	U	4.8	0.96	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
cis-1,2-Dichloroethene	4.8	U	4.8	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
cis-1,3-Dichloropropene	4.8	U	4.8	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Cyclohexane	4.8	U	4.8	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Dibromochloromethane	4.8	U	4.8	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,2-Dibromo-3-Chloropropane	4.8	U	4.8	3.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,2-Dichlorobenzene	4.8	U	4.8	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,3-Dichlorobenzene	4.8	U	4.8	0.91	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,4-Dichlorobenzene	4.8	U	4.8	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Dichlorodifluoromethane	4.8	U	4.8	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,1-Dichloroethane	4.8	U	4.8	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,2-Dichloroethane	4.8	U	4.8	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,1-Dichloroethene	4.8	U	4.8	0.72	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,2-Dichloropropane	4.8	U	4.8	0.71	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Diisopropyl ether	4.8	U	4.8	0.53	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Ethylbenzene	4.8	U	4.8	0.58	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Ethylene Dibromide	4.8	U	4.8	0.46	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Ethyl tert-butyl ether	4.8	U	4.8	0.54	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
2-Hexanone	24	U	24	4.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Isopropylbenzene	4.8	U	4.8	0.65	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Methyl acetate	4.8	U	4.8	4.4	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Methylcyclohexane	4.8	U	4.8	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Methylene Chloride	14	U	14	9.6	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Methyl Ethyl Ketone	24	U	24	3.9	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
methyl isobutyl ketone	24	U	24	3.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Methyl tert-butyl ether	4.8	U	4.8	0.96	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Naphthalene	4.8	U	4.8	0.96	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Styrene	4.8	U	4.8	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Tert-amyl methyl ether	4.8	U	4.8	0.42	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
tert-Butyl alcohol	4.8	U	4.8	3.3	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,1,2,2-Tetrachloroethane	4.8	U	4.8	0.69	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Tetrachloroethene	4.8	U	4.8	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Toluene	4.8	U	4.8	0.67	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
trans-1,2-Dichloroethene	4.8	U	4.8	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
trans-1,3-Dichloropropene	4.8	U	4.8	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,2,4-Trichlorobenzene	4.8	U	4.8	0.70	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,1,1-Trichloroethane	4.8	U	4.8	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,1,2-Trichloroethane	4.8	U	4.8	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Trichloroethene	4.8	U	4.8	0.46	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1

Client Sample ID: SB01-10 (4.0-5.0)
Date Collected: 08/20/13 10:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-10
Matrix: Solid
Percent Solids: 72.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.8	U	4.8	0.91	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.8	U	4.8	1.9	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Vinyl chloride	4.8	U	4.8	0.88	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1
Xylenes, Total	9.6	U	9.6	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 20:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/27/13 20:53*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/23/13 16:13*	*08/27/13 20:53*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/23/13 16:13*	*08/27/13 20:53*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	450	U	450	79	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Phenol	450	U	450	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Bis(2-chloroethyl)ether	450	U	450	61	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2-Chlorophenol	450	U	450	55	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2-Methylphenol	450	U	450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
bis (2-chloroisopropyl) ether	450	U	450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Acetophenone	450	U	450	38	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
3 & 4 Methylphenol	450	U	450	59	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
N-Nitrosodi-n-propylamine	450	U	450	44	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Hexachloroethane	450	U	450	38	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Nitrobenzene	450	U	450	35	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Isophorone	450	U	450	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2-Nitrophenol	450	U	450	56	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2,4-Dimethylphenol	450	U	450	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Bis(2-chloroethoxy)methane	450	U	450	53	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2,4-Dichlorophenol	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Naphthalene	450	U	450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
4-Chloroaniline	900	U *	900	71	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Hexachlorobutadiene	450	U	450	49	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Caprolactam	450	U	450	90	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
4-Chloro-3-methylphenol	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2-Methylnaphthalene	450	U	450	52	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Hexachlorocyclopentadiene	450	U	450	56	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2,4,6-Trichlorophenol	450	U	450	40	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2,4,5-Trichlorophenol	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
1,1'-Biphenyl	1000	U	1000	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2-Chloronaphthalene	450	U	450	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2-Nitroaniline	2300	U	2300	61	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Dimethyl phthalate	450	U	450	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2,6-Dinitrotoluene	450	U	450	57	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Acenaphthylene	450	U	450	49	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
3-Nitroaniline	2300	U	2300	63	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Acenaphthene	450	U	450	56	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2,4-Dinitrophenol	2300	U	2300	1100	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
4-Nitrophenol	2300	U	2300	450	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Dibenzofuran	450	U	450	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
2,4-Dinitrotoluene	450	U	450	67	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Diethyl phthalate	450	U	450	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1

Client Sample ID: SB01-10 (4.0-5.0)
Date Collected: 08/20/13 10:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-10
Matrix: Solid
Percent Solids: 72.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	450	U	450	49	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
4-Chlorophenyl phenyl ether	450	U	450	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
4-Nitroaniline	2300	U	2300	67	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
4,6-Dinitro-2-methylphenol	2300	U	2300	230	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
N-Nitrosodiphenylamine	450	U	450	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
4-Bromophenyl phenyl ether	450	U	450	49	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Hexachlorobenzene	450	U	450	53	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Atrazine	450	U	450	31	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Pentachlorophenol	2300	U	2300	450	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Phenanthrene	450	U	450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Anthracene	450	U	450	34	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Carbazole	450	U	450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Di-n-butyl phthalate	450	U	450	41	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Fluoranthene	450	U	450	44	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Pyrene	450	U	450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Butyl benzyl phthalate	450	U	450	35	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
3,3'-Dichlorobenzidine	900	U	900	38	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Benzo[a]anthracene	450	U	450	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Chrysene	450	U	450	29	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Bis(2-ethylhexyl) phthalate	450	U	450	40	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Di-n-octyl phthalate	450	U	450	40	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Benzo[b]fluoranthene	450	U	450	52	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Benzo[k]fluoranthene	450	U	450	89	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Benzo[a]pyrene	450	U	450	71	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Indeno[1,2,3-cd]pyrene	450	U	450	38	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Dibenz(a,h)anthracene	450	U	450	53	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1
Benzo[g,h,i]perylene	450	U	450	30	ug/Kg	☼	08/23/13 13:40	08/30/13 21:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*74*		*46 - 130*	*08/23/13 13:40*	*08/30/13 21:06*	*1*
2-Fluorobiphenyl	*79*		*58 - 130*	*08/23/13 13:40*	*08/30/13 21:06*	*1*
Terphenyl-d14 (Surr)	*85*		*60 - 130*	*08/23/13 13:40*	*08/30/13 21:06*	*1*
Phenol-d5 (Surr)	*74*		*49 - 130*	*08/23/13 13:40*	*08/30/13 21:06*	*1*
2-Fluorophenol (Surr)	*77*		*40 - 130*	*08/23/13 13:40*	*08/30/13 21:06*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*58 - 130*	*08/23/13 13:40*	*08/30/13 21:06*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	270	U	270	20	ug/Kg	☼	08/22/13 10:07	08/24/13 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*97*		*70 - 131*	*08/22/13 10:07*	*08/24/13 19:56*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6800	U	6800	1900	ug/Kg	☼	08/28/13 11:44	08/30/13 01:45	1
ORO C24-C40	**2300**	**J B**	6800	1900	ug/Kg	☼	08/28/13 11:44	08/30/13 01:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*96*		*50 - 150*	*08/28/13 11:44*	*08/30/13 01:45*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-01 (0.0-1.0)
Date Collected: 08/20/13 11:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-11
Matrix: Solid
Percent Solids: 59.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	38	U	38	11	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Benzene	7.6	U	7.6	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Bromodichloromethane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Bromoform	7.6	U	7.6	0.96	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Bromomethane	7.6	U	7.6	2.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Carbon disulfide	7.6	U	7.6	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Carbon tetrachloride	7.6	U	7.6	2.6	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Chlorobenzene	7.6	U	7.6	0.79	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Chloroethane	7.6	U	7.6	2.9	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Chloroform	7.6	U	7.6	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Chloromethane	7.6	U	7.6	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
cis-1,2-Dichloroethene	7.6	U	7.6	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
cis-1,3-Dichloropropene	7.6	U	7.6	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Cyclohexane	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Dibromochloromethane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,2-Dibromo-3-Chloropropane	7.6	U	7.6	5.0	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,2-Dichlorobenzene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,3-Dichlorobenzene	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,4-Dichlorobenzene	7.6	U	7.6	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Dichlorodifluoromethane	7.6	U	7.6	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,1-Dichloroethane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,2-Dichloroethane	7.6	U	7.6	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,1-Dichloroethene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,2-Dichloropropane	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Diisopropyl ether	7.6	U	7.6	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Ethylbenzene	7.6	U	7.6	0.93	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Ethylene Dibromide	7.6	U	7.6	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Ethyl tert-butyl ether	7.6	U	7.6	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
2-Hexanone	38	U	38	7.6	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Isopropylbenzene	7.6	U	7.6	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Methyl acetate	7.6	U	7.6	7.0	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Methylcyclohexane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Methylene Chloride	23	U	23	15	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Methyl Ethyl Ketone	38	U	38	6.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
methyl isobutyl ketone	38	U	38	6.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Methyl tert-butyl ether	7.6	U	7.6	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Naphthalene	7.6	U	7.6	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Styrene	7.6	U	7.6	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Tert-amyl methyl ether	7.6	U	7.6	0.67	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
tert-Butyl alcohol	7.6	U	7.6	5.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,1,2,2-Tetrachloroethane	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Tetrachloroethene	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Toluene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
trans-1,2-Dichloroethene	7.6	U	7.6	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
trans-1,3-Dichloropropene	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,2,4-Trichlorobenzene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,1,1-Trichloroethane	7.6	U	7.6	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,1,2-Trichloroethane	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Trichloroethene	7.6	U	7.6	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1

Client Sample ID: SB02-01 (0.0-1.0)
Date Collected: 08/20/13 11:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-11
Matrix: Solid
Percent Solids: 59.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	7.6	U	7.6	3.0	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Vinyl chloride	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1
Xylenes, Total	15	U	15	2.9	ug/Kg	☼	08/23/13 16:13	08/27/13 21:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/23/13 16:13*	*08/27/13 21:18*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/23/13 16:13*	*08/27/13 21:18*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/27/13 21:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	550	U	550	96	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Phenol	550	U	550	56	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Bis(2-chloroethyl)ether	550	U	550	74	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2-Chlorophenol	550	U	550	66	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2-Methylphenol	550	U	550	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
bis (2-chloroisopropyl) ether	550	U	550	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Acetophenone	550	U	550	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
3 & 4 Methylphenol	550	U	550	71	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
N-Nitrosodi-n-propylamine	550	U	550	53	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Hexachloroethane	550	U	550	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Nitrobenzene	550	U	550	43	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Isophorone	550	U	550	55	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2-Nitrophenol	550	U	550	68	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2,4-Dimethylphenol	550	U	550	73	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Bis(2-chloroethoxy)methane	550	U	550	65	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2,4-Dichlorophenol	550	U	550	58	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Naphthalene	550	U	550	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
4-Chloroaniline	1100	U *	1100	86	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Hexachlorobutadiene	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Caprolactam	550	U	550	110	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
4-Chloro-3-methylphenol	550	U	550	58	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2-Methylnaphthalene	**78**	**J**	550	63	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Hexachlorocyclopentadiene	550	U	550	68	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2,4,6-Trichlorophenol	550	U	550	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2,4,5-Trichlorophenol	550	U	550	58	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
1,1'-Biphenyl	1200	U	1200	1200	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2-Chloronaphthalene	550	U	550	58	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2-Nitroaniline	2800	U	2800	74	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Dimethyl phthalate	550	U	550	56	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2,6-Dinitrotoluene	550	U	550	69	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Acenaphthylene	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
3-Nitroaniline	2800	U	2800	76	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Acenaphthene	550	U	550	68	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2,4-Dinitrophenol	2800	U	2800	1400	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
4-Nitrophenol	2800	U	2800	550	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Dibenzofuran	550	U	550	55	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
2,4-Dinitrotoluene	550	U	550	81	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Diethyl phthalate	550	U	550	61	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1

Client Sample ID: SB02-01 (0.0-1.0)
Date Collected: 08/20/13 11:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-11
Matrix: Solid
Percent Solids: 59.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
4-Chlorophenyl phenyl ether	550	U	550	73	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
4-Nitroaniline	2800	U	2800	81	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
4,6-Dinitro-2-methylphenol	2800	U	2800	280	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
N-Nitrosodiphenylamine	550	U	550	55	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
4-Bromophenyl phenyl ether	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Hexachlorobenzene	550	U	550	65	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Atrazine	550	U	550	38	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Pentachlorophenol	2800	U	2800	550	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Phenanthrene	**79**	**J**	550	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Anthracene	550	U	550	41	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Carbazole	550	U	550	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Di-n-butyl phthalate	550	U	550	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Fluoranthene	550	U	550	53	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Pyrene	550	U	550	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Butyl benzyl phthalate	550	U	550	43	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
3,3'-Dichlorobenzidine	1100	U	1100	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Benzo[a]anthracene	550	U	550	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Chrysene	**37**	**J**	550	35	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Bis(2-ethylhexyl) phthalate	550	U	550	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Di-n-octyl phthalate	550	U	550	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Benzo[b]fluoranthene	550	U	550	63	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Benzo[k]fluoranthene	550	U	550	110	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Benzo[a]pyrene	550	U	550	86	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Indeno[1,2,3-cd]pyrene	550	U	550	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Dibenz(a,h)anthracene	550	U	550	65	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1
Benzo[g,h,i]perylene	550	U	550	36	ug/Kg	☼	08/23/13 13:40	08/30/13 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*64*		*46 - 130*	*08/23/13 13:40*	*08/30/13 21:32*	*1*
2-Fluorobiphenyl	*69*		*58 - 130*	*08/23/13 13:40*	*08/30/13 21:32*	*1*
Terphenyl-d14 (Surr)	*67*		*60 - 130*	*08/23/13 13:40*	*08/30/13 21:32*	*1*
Phenol-d5 (Surr)	*64*		*49 - 130*	*08/23/13 13:40*	*08/30/13 21:32*	*1*
2-Fluorophenol (Surr)	*65*		*40 - 130*	*08/23/13 13:40*	*08/30/13 21:32*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*58 - 130*	*08/23/13 13:40*	*08/30/13 21:32*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**3400**		430	33	ug/Kg	☼	08/22/13 10:07	08/24/13 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*216*	*X*	*70 - 131*	*08/22/13 10:07*	*08/24/13 20:16*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	8100	U	8100	2300	ug/Kg	☼	08/28/13 11:44	08/30/13 02:01	1
ORO C24-C40	**2800**	**J B**	8100	2300	ug/Kg	☼	08/28/13 11:44	08/30/13 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*72*		*50 - 150*	*08/28/13 11:44*	*08/30/13 02:01*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-01 (7.0-8.0)
Date Collected: 08/20/13 11:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-12
Matrix: Solid
Percent Solids: 81.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	21	U	21	6.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Benzene	4.2	U	4.2	0.42	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Bromodichloromethane	4.2	U	4.2	0.71	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Bromoform	4.2	U	4.2	0.53	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Bromomethane	4.2	U	4.2	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Carbon disulfide	4.2	U	4.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Carbon tetrachloride	4.2	U	4.2	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Chlorobenzene	4.2	U	4.2	0.44	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Chloroethane	4.2	U	4.2	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Chloroform	4.2	U	4.2	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Chloromethane	4.2	U	4.2	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
cis-1,2-Dichloroethene	4.2	U	4.2	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
cis-1,3-Dichloropropene	4.2	U	4.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Cyclohexane	4.2	U	4.2	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Dibromochloromethane	4.2	U	4.2	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,2-Dibromo-3-Chloropropane	4.2	U	4.2	2.8	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,2-Dichlorobenzene	4.2	U	4.2	0.60	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,3-Dichlorobenzene	4.2	U	4.2	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,4-Dichlorobenzene	4.2	U	4.2	0.69	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Dichlorodifluoromethane	4.2	U	4.2	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,1-Dichloroethane	4.2	U	4.2	0.70	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,2-Dichloroethane	4.2	U	4.2	0.69	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,1-Dichloroethene	4.2	U	4.2	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,2-Dichloropropane	4.2	U	4.2	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Diisopropyl ether	4.2	U	4.2	0.47	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Ethylbenzene	4.2	U	4.2	0.52	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Ethylene Dibromide	4.2	U	4.2	0.41	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Ethyl tert-butyl ether	4.2	U	4.2	0.47	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
2-Hexanone	21	U	21	4.2	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Isopropylbenzene	4.2	U	4.2	0.58	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Methyl acetate	4.2	U	4.2	3.9	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Methylcyclohexane	4.2	U	4.2	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Methylene Chloride	13	U	13	8.5	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Methyl Ethyl Ketone	21	U	21	3.5	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
methyl isobutyl ketone	21	U	21	3.4	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Methyl tert-butyl ether	4.2	U	4.2	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Naphthalene	4.2	U	4.2	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Styrene	4.2	U	4.2	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Tert-amyl methyl ether	4.2	U	4.2	0.37	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
tert-Butyl alcohol	4.2	U	4.2	2.9	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,1,2,2-Tetrachloroethane	4.2	U	4.2	0.61	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Tetrachloroethene	4.2	U	4.2	0.71	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Toluene	4.2	U	4.2	0.59	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
trans-1,2-Dichloroethene	4.2	U	4.2	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
trans-1,3-Dichloropropene	4.2	U	4.2	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,2,4-Trichlorobenzene	4.2	U	4.2	0.62	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,1,1-Trichloroethane	4.2	U	4.2	0.93	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,1,2-Trichloroethane	4.2	U	4.2	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Trichloroethene	4.2	U	4.2	0.41	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-01 (7.0-8.0)
Date Collected: 08/20/13 11:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-12
Matrix: Solid
Percent Solids: 81.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.2	U	4.2	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.2	U	4.2	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Vinyl chloride	4.2	U	4.2	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1
Xylenes, Total	8.5	U	8.5	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 21:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*72 - 122*	*08/23/13 16:13*	*08/27/13 21:44*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/23/13 16:13*	*08/27/13 21:44*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/27/13 21:44*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	71	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Phenol	400	U	400	41	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
bis (2-chloroisopropyl) ether	400	U	400	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Isophorone	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2,4-Dimethylphenol	400	U	400	54	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Bis(2-chloroethoxy)methane	400	U	400	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Naphthalene	400	U	400	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
4-Chloroaniline	810	U *	810	63	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Caprolactam	400	U	400	81	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
1,1'-Biphenyl	900	U	900	900	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1

Client Sample ID: SB02-01 (7.0-8.0)
Date Collected: 08/20/13 11:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-12
Matrix: Solid
Percent Solids: 81.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	44	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
4-Chlorophenyl phenyl ether	400	U	400	54	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Hexachlorobenzene	400	U	400	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Atrazine	400	U	400	28	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Anthracene	400	U	400	31	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Carbazole	400	U	400	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Di-n-butyl phthalate	400	U	400	37	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Pyrene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
3,3'-Dichlorobenzidine	810	U	810	34	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Chrysene	400	U	400	26	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Dibenz(a,h)anthracene	400	U	400	48	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/23/13 13:40	08/30/13 21:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*71*		*46 - 130*	*08/23/13 13:40*	*08/30/13 21:57*	*1*
2-Fluorobiphenyl	*80*		*58 - 130*	*08/23/13 13:40*	*08/30/13 21:57*	*1*
Terphenyl-d14 (Surr)	*86*		*60 - 130*	*08/23/13 13:40*	*08/30/13 21:57*	*1*
Phenol-d5 (Surr)	*70*		*49 - 130*	*08/23/13 13:40*	*08/30/13 21:57*	*1*
2-Fluorophenol (Surr)	*72*		*40 - 130*	*08/23/13 13:40*	*08/30/13 21:57*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*58 - 130*	*08/23/13 13:40*	*08/30/13 21:57*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	210	U	210	16	ug/Kg	☼	08/22/13 10:07	08/24/13 20:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*89*		*70 - 131*	*08/22/13 10:07*	*08/24/13 20:36*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6000	U	6000	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 02:17	1
ORO C24-C40	**2700**	**J B**	6000	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 02:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*77*		*50 - 150*	*08/28/13 11:44*	*08/30/13 02:17*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-02 (0.0-1.0)
Date Collected: 08/20/13 11:45
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-13
Matrix: Solid
Percent Solids: 78.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	26	U	26	7.5	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Benzene	5.2	U	5.2	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Bromodichloromethane	5.2	U	5.2	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Bromoform	5.2	U	5.2	0.65	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Bromomethane	5.2	U	5.2	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Carbon disulfide	5.2	U	5.2	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Carbon tetrachloride	5.2	U	5.2	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Chlorobenzene	5.2	U	5.2	0.54	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Chloroethane	5.2	U	5.2	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Chloroform	5.2	U	5.2	0.61	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Chloromethane	5.2	U	5.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
cis-1,2-Dichloroethene	5.2	U	5.2	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
cis-1,3-Dichloropropene	5.2	U	5.2	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Cyclohexane	5.2	U	5.2	0.97	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Dibromochloromethane	5.2	U	5.2	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,2-Dibromo-3-Chloropropane	5.2	U	5.2	3.4	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,2-Dichlorobenzene	5.2	U	5.2	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,3-Dichlorobenzene	5.2	U	5.2	0.98	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,4-Dichlorobenzene	5.2	U	5.2	0.84	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Dichlorodifluoromethane	5.2	U	5.2	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,1-Dichloroethane	5.2	U	5.2	0.86	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,2-Dichloroethane	5.2	U	5.2	0.84	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,1-Dichloroethene	5.2	U	5.2	0.77	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,2-Dichloropropane	5.2	U	5.2	0.76	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Diisopropyl ether	5.2	U	5.2	0.57	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Ethylbenzene	5.2	U	5.2	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Ethylene Dibromide	5.2	U	5.2	0.49	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Ethyl tert-butyl ether	5.2	U	5.2	0.58	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
2-Hexanone	26	U	26	5.2	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Isopropylbenzene	5.2	U	5.2	0.70	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Methyl acetate	5.2	U	5.2	4.7	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Methylcyclohexane	5.2	U	5.2	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Methylene Chloride	15	U	15	10	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Methyl Ethyl Ketone	26	U	26	4.2	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
methyl isobutyl ketone	26	U	26	4.1	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Methyl tert-butyl ether	5.2	U	5.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Naphthalene	5.2	U	5.2	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Styrene	5.2	U	5.2	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Tert-amyl methyl ether	5.2	U	5.2	0.45	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
tert-Butyl alcohol	5.2	U	5.2	3.5	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,1,2,2-Tetrachloroethane	5.2	U	5.2	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Tetrachloroethene	5.2	U	5.2	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Toluene	5.2	U	5.2	0.72	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
trans-1,2-Dichloroethene	5.2	U	5.2	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
trans-1,3-Dichloropropene	5.2	U	5.2	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,2,4-Trichlorobenzene	5.2	U	5.2	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,1,1-Trichloroethane	5.2	U	5.2	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,1,2-Trichloroethane	5.2	U	5.2	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Trichloroethene	5.2	U	5.2	0.49	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-02 (0.0-1.0)
Date Collected: 08/20/13 11:45
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-13
Matrix: Solid
Percent Solids: 78.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.2	U	5.2	0.98	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.2	U	5.2	2.1	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Vinyl chloride	5.2	U	5.2	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1
Xylenes, Total	10	U	10	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 22:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/27/13 22:10*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/23/13 16:13*	*08/27/13 22:10*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/23/13 16:13*	*08/27/13 22:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	420	U	420	73	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Phenol	420	U	420	43	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Bis(2-chloroethyl)ether	420	U	420	57	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2-Chlorophenol	420	U	420	50	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2-Methylphenol	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
bis (2-chloroisopropyl) ether	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Acetophenone	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
3 & 4 Methylphenol	420	U	420	54	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
N-Nitrosodi-n-propylamine	420	U	420	40	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Hexachloroethane	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Nitrobenzene	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Isophorone	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2-Nitrophenol	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2,4-Dimethylphenol	420	U	420	55	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Bis(2-chloroethoxy)methane	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2,4-Dichlorophenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Naphthalene	**110**	**J**	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
4-Chloroaniline	830	U *	830	65	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Hexachlorobutadiene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Caprolactam	420	U	420	83	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
4-Chloro-3-methylphenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2-Methylnaphthalene	**130**	**J**	420	48	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Hexachlorocyclopentadiene	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2,4,6-Trichlorophenol	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2,4,5-Trichlorophenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
1,1'-Biphenyl	930	U	930	930	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2-Chloronaphthalene	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Dimethyl phthalate	420	U	420	43	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2,6-Dinitrotoluene	420	U	420	53	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Acenaphthylene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
3-Nitroaniline	2100	U	2100	58	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Acenaphthene	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
4-Nitrophenol	2100	U	2100	420	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Dibenzofuran	**50**	**J**	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
2,4-Dinitrotoluene	420	U	420	62	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Diethyl phthalate	420	U	420	47	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1

Client Sample ID: SB02-02 (0.0-1.0)
Date Collected: 08/20/13 11:45
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-13
Matrix: Solid
Percent Solids: 78.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
4-Chlorophenyl phenyl ether	420	U	420	55	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
4-Nitroaniline	2100	U	2100	62	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
N-Nitrosodiphenylamine	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
4-Bromophenyl phenyl ether	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Hexachlorobenzene	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Atrazine	420	U	420	29	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Pentachlorophenol	2100	U	2100	420	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Phenanthrene	**110**	**J**	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Anthracene	420	U	420	31	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Carbazole	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Di-n-butyl phthalate	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Fluoranthene	**70**	**J**	420	40	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Pyrene	**51**	**J**	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Butyl benzyl phthalate	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
3,3'-Dichlorobenzidine	830	U	830	35	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Benzo[a]anthracene	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Chrysene	**47**	**J**	420	26	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Bis(2-ethylhexyl) phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Di-n-octyl phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Benzo[b]fluoranthene	**52**	**J**	420	48	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Benzo[k]fluoranthene	420	U	420	82	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Benzo[a]pyrene	420	U	420	65	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Indeno[1,2,3-cd]pyrene	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Dibenz(a,h)anthracene	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1
Benzo[g,h,i]perylene	420	U	420	28	ug/Kg	☼	08/23/13 13:40	08/30/13 22:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*46 - 130*	*08/23/13 13:40*	*08/30/13 22:22*	*1*
2-Fluorobiphenyl	*79*		*58 - 130*	*08/23/13 13:40*	*08/30/13 22:22*	*1*
Terphenyl-d14 (Surr)	*82*		*60 - 130*	*08/23/13 13:40*	*08/30/13 22:22*	*1*
Phenol-d5 (Surr)	*71*		*49 - 130*	*08/23/13 13:40*	*08/30/13 22:22*	*1*
2-Fluorophenol (Surr)	*76*		*40 - 130*	*08/23/13 13:40*	*08/30/13 22:22*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*58 - 130*	*08/23/13 13:40*	*08/30/13 22:22*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**240**	**J**	250	19	ug/Kg	☼	08/22/13 10:07	08/28/13 21:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*117*		*70 - 131*	*08/22/13 10:07*	*08/28/13 21:19*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4100**	**J**	6300	1800	ug/Kg	☼	08/31/13 08:51	08/31/13 23:02	1
ORO C24-C40	**7900**	**B**	6300	1800	ug/Kg	☼	08/31/13 08:51	08/31/13 23:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*82*		*50 - 150*	*08/31/13 08:51*	*08/31/13 23:02*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-02 (4.5-5.5)
Date Collected: 08/20/13 11:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-14
Matrix: Solid
Percent Solids: 81.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	U	22	6.6	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Benzene	4.5	U	4.5	0.44	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Bromodichloromethane	4.5	U	4.5	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Bromoform	4.5	U	4.5	0.57	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Bromomethane	4.5	U	4.5	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Carbon disulfide	4.5	U	4.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Carbon tetrachloride	4.5	U	4.5	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Chlorobenzene	4.5	U	4.5	0.47	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Chloroethane	4.5	U	4.5	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Chloroform	4.5	U	4.5	0.53	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Chloromethane	4.5	U	4.5	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
cis-1,2-Dichloroethene	4.5	U	4.5	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
cis-1,3-Dichloropropene	4.5	U	4.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Cyclohexane	4.5	U	4.5	0.84	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Dibromochloromethane	4.5	U	4.5	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,2-Dibromo-3-Chloropropane	4.5	U	4.5	3.0	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,2-Dichlorobenzene	4.5	U	4.5	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,3-Dichlorobenzene	4.5	U	4.5	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,4-Dichlorobenzene	4.5	U	4.5	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Dichlorodifluoromethane	4.5	U	4.5	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,1-Dichloroethane	4.5	U	4.5	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,2-Dichloroethane	4.5	U	4.5	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,1-Dichloroethene	4.5	U	4.5	0.67	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,2-Dichloropropane	4.5	U	4.5	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Diisopropyl ether	4.5	U	4.5	0.49	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Ethylbenzene	4.5	U	4.5	0.55	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Ethylene Dibromide	4.5	U	4.5	0.43	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Ethyl tert-butyl ether	4.5	U	4.5	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
2-Hexanone	22	U	22	4.5	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Isopropylbenzene	4.5	U	4.5	0.61	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Methyl acetate	4.5	U	4.5	4.1	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Methylcyclohexane	4.5	U	4.5	0.78	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Methylene Chloride	13	U	13	9.0	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Methyl Ethyl Ketone	22	U	22	3.7	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
methyl isobutyl ketone	22	U	22	3.6	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Methyl tert-butyl ether	4.5	U	4.5	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Naphthalene	4.5	U	4.5	0.90	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Styrene	4.5	U	4.5	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Tert-amyl methyl ether	4.5	U	4.5	0.40	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
tert-Butyl alcohol	4.5	U	4.5	3.1	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,1,2,2-Tetrachloroethane	4.5	U	4.5	0.65	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Tetrachloroethene	4.5	U	4.5	0.75	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Toluene	4.5	U	4.5	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
trans-1,2-Dichloroethene	4.5	U	4.5	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
trans-1,3-Dichloropropene	4.5	U	4.5	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,2,4-Trichlorobenzene	4.5	U	4.5	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,1,1-Trichloroethane	4.5	U	4.5	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,1,2-Trichloroethane	4.5	U	4.5	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Trichloroethene	4.5	U	4.5	0.43	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1

Client Sample ID: SB02-02 (4.5-5.5)
Date Collected: 08/20/13 11:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-14
Matrix: Solid
Percent Solids: 81.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.5	U	4.5	0.85	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.5	U	4.5	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Vinyl chloride	4.5	U	4.5	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1
Xylenes, Total	9.0	U	9.0	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/23/13 16:13*	*08/27/13 22:35*	*1*
Dibromofluoromethane	*100*		*79 - 123*	*08/23/13 16:13*	*08/27/13 22:35*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/27/13 22:35*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Phenol	400	U	400	41	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Isophorone	400	U	400	40	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
4-Chloroaniline	800	U *	800	63	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
1,1'-Biphenyl	900	U	900	900	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2,6-Dinitrotoluene	**720**		400	51	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1

Client Sample ID: SB02-02 (4.5-5.5)
Date Collected: 08/20/13 11:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-14
Matrix: Solid
Percent Solids: 81.3

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	44	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Atrazine	400	U	400	28	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Anthracene	400	U	400	30	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Carbazole	400	U	400	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Pyrene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Chrysene	400	U	400	26	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Bis(2-ethylhexyl) phthalate	**45**	**J**	400	35	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/23/13 13:40	09/03/13 15:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*68*		*46 - 130*	*08/23/13 13:40*	*09/03/13 15:38*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/23/13 13:40*	*09/03/13 15:38*	*1*
Terphenyl-d14 (Surr)	*78*		*60 - 130*	*08/23/13 13:40*	*09/03/13 15:38*	*1*
Phenol-d5 (Surr)	*72*		*49 - 130*	*08/23/13 13:40*	*09/03/13 15:38*	*1*
2-Fluorophenol (Surr)	*88*		*40 - 130*	*08/23/13 13:40*	*09/03/13 15:38*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*58 - 130*	*08/23/13 13:40*	*09/03/13 15:38*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	240	U	240	18	ug/Kg	☼	08/22/13 10:07	08/26/13 12:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*92*		*70 - 131*	*08/22/13 10:07*	*08/26/13 12:49*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6000	U	6000	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 02:48	1
ORO C24-C40	**2500**	**J B**	6000	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*69*		*50 - 150*	*08/28/13 11:44*	*08/30/13 02:48*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-03 (0.5-1.5)
Date Collected: 08/20/13 14:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-15
Matrix: Solid
Percent Solids: 79.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	33	U	33	9.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Benzene	6.5	U	6.5	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Bromodichloromethane	6.5	U	6.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Bromoform	6.5	U	6.5	0.82	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Bromomethane	6.5	U	6.5	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Carbon disulfide	6.5	U	6.5	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Carbon tetrachloride	6.5	U	6.5	2.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Chlorobenzene	6.5	U	6.5	0.68	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Chloroethane	6.5	U	6.5	2.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Chloroform	6.5	U	6.5	0.77	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Chloromethane	6.5	U	6.5	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
cis-1,2-Dichloroethene	6.5	U	6.5	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
cis-1,3-Dichloropropene	6.5	U	6.5	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Cyclohexane	6.5	U	6.5	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Dibromochloromethane	6.5	U	6.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,2-Dibromo-3-Chloropropane	6.5	U	6.5	4.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,2-Dichlorobenzene	6.5	U	6.5	0.93	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,3-Dichlorobenzene	6.5	U	6.5	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,4-Dichlorobenzene	6.5	U	6.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Dichlorodifluoromethane	6.5	U	6.5	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,1-Dichloroethane	6.5	U	6.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,2-Dichloroethane	6.5	U	6.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,1-Dichloroethene	6.5	U	6.5	0.98	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,2-Dichloropropane	6.5	U	6.5	0.97	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Diisopropyl ether	6.5	U	6.5	0.72	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Ethylbenzene	6.5	U	6.5	0.80	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Ethylene Dibromide	6.5	U	6.5	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Ethyl tert-butyl ether	6.5	U	6.5	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
2-Hexanone	33	U	33	6.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Isopropylbenzene	6.5	U	6.5	0.89	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Methyl acetate	6.5	U	6.5	6.0	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Methylcyclohexane	6.5	U	6.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Methylene Chloride	20	U	20	13	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Methyl Ethyl Ketone	33	U	33	5.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
methyl isobutyl ketone	33	U	33	5.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Methyl tert-butyl ether	6.5	U	6.5	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Naphthalene	6.5	U	6.5	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Styrene	6.5	U	6.5	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Tert-amyl methyl ether	6.5	U	6.5	0.58	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
tert-Butyl alcohol	6.5	U	6.5	4.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,1,2,2-Tetrachloroethane	6.5	U	6.5	0.94	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Tetrachloroethene	6.5	U	6.5	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Toluene	6.5	U	6.5	0.92	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
trans-1,2-Dichloroethene	6.5	U	6.5	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
trans-1,3-Dichloropropene	6.5	U	6.5	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,2,4-Trichlorobenzene	6.5	U	6.5	0.95	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,1,1-Trichloroethane	6.5	U	6.5	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,1,2-Trichloroethane	6.5	U	6.5	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Trichloroethene	6.5	U	6.5	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1

Client Sample ID: SB02-03 (0.5-1.5)
Date Collected: 08/20/13 14:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-15
Matrix: Solid
Percent Solids: 79.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	3.4	J	6.5	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	6.5	U	6.5	2.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Vinyl chloride	6.5	U	6.5	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1
Xylenes, Total	13	U	13	2.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/23/13 16:13*	*08/27/13 23:01*	*1*
Dibromofluoromethane	*101*		*79 - 123*	*08/23/13 16:13*	*08/27/13 23:01*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/23/13 16:13*	*08/27/13 23:01*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	410	U	410	72	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Phenol	410	U	410	42	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Bis(2-chloroethyl)ether	410	U	410	56	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2-Chlorophenol	410	U	410	49	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2-Methylphenol	410	U	410	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
bis (2-chloroisopropyl) ether	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Acetophenone	410	U	410	35	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
3 & 4 Methylphenol	410	U	410	53	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
N-Nitrosodi-n-propylamine	410	U	410	40	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Hexachloroethane	410	U	410	35	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Nitrobenzene	410	U	410	32	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Isophorone	410	U	410	41	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2-Nitrophenol	410	U	410	51	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2,4-Dimethylphenol	410	U	410	54	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Bis(2-chloroethoxy)methane	410	U	410	48	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2,4-Dichlorophenol	410	U	410	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Naphthalene	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
4-Chloroaniline	820	U *	820	64	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Hexachlorobutadiene	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Caprolactam	410	U	410	82	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
4-Chloro-3-methylphenol	410	U	410	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2-Methylnaphthalene	410	U	410	47	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Hexachlorocyclopentadiene	410	U	410	51	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2,4,6-Trichlorophenol	410	U	410	36	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2,4,5-Trichlorophenol	410	U	410	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
1,1'-Biphenyl	910	U	910	910	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2-Chloronaphthalene	410	U	410	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Dimethyl phthalate	410	U	410	42	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2,6-Dinitrotoluene	410	U	410	52	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Acenaphthylene	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
3-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Acenaphthene	410	U	410	51	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
4-Nitrophenol	2100	U	2100	410	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Dibenzofuran	410	U	410	41	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
2,4-Dinitrotoluene	410	U	410	61	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Diethyl phthalate	410	U	410	46	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1

Client Sample ID: SB02-03 (0.5-1.5)
Date Collected: 08/20/13 14:10
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-15
Matrix: Solid
Percent Solids: 79.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
4-Chlorophenyl phenyl ether	410	U	410	54	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
4-Nitroaniline	2100	U	2100	61	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
N-Nitrosodiphenylamine	410	U	410	41	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
4-Bromophenyl phenyl ether	410	U	410	44	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Hexachlorobenzene	410	U	410	48	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Atrazine	410	U	410	28	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Pentachlorophenol	2100	U	2100	410	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Phenanthrene	410	U	410	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Anthracene	410	U	410	31	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Carbazole	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Di-n-butyl phthalate	410	U	410	37	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Fluoranthene	410	U	410	40	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Pyrene	410	U	410	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Butyl benzyl phthalate	410	U	410	32	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
3,3'-Dichlorobenzidine	820	U	820	35	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Benzo[a]anthracene	410	U	410	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Chrysene	410	U	410	26	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Bis(2-ethylhexyl) phthalate	410	U	410	36	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Di-n-octyl phthalate	410	U	410	36	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Benzo[b]fluoranthene	410	U	410	47	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Benzo[k]fluoranthene	410	U	410	80	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Benzo[a]pyrene	410	U	410	64	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Indeno[1,2,3-cd]pyrene	410	U	410	35	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Dibenz(a,h)anthracene	410	U	410	48	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1
Benzo[g,h,i]perylene	410	U	410	27	ug/Kg	☼	08/23/13 13:40	08/30/13 23:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*79*		*46 - 130*	*08/23/13 13:40*	*08/30/13 23:12*	*1*
2-Fluorobiphenyl	*82*		*58 - 130*	*08/23/13 13:40*	*08/30/13 23:12*	*1*
Terphenyl-d14 (Surr)	*87*		*60 - 130*	*08/23/13 13:40*	*08/30/13 23:12*	*1*
Phenol-d5 (Surr)	*75*		*49 - 130*	*08/23/13 13:40*	*08/30/13 23:12*	*1*
2-Fluorophenol (Surr)	*76*		*40 - 130*	*08/23/13 13:40*	*08/30/13 23:12*	*1*
2,4,6-Tribromophenol (Surr)	*87*		*58 - 130*	*08/23/13 13:40*	*08/30/13 23:12*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**580**		360	27	ug/Kg	☼	08/22/13 11:07	08/26/13 13:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*152*	*X*	*70 - 131*	*08/22/13 11:07*	*08/26/13 13:09*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6100	U	6100	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 03:04	1
ORO C24-C40	**2000**	**J B**	6100	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 03:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*77*		*50 - 150*	*08/28/13 11:44*	*08/30/13 03:04*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-03 (5.0-6.0)
Date Collected: 08/20/13 14:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-16
Matrix: Solid
Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	U	22	6.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Benzene	4.4	U	4.4	0.43	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Bromodichloromethane	4.4	U	4.4	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Bromoform	4.4	U	4.4	0.56	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Bromomethane	4.4	U	4.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Carbon disulfide	4.4	U	4.4	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Carbon tetrachloride	4.4	U	4.4	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Chlorobenzene	4.4	U	4.4	0.46	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Chloroethane	4.4	U	4.4	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Chloroform	4.4	U	4.4	0.52	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Chloromethane	4.4	U	4.4	0.89	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
cis-1,2-Dichloroethene	4.4	U	4.4	0.67	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
cis-1,3-Dichloropropene	4.4	U	4.4	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Cyclohexane	4.4	U	4.4	0.83	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Dibromochloromethane	4.4	U	4.4	0.77	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,2-Dibromo-3-Chloropropane	4.4	U	4.4	2.9	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,2-Dichlorobenzene	4.4	U	4.4	0.63	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,3-Dichlorobenzene	4.4	U	4.4	0.84	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,4-Dichlorobenzene	4.4	U	4.4	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Dichlorodifluoromethane	4.4	U	4.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,1-Dichloroethane	4.4	U	4.4	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,2-Dichloroethane	4.4	U	4.4	0.73	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,1-Dichloroethene	4.4	U	4.4	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,2-Dichloropropane	4.4	U	4.4	0.66	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Diisopropyl ether	4.4	U	4.4	0.49	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Ethylbenzene	4.4	U	4.4	0.54	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Ethylene Dibromide	4.4	U	4.4	0.43	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Ethyl tert-butyl ether	4.4	U	4.4	0.50	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
2-Hexanone	22	U	22	4.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Isopropylbenzene	4.4	U	4.4	0.60	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Methyl acetate	4.4	U	4.4	4.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Methylcyclohexane	4.4	U	4.4	0.77	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Methylene Chloride	13	U	13	8.9	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Methyl Ethyl Ketone	22	U	22	3.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
methyl isobutyl ketone	22	U	22	3.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Methyl tert-butyl ether	4.4	U	4.4	0.89	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Naphthalene	4.4	U	4.4	0.89	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Styrene	4.4	U	4.4	0.67	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Tert-amyl methyl ether	4.4	U	4.4	0.39	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
tert-Butyl alcohol	4.4	U	4.4	3.0	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,1,2,2-Tetrachloroethane	4.4	U	4.4	0.64	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Tetrachloroethene	4.4	U	4.4	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Toluene	4.4	U	4.4	0.62	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
trans-1,2-Dichloroethene	4.4	U	4.4	0.67	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
trans-1,3-Dichloropropene	4.4	U	4.4	0.82	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,2,4-Trichlorobenzene	4.4	U	4.4	0.65	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,1,1-Trichloroethane	4.4	U	4.4	0.98	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,1,2-Trichloroethane	4.4	U	4.4	0.82	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Trichloroethene	4.4	U	4.4	0.43	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1

Client Sample ID: SB02-03 (5.0-6.0)
Date Collected: 08/20/13 14:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-16
Matrix: Solid
Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.4	U	4.4	0.84	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.4	U	4.4	1.8	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Vinyl chloride	4.4	U	4.4	0.82	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1
Xylenes, Total	8.9	U	8.9	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/23/13 16:13*	*08/27/13 23:27*	*1*
Dibromofluoromethane	*101*		*79 - 123*	*08/23/13 16:13*	*08/27/13 23:27*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/23/13 16:13*	*08/27/13 23:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Phenol	400	U	400	41	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Isophorone	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
4-Chloroaniline	800	U *	800	63	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Hexachlorobutadiene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
1,1'-Biphenyl	890	U	890	890	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2-Nitroaniline	2100	U	2100	54	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Acenaphthylene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1

Client Sample ID: SB02-03 (5.0-6.0)
Date Collected: 08/20/13 14:15
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-16
Matrix: Solid
Percent Solids: 81.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
4-Nitroaniline	2100	U	2100	59	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
4-Bromophenyl phenyl ether	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Atrazine	400	U	400	28	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Anthracene	400	U	400	30	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Carbazole	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Pyrene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Chrysene	400	U	400	25	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/23/13 13:40	08/30/13 23:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*66*		*46 - 130*	*08/23/13 13:40*	*08/30/13 23:37*	*1*
2-Fluorobiphenyl	*69*		*58 - 130*	*08/23/13 13:40*	*08/30/13 23:37*	*1*
Terphenyl-d14 (Surr)	*77*		*60 - 130*	*08/23/13 13:40*	*08/30/13 23:37*	*1*
Phenol-d5 (Surr)	*64*		*49 - 130*	*08/23/13 13:40*	*08/30/13 23:37*	*1*
2-Fluorophenol (Surr)	*65*		*40 - 130*	*08/23/13 13:40*	*08/30/13 23:37*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*58 - 130*	*08/23/13 13:40*	*08/30/13 23:37*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	230	U	230	18	ug/Kg	☼	08/22/13 11:07	08/26/13 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*109*		*70 - 131*	*08/22/13 11:07*	*08/26/13 13:28*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6100	U	6100	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 03:20	1
ORO C24-C40	**3300**	**J B**	6100	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 03:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*80*		*50 - 150*	*08/28/13 11:44*	*08/30/13 03:20*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-04 (0.5-1.5)
Date Collected: 08/20/13 14:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-17
Matrix: Solid
Percent Solids: 57.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	14	J	42	12	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Benzene	8.4	U	8.4	0.82	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Bromodichloromethane	8.4	U	8.4	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Bromoform	8.4	U	8.4	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Bromomethane	8.4	U	8.4	2.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Carbon disulfide	8.4	U	8.4	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Carbon tetrachloride	8.4	U	8.4	2.9	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Chlorobenzene	8.4	U	8.4	0.87	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Chloroethane	8.4	U	8.4	3.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Chloroform	8.4	U	8.4	0.99	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Chloromethane	8.4	U	8.4	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
cis-1,2-Dichloroethene	8.4	U	8.4	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
cis-1,3-Dichloropropene	8.4	U	8.4	2.0	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Cyclohexane	8.4	U	8.4	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Dibromochloromethane	8.4	U	8.4	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,2-Dibromo-3-Chloropropane	8.4	U	8.4	5.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,2-Dichlorobenzene	8.4	U	8.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,3-Dichlorobenzene	8.4	U	8.4	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,4-Dichlorobenzene	8.4	U	8.4	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Dichlorodifluoromethane	8.4	U	8.4	2.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,1-Dichloroethane	8.4	U	8.4	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,2-Dichloroethane	8.4	U	8.4	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,1-Dichloroethene	8.4	U	8.4	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,2-Dichloropropane	8.4	U	8.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Diisopropyl ether	8.4	U	8.4	0.93	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Ethylbenzene	8.4	U	8.4	1.0	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Ethylene Dibromide	8.4	U	8.4	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Ethyl tert-butyl ether	8.4	U	8.4	0.94	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
2-Hexanone	42	U	42	8.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Isopropylbenzene	8.4	U	8.4	1.1	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Methyl acetate	8.4	U	8.4	7.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Methylcyclohexane	8.4	U	8.4	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Methylene Chloride	25	U	25	17	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Methyl Ethyl Ketone	42	U	42	6.9	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
methyl isobutyl ketone	42	U	42	6.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Methyl tert-butyl ether	8.4	U	8.4	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Naphthalene	8.4	U	8.4	1.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Styrene	8.4	U	8.4	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Tert-amyl methyl ether	8.4	U	8.4	0.74	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
tert-Butyl alcohol	8.4	U	8.4	5.7	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,1,2,2-Tetrachloroethane	8.4	U	8.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Tetrachloroethene	8.4	U	8.4	1.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Toluene	8.4	U	8.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
trans-1,2-Dichloroethene	8.4	U	8.4	1.3	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
trans-1,3-Dichloropropene	8.4	U	8.4	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,2,4-Trichlorobenzene	8.4	U	8.4	1.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,1,1-Trichloroethane	8.4	U	8.4	1.9	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,1,2-Trichloroethane	8.4	U	8.4	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Trichloroethene	8.4	U	8.4	0.81	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1

Client Sample ID: SB02-04 (0.5-1.5)
Date Collected: 08/20/13 14:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-17
Matrix: Solid
Percent Solids: 57.9

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	8.4	U	8.4	1.6	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	8.4	U	8.4	3.4	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Vinyl chloride	8.4	U	8.4	1.5	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1
Xylenes, Total	17	U	17	3.2	ug/Kg	☼	08/23/13 16:13	08/27/13 23:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 122*	*08/23/13 16:13*	*08/27/13 23:52*	*1*
Dibromofluoromethane	*98*		*79 - 123*	*08/23/13 16:13*	*08/27/13 23:52*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*08/23/13 16:13*	*08/27/13 23:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	560	U	560	99	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Phenol	560	U	560	58	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Bis(2-chloroethyl)ether	560	U	560	77	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2-Chlorophenol	560	U	560	68	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2-Methylphenol	560	U	560	46	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
bis (2-chloroisopropyl) ether	560	U	560	51	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Acetophenone	560	U	560	48	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
3 & 4 Methylphenol	560	U	560	73	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
N-Nitrosodi-n-propylamine	560	U	560	55	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Hexachloroethane	560	U	560	48	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Nitrobenzene	560	U	560	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Isophorone	560	U	560	56	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2-Nitrophenol	560	U	560	70	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2,4-Dimethylphenol	560	U	560	75	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Bis(2-chloroethoxy)methane	560	U	560	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2,4-Dichlorophenol	560	U	560	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Naphthalene	**81**	**J**	560	51	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
4-Chloroaniline	1100	U *	1100	89	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Hexachlorobutadiene	560	U	560	61	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Caprolactam	560	U	560	110	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
4-Chloro-3-methylphenol	560	U	560	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2-Methylnaphthalene	**76**	**J**	560	65	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Hexachlorocyclopentadiene	560	U	560	70	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2,4,6-Trichlorophenol	560	U	560	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2,4,5-Trichlorophenol	560	U	560	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
1,1'-Biphenyl	1300	U	1300	1300	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2-Chloronaphthalene	560	U	560	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2-Nitroaniline	2900	U	2900	77	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Dimethyl phthalate	560	U	560	58	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2,6-Dinitrotoluene	560	U	560	72	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Acenaphthylene	560	U	560	61	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
3-Nitroaniline	2900	U	2900	78	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Acenaphthene	560	U	560	70	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2,4-Dinitrophenol	2900	U	2900	1400	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
4-Nitrophenol	2900	U	2900	560	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Dibenzofuran	560	U	560	56	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
2,4-Dinitrotoluene	560	U	560	83	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Diethyl phthalate	560	U	560	63	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1

Client Sample ID: SB02-04 (0.5-1.5)
Date Collected: 08/20/13 14:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-17
Matrix: Solid
Percent Solids: 57.9

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	560	U	560	61	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
4-Chlorophenyl phenyl ether	560	U	560	75	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
4-Nitroaniline	2900	U	2900	83	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
4,6-Dinitro-2-methylphenol	2900	U	2900	290	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
N-Nitrosodiphenylamine	560	U	560	56	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
4-Bromophenyl phenyl ether	560	U	560	61	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Hexachlorobenzene	560	U	560	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Atrazine	560	U	560	39	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Pentachlorophenol	2900	U	2900	560	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Phenanthrene	**85**	**J**	560	46	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Anthracene	560	U	560	43	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Carbazole	560	U	560	51	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Di-n-butyl phthalate	560	U	560	51	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Fluoranthene	**59**	**J**	560	55	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Pyrene	560	U	560	46	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Butyl benzyl phthalate	560	U	560	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
3,3'-Dichlorobenzidine	1100	U	1100	48	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Benzo[a]anthracene	560	U	560	46	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Chrysene	**45**	**J**	560	36	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Bis(2-ethylhexyl) phthalate	560	U	560	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Di-n-octyl phthalate	560	U	560	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Benzo[b]fluoranthene	560	U	560	65	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Benzo[k]fluoranthene	560	U	560	110	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Benzo[a]pyrene	560	U	560	89	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Indeno[1,2,3-cd]pyrene	560	U	560	48	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Dibenz(a,h)anthracene	560	U	560	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1
Benzo[g,h,i]perylene	560	U	560	37	ug/Kg	☼	08/23/13 13:40	08/31/13 00:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*63*		*46 - 130*	*08/23/13 13:40*	*08/31/13 00:02*	*1*
2-Fluorobiphenyl	*68*		*58 - 130*	*08/23/13 13:40*	*08/31/13 00:02*	*1*
Terphenyl-d14 (Surr)	*70*		*60 - 130*	*08/23/13 13:40*	*08/31/13 00:02*	*1*
Phenol-d5 (Surr)	*59*		*49 - 130*	*08/23/13 13:40*	*08/31/13 00:02*	*1*
2-Fluorophenol (Surr)	*58*		*40 - 130*	*08/23/13 13:40*	*08/31/13 00:02*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*58 - 130*	*08/23/13 13:40*	*08/31/13 00:02*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**7600**		500	38	ug/Kg	☼	08/22/13 11:07	08/26/13 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*128*		*70 - 131*	*08/22/13 11:07*	*08/26/13 13:48*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**3900**	**J B**	8500	2400	ug/Kg	☼	08/28/13 11:44	08/30/13 03:35	1
ORO C24-C40	**6500**	**J B**	8500	2400	ug/Kg	☼	08/28/13 11:44	08/30/13 03:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*50 - 150*	*08/28/13 11:44*	*08/30/13 03:35*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-04 (7.0-8.0)
Date Collected: 08/20/13 14:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-18
Matrix: Solid
Percent Solids: 78.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	24	U	24	7.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Benzene	4.8	U	4.8	0.47	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Bromodichloromethane	4.8	U	4.8	0.81	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Bromoform	4.8	U	4.8	0.61	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Bromomethane	4.8	U	4.8	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Carbon disulfide	4.8	U	4.8	1.2	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Carbon tetrachloride	4.8	U	4.8	1.6	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Chlorobenzene	4.8	U	4.8	0.50	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Chloroethane	4.8	U	4.8	1.8	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Chloroform	4.8	U	4.8	0.57	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Chloromethane	4.8	U	4.8	0.97	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
cis-1,2-Dichloroethene	4.8	U	4.8	0.74	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
cis-1,3-Dichloropropene	4.8	U	4.8	1.2	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Cyclohexane	4.8	U	4.8	0.91	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Dibromochloromethane	4.8	U	4.8	0.84	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,2-Dibromo-3-Chloropropane	4.8	U	4.8	3.2	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,2-Dichlorobenzene	4.8	U	4.8	0.69	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,3-Dichlorobenzene	4.8	U	4.8	0.92	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,4-Dichlorobenzene	4.8	U	4.8	0.79	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Dichlorodifluoromethane	4.8	U	4.8	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,1-Dichloroethane	4.8	U	4.8	0.80	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,2-Dichloroethane	4.8	U	4.8	0.79	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,1-Dichloroethene	4.8	U	4.8	0.73	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,2-Dichloropropane	4.8	U	4.8	0.72	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Diisopropyl ether	4.8	U	4.8	0.53	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Ethylbenzene	4.8	U	4.8	0.59	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Ethylene Dibromide	4.8	U	4.8	0.46	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Ethyl tert-butyl ether	4.8	U	4.8	0.54	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
2-Hexanone	24	U	24	4.8	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Isopropylbenzene	4.8	U	4.8	0.66	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Methyl acetate	4.8	U	4.8	4.5	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Methylcyclohexane	4.8	U	4.8	0.84	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Methylene Chloride	15	U	15	9.7	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Methyl Ethyl Ketone	24	U	24	4.0	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
methyl isobutyl ketone	24	U	24	3.9	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Methyl tert-butyl ether	4.8	U	4.8	0.97	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Naphthalene	4.8	U	4.8	0.97	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Styrene	4.8	U	4.8	0.74	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Tert-amyl methyl ether	4.8	U	4.8	0.43	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
tert-Butyl alcohol	4.8	U	4.8	3.3	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,1,2,2-Tetrachloroethane	4.8	U	4.8	0.70	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Tetrachloroethene	4.8	U	4.8	0.81	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Toluene	4.8	U	4.8	0.68	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
trans-1,2-Dichloroethene	4.8	U	4.8	0.74	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
trans-1,3-Dichloropropene	4.8	U	4.8	0.89	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,2,4-Trichlorobenzene	4.8	U	4.8	0.71	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,1,1-Trichloroethane	4.8	U	4.8	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,1,2-Trichloroethane	4.8	U	4.8	0.89	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Trichloroethene	4.8	U	4.8	0.46	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-04 (7.0-8.0)
Date Collected: 08/20/13 14:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-18
Matrix: Solid
Percent Solids: 78.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.8	U	4.8	0.92	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.8	U	4.8	1.9	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Vinyl chloride	4.8	U	4.8	0.89	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1
Xylenes, Total	9.7	U	9.7	1.8	ug/Kg	☼	08/23/13 16:13	08/28/13 00:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/23/13 16:13*	*08/28/13 00:18*	*1*
Dibromofluoromethane	*101*		*79 - 123*	*08/23/13 16:13*	*08/28/13 00:18*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/28/13 00:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	420	U	420	73	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Phenol	420	U	420	43	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Bis(2-chloroethyl)ether	420	U	420	57	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2-Chlorophenol	420	U	420	50	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2-Methylphenol	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
bis (2-chloroisopropyl) ether	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Acetophenone	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
3 & 4 Methylphenol	420	U	420	54	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
N-Nitrosodi-n-propylamine	420	U	420	40	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Hexachloroethane	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Nitrobenzene	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Isophorone	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2-Nitrophenol	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2,4-Dimethylphenol	420	U	420	55	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Bis(2-chloroethoxy)methane	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2,4-Dichlorophenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Naphthalene	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
4-Chloroaniline	830	U *	830	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Hexachlorobutadiene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Caprolactam	420	U	420	83	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
4-Chloro-3-methylphenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2-Methylnaphthalene	420	U	420	48	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Hexachlorocyclopentadiene	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2,4,6-Trichlorophenol	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2,4,5-Trichlorophenol	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
1,1'-Biphenyl	930	U	930	930	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2-Chloronaphthalene	420	U	420	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Dimethyl phthalate	420	U	420	43	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2,6-Dinitrotoluene	420	U	420	53	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Acenaphthylene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
3-Nitroaniline	2100	U	2100	58	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Acenaphthene	420	U	420	52	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
4-Nitrophenol	2100	U	2100	420	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Dibenzofuran	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
2,4-Dinitrotoluene	420	U	420	62	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Diethyl phthalate	420	U	420	47	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1

Client Sample ID: SB02-04 (7.0-8.0)
Date Collected: 08/20/13 14:30
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-18
Matrix: Solid
Percent Solids: 78.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
4-Chlorophenyl phenyl ether	420	U	420	55	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
4-Nitroaniline	2100	U	2100	62	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
N-Nitrosodiphenylamine	420	U	420	42	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
4-Bromophenyl phenyl ether	420	U	420	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Hexachlorobenzene	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Atrazine	420	U	420	29	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Pentachlorophenol	2100	U	2100	420	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Phenanthrene	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Anthracene	420	U	420	32	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Carbazole	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Di-n-butyl phthalate	420	U	420	38	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Fluoranthene	420	U	420	40	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Pyrene	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Butyl benzyl phthalate	420	U	420	33	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
3,3'-Dichlorobenzidine	830	U	830	35	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Benzo[a]anthracene	420	U	420	34	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Chrysene	420	U	420	26	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Bis(2-ethylhexyl) phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Di-n-octyl phthalate	420	U	420	37	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Benzo[b]fluoranthene	420	U	420	48	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Benzo[k]fluoranthene	420	U	420	82	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Benzo[a]pyrene	420	U	420	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Indeno[1,2,3-cd]pyrene	420	U	420	35	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Dibenz(a,h)anthracene	420	U	420	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1
Benzo[g,h,i]perylene	420	U	420	28	ug/Kg	☼	08/23/13 13:40	08/31/13 00:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*67*		*46 - 130*	*08/23/13 13:40*	*08/31/13 00:28*	*1*
2-Fluorobiphenyl	*73*		*58 - 130*	*08/23/13 13:40*	*08/31/13 00:28*	*1*
Terphenyl-d14 (Surr)	*84*		*60 - 130*	*08/23/13 13:40*	*08/31/13 00:28*	*1*
Phenol-d5 (Surr)	*65*		*49 - 130*	*08/23/13 13:40*	*08/31/13 00:28*	*1*
2-Fluorophenol (Surr)	*67*		*40 - 130*	*08/23/13 13:40*	*08/31/13 00:28*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*58 - 130*	*08/23/13 13:40*	*08/31/13 00:28*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**340**		250	19	ug/Kg	☼	08/22/13 11:07	08/26/13 14:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*131*		*70 - 131*	*08/22/13 11:07*	*08/26/13 14:08*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6200	U	6200	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 03:51	1
ORO C24-C40	**3500**	**J B**	6200	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 03:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*78*		*50 - 150*	*08/28/13 11:44*	*08/30/13 03:51*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-05 (0.5-1.5)
Date Collected: 08/20/13 14:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-19
Matrix: Solid
Percent Solids: 58.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	38	U	38	11	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Benzene	7.6	U	7.6	0.74	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Bromodichloromethane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Bromoform	7.6	U	7.6	0.95	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Bromomethane	7.6	U	7.6	2.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Carbon disulfide	7.6	U	7.6	1.8	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Carbon tetrachloride	7.6	U	7.6	2.6	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Chlorobenzene	7.6	U	7.6	0.79	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Chloroethane	7.6	U	7.6	2.9	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Chloroform	7.6	U	7.6	0.89	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Chloromethane	7.6	U	7.6	1.5	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
cis-1,2-Dichloroethene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
cis-1,3-Dichloropropene	7.6	U	7.6	1.8	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Cyclohexane	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Dibromochloromethane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,2-Dibromo-3-Chloropropane	7.6	U	7.6	5.0	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,2-Dichlorobenzene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,3-Dichlorobenzene	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,4-Dichlorobenzene	7.6	U	7.6	1.2	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Dichlorodifluoromethane	7.6	U	7.6	2.0	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,1-Dichloroethane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,2-Dichloroethane	7.6	U	7.6	1.2	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,1-Dichloroethene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,2-Dichloropropane	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Diisopropyl ether	7.6	U	7.6	0.83	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Ethylbenzene	7.6	U	7.6	0.92	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Ethylene Dibromide	7.6	U	7.6	0.73	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Ethyl tert-butyl ether	7.6	U	7.6	0.85	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
2-Hexanone	38	U	38	7.6	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Isopropylbenzene	7.6	U	7.6	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Methyl acetate	7.6	U	7.6	7.0	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Methylcyclohexane	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Methylene Chloride	23	U	23	15	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Methyl Ethyl Ketone	38	U	38	6.2	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
methyl isobutyl ketone	38	U	38	6.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Methyl tert-butyl ether	7.6	U	7.6	1.5	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Naphthalene	7.6	U	7.6	1.5	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Styrene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Tert-amyl methyl ether	7.6	U	7.6	0.67	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
tert-Butyl alcohol	7.6	U	7.6	5.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,1,2,2-Tetrachloroethane	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Tetrachloroethene	7.6	U	7.6	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Toluene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
trans-1,2-Dichloroethene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
trans-1,3-Dichloropropene	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,2,4-Trichlorobenzene	7.6	U	7.6	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,1,1-Trichloroethane	7.6	U	7.6	1.7	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,1,2-Trichloroethane	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Trichloroethene	7.6	U	7.6	0.73	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1

Client Sample ID: SB02-05 (0.5-1.5)
Date Collected: 08/20/13 14:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-19
Matrix: Solid
Percent Solids: 58.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	7.6	U	7.6	3.0	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Vinyl chloride	7.6	U	7.6	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1
Xylenes, Total	15	U	15	2.9	ug/Kg	☼	08/23/13 16:13	08/28/13 00:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/28/13 00:44*	*1*
Dibromofluoromethane	*101*		*79 - 123*	*08/23/13 16:13*	*08/28/13 00:44*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/23/13 16:13*	*08/28/13 00:44*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	**220**	**J**	550	97	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Phenol	550	U	550	57	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Bis(2-chloroethyl)ether	550	U	550	76	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2-Chlorophenol	550	U	550	67	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2-Methylphenol	550	U	550	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
bis (2-chloroisopropyl) ether	550	U	550	50	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Acetophenone	550	U	550	47	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
3 & 4 Methylphenol	550	U	550	72	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
N-Nitrosodi-n-propylamine	550	U	550	54	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Hexachloroethane	550	U	550	47	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Nitrobenzene	550	U	550	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Isophorone	550	U	550	55	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2-Nitrophenol	550	U	550	69	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2,4-Dimethylphenol	550	U	550	74	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Bis(2-chloroethoxy)methane	550	U	550	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2,4-Dichlorophenol	550	U	550	59	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Naphthalene	**1100**		550	50	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
4-Chloroaniline	1100	U *	1100	87	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Hexachlorobutadiene	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Caprolactam	550	U	550	110	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
4-Chloro-3-methylphenol	550	U	550	59	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2-Methylnaphthalene	**1400**		550	64	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Hexachlorocyclopentadiene	550	U	550	69	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2,4,6-Trichlorophenol	550	U	550	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2,4,5-Trichlorophenol	550	U	550	59	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
1,1'-Biphenyl	1200	U	1200	1200	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2-Chloronaphthalene	550	U	550	59	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2-Nitroaniline	2900	U	2900	76	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Dimethyl phthalate	550	U	550	57	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2,6-Dinitrotoluene	550	U	550	71	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Acenaphthylene	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
3-Nitroaniline	2900	U	2900	77	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Acenaphthene	550	U	550	69	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2,4-Dinitrophenol	2900	U	2900	1400	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
4-Nitrophenol	2900	U	2900	550	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Dibenzofuran	**420**	**J**	550	55	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
2,4-Dinitrotoluene	550	U	550	82	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Diethyl phthalate	550	U	550	62	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1

Client Sample ID: SB02-05 (0.5-1.5)
Date Collected: 08/20/13 14:50
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-19
Matrix: Solid
Percent Solids: 58.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
4-Chlorophenyl phenyl ether	550	U	550	74	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
4-Nitroaniline	2900	U	2900	82	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
4,6-Dinitro-2-methylphenol	2900	U	2900	290	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
N-Nitrosodiphenylamine	550	U	550	55	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
4-Bromophenyl phenyl ether	550	U	550	60	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Hexachlorobenzene	550	U	550	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Atrazine	550	U	550	39	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Pentachlorophenol	2900	U	2900	550	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Phenanthrene	**920**		550	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Anthracene	**92**	**J**	550	42	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Carbazole	**57**	**J**	550	50	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Di-n-butyl phthalate	550	U	550	50	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Fluoranthene	**540**	**J**	550	54	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Pyrene	**330**	**J**	550	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Butyl benzyl phthalate	550	U	550	44	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
3,3'-Dichlorobenzidine	1100	U	1100	47	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Benzo[a]anthracene	550	U	550	45	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Chrysene	**390**	**J**	550	35	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Bis(2-ethylhexyl) phthalate	550	U	550	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Di-n-octyl phthalate	550	U	550	49	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Benzo[b]fluoranthene	**380**	**J**	550	64	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Benzo[k]fluoranthene	**120**	**J**	550	110	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Benzo[a]pyrene	**130**	**J**	550	87	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Indeno[1,2,3-cd]pyrene	**120**	**J B**	550	47	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Dibenz(a,h)anthracene	550	U	550	66	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1
Benzo[g,h,i]perylene	**110**	**J B**	550	37	ug/Kg	☼	08/23/13 13:40	08/31/13 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*46 - 130*	*08/23/13 13:40*	*08/31/13 00:53*	*1*
2-Fluorobiphenyl	*77*		*58 - 130*	*08/23/13 13:40*	*08/31/13 00:53*	*1*
Terphenyl-d14 (Surr)	*76*		*60 - 130*	*08/23/13 13:40*	*08/31/13 00:53*	*1*
Phenol-d5 (Surr)	*52*		*49 - 130*	*08/23/13 13:40*	*08/31/13 00:53*	*1*
2-Fluorophenol (Surr)	*48*		*40 - 130*	*08/23/13 13:40*	*08/31/13 00:53*	*1*
2,4,6-Tribromophenol (Surr)	*62*		*58 - 130*	*08/23/13 13:40*	*08/31/13 00:53*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**1500**		430	33	ug/Kg	☼	08/22/13 11:07	08/26/13 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*211*	*X*	*70 - 131*	*08/22/13 11:07*	*08/26/13 14:30*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	8400	U	8400	2400	ug/Kg	☼	08/31/13 08:51	08/31/13 23:18	1
ORO C24-C40	**7200**	**J B**	8400	2400	ug/Kg	☼	08/31/13 08:51	08/31/13 23:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*81*		*50 - 150*	*08/31/13 08:51*	*08/31/13 23:18*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-05 (7.0-8.0)
Date Collected: 08/20/13 15:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-20
Matrix: Solid
Percent Solids: 82.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	U	22	6.3	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Benzene	4.3	U	4.3	0.42	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Bromodichloromethane	4.3	U	4.3	0.73	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Bromoform	4.3	U	4.3	0.54	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Bromomethane	4.3	U	4.3	1.2	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Carbon disulfide	4.3	U	4.3	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Carbon tetrachloride	4.3	U	4.3	1.5	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Chlorobenzene	4.3	U	4.3	0.45	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Chloroethane	4.3	U	4.3	1.6	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Chloroform	4.3	U	4.3	0.51	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Chloromethane	4.3	U	4.3	0.86	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
cis-1,2-Dichloroethene	4.3	U	4.3	0.66	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
cis-1,3-Dichloropropene	4.3	U	4.3	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Cyclohexane	4.3	U	4.3	0.81	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Dibromochloromethane	4.3	U	4.3	0.75	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,2-Dibromo-3-Chloropropane	4.3	U	4.3	2.9	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,2-Dichlorobenzene	4.3	U	4.3	0.61	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,3-Dichlorobenzene	4.3	U	4.3	0.82	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,4-Dichlorobenzene	4.3	U	4.3	0.71	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Dichlorodifluoromethane	4.3	U	4.3	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,1-Dichloroethane	4.3	U	4.3	0.72	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,2-Dichloroethane	4.3	U	4.3	0.71	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,1-Dichloroethene	4.3	U	4.3	0.65	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,2-Dichloropropane	4.3	U	4.3	0.64	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Diisopropyl ether	4.3	U	4.3	0.48	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Ethylbenzene	4.3	U	4.3	0.53	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Ethylene Dibromide	4.3	U	4.3	0.42	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Ethyl tert-butyl ether	4.3	U	4.3	0.48	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
2-Hexanone	22	U	22	4.3	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Isopropylbenzene	4.3	U	4.3	0.59	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Methyl acetate	4.3	U	4.3	4.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Methylcyclohexane	4.3	U	4.3	0.75	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Methylene Chloride	13	U	13	8.6	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Methyl Ethyl Ketone	22	U	22	3.5	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
methyl isobutyl ketone	22	U	22	3.5	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Methyl tert-butyl ether	4.3	U	4.3	0.86	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Naphthalene	4.3	U	4.3	0.86	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Styrene	4.3	U	4.3	0.66	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Tert-amyl methyl ether	4.3	U	4.3	0.38	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
tert-Butyl alcohol	4.3	U	4.3	2.9	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,1,2,2-Tetrachloroethane	4.3	U	4.3	0.62	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Tetrachloroethene	4.3	U	4.3	0.73	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Toluene	4.3	U	4.3	0.61	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
trans-1,2-Dichloroethene	4.3	U	4.3	0.66	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
trans-1,3-Dichloropropene	4.3	U	4.3	0.80	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,2,4-Trichlorobenzene	4.3	U	4.3	0.63	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,1,1-Trichloroethane	4.3	U	4.3	0.95	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,1,2-Trichloroethane	4.3	U	4.3	0.80	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Trichloroethene	4.3	U	4.3	0.42	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1

Client Sample ID: SB02-05 (7.0-8.0)
Date Collected: 08/20/13 15:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-20
Matrix: Solid
Percent Solids: 82.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.3	U	4.3	0.82	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	U	4.3	1.7	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Vinyl chloride	4.3	U	4.3	0.80	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1
Xylenes, Total	8.6	U	8.6	1.6	ug/Kg	☼	08/23/13 16:13	08/28/13 01:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/28/13 01:09*	*1*
Dibromofluoromethane	*100*		*79 - 123*	*08/23/13 16:13*	*08/28/13 01:09*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/23/13 16:13*	*08/28/13 01:09*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	390	U	390	69	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Phenol	390	U	390	40	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Bis(2-chloroethyl)ether	390	U	390	53	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2-Chlorophenol	390	U	390	47	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2-Methylphenol	390	U	390	32	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
bis (2-chloroisopropyl) ether	390	U	390	36	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Acetophenone	390	U	390	33	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
3 & 4 Methylphenol	390	U	390	51	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
N-Nitrosodi-n-propylamine	390	U	390	38	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Hexachloroethane	390	U	390	33	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Nitrobenzene	390	U	390	31	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Isophorone	390	U	390	39	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2-Nitrophenol	390	U	390	49	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2,4-Dimethylphenol	390	U	390	52	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Bis(2-chloroethoxy)methane	390	U	390	46	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2,4-Dichlorophenol	390	U	390	42	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Naphthalene	390	U	390	36	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
4-Chloroaniline	780	U *	780	62	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Hexachlorobutadiene	390	U	390	43	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Caprolactam	390	U	390	78	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
4-Chloro-3-methylphenol	390	U	390	42	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2-Methylnaphthalene	390	U	390	45	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Hexachlorocyclopentadiene	390	U	390	49	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2,4,6-Trichlorophenol	390	U	390	34	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2,4,5-Trichlorophenol	390	U	390	42	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
1,1'-Biphenyl	880	U	880	880	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2-Chloronaphthalene	390	U	390	42	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2-Nitroaniline	2000	U	2000	53	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Dimethyl phthalate	390	U	390	40	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2,6-Dinitrotoluene	390	U	390	50	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Acenaphthylene	390	U	390	43	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
3-Nitroaniline	2000	U	2000	55	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Acenaphthene	390	U	390	49	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2,4-Dinitrophenol	2000	U	2000	990	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
4-Nitrophenol	2000	U	2000	390	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Dibenzofuran	390	U	390	39	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
2,4-Dinitrotoluene	390	U	390	58	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Diethyl phthalate	390	U	390	44	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1

Client Sample ID: SB02-05 (7.0-8.0)
Date Collected: 08/20/13 15:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-20
Matrix: Solid
Percent Solids: 82.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	390	U	390	43	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
4-Chlorophenyl phenyl ether	390	U	390	52	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
4-Nitroaniline	2000	U	2000	58	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
N-Nitrosodiphenylamine	390	U	390	39	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
4-Bromophenyl phenyl ether	390	U	390	43	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Hexachlorobenzene	390	U	390	46	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Atrazine	390	U	390	27	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Pentachlorophenol	2000	U	2000	390	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Phenanthrene	390	U	390	32	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Anthracene	390	U	390	30	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Carbazole	390	U	390	36	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Di-n-butyl phthalate	390	U	390	36	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Fluoranthene	390	U	390	38	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Pyrene	390	U	390	32	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Butyl benzyl phthalate	390	U	390	31	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
3,3'-Dichlorobenzidine	780	U	780	33	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Benzo[a]anthracene	390	U	390	32	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Chrysene	390	U	390	25	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Bis(2-ethylhexyl) phthalate	390	U	390	34	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Di-n-octyl phthalate	390	U	390	34	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Benzo[b]fluoranthene	390	U	390	45	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Benzo[k]fluoranthene	390	U	390	77	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Benzo[a]pyrene	390	U	390	62	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Indeno[1,2,3-cd]pyrene	390	U	390	33	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Dibenz(a,h)anthracene	390	U	390	46	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1
Benzo[g,h,i]perylene	390	U	390	26	ug/Kg	☼	08/23/13 13:40	09/03/13 16:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*76*		*46 - 130*	*08/23/13 13:40*	*09/03/13 16:04*	*1*
2-Fluorobiphenyl	*80*		*58 - 130*	*08/23/13 13:40*	*09/03/13 16:04*	*1*
Terphenyl-d14 (Surr)	*77*		*60 - 130*	*08/23/13 13:40*	*09/03/13 16:04*	*1*
Phenol-d5 (Surr)	*74*		*49 - 130*	*08/23/13 13:40*	*09/03/13 16:04*	*1*
2-Fluorophenol (Surr)	*91*		*40 - 130*	*08/23/13 13:40*	*09/03/13 16:04*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*58 - 130*	*08/23/13 13:40*	*09/03/13 16:04*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	270	U	270	21	ug/Kg	☼	08/22/13 11:07	08/26/13 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*113*		*70 - 131*	*08/22/13 11:07*	*08/26/13 14:50*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5900	U	5900	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 04:54	1
ORO C24-C40	**3000**	**J B**	5900	1700	ug/Kg	☼	08/28/13 11:44	08/30/13 04:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*67*		*50 - 150*	*08/28/13 11:44*	*08/30/13 04:54*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-06 (0.5-1.5)
Date Collected: 08/20/13 15:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-21
Matrix: Solid
Percent Solids: 62.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	27	U	27	8.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Benzene	5.5	U	5.5	0.54	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Bromodichloromethane	5.5	U	5.5	0.92	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Bromoform	5.5	U	5.5	0.69	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Bromomethane	5.5	U	5.5	1.5	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Carbon disulfide	5.5	U	5.5	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Carbon tetrachloride	5.5	U	5.5	1.9	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Chlorobenzene	5.5	U	5.5	0.57	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Chloroethane	5.5	U	5.5	2.1	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Chloroform	5.5	U	5.5	0.64	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Chloromethane	5.5	U	5.5	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
cis-1,2-Dichloroethene	5.5	U	5.5	0.83	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
cis-1,3-Dichloropropene	5.5	U	5.5	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Cyclohexane	5.5	U	5.5	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Dibromochloromethane	5.5	U	5.5	0.95	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,2-Dibromo-3-Chloropropane	5.5	U	5.5	3.6	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,2-Dichlorobenzene	5.5	U	5.5	0.78	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,3-Dichlorobenzene	5.5	U	5.5	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,4-Dichlorobenzene	5.5	U	5.5	0.90	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Dichlorodifluoromethane	5.5	U	5.5	1.4	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,1-Dichloroethane	5.5	U	5.5	0.91	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,2-Dichloroethane	5.5	U	5.5	0.90	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,1-Dichloroethene	5.5	U	5.5	0.82	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,2-Dichloropropane	5.5	U	5.5	0.81	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Diisopropyl ether	5.5	U	5.5	0.60	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Ethylbenzene	5.5	U	5.5	0.67	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Ethylene Dibromide	5.5	U	5.5	0.52	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Ethyl tert-butyl ether	5.5	U	5.5	0.61	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
2-Hexanone	27	U	27	5.5	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Isopropylbenzene	5.5	U	5.5	0.74	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Methyl acetate	5.5	U	5.5	5.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Methylcyclohexane	5.5	U	5.5	0.95	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Methylene Chloride	16	U	16	11	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Methyl Ethyl Ketone	27	U	27	4.5	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
methyl isobutyl ketone	27	U	27	4.4	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Methyl tert-butyl ether	5.5	U	5.5	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Naphthalene	5.5	U	5.5	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Styrene	5.5	U	5.5	0.83	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Tert-amyl methyl ether	5.5	U	5.5	0.48	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
tert-Butyl alcohol	5.5	U	5.5	3.7	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,1,2,2-Tetrachloroethane	5.5	U	5.5	0.79	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Tetrachloroethene	5.5	U	5.5	0.92	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Toluene	5.5	U	5.5	0.76	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
trans-1,2-Dichloroethene	5.5	U	5.5	0.83	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
trans-1,3-Dichloropropene	5.5	U	5.5	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,2,4-Trichlorobenzene	5.5	U	5.5	0.80	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,1,1-Trichloroethane	5.5	U	5.5	1.2	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,1,2-Trichloroethane	5.5	U	5.5	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Trichloroethene	5.5	U	5.5	0.52	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1

Client Sample ID: SB02-06 (0.5-1.5)
Date Collected: 08/20/13 15:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-21
Matrix: Solid
Percent Solids: 62.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.5	U	5.5	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.5	U	5.5	2.2	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Vinyl chloride	5.5	U	5.5	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1
Xylenes, Total	11	U	11	2.1	ug/Kg	☼	08/23/13 16:13	08/28/13 01:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*08/23/13 16:13*	*08/28/13 01:35*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/23/13 16:13*	*08/28/13 01:35*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/23/13 16:13*	*08/28/13 01:35*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	530	U	530	93	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Phenol	530	U	530	54	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Bis(2-chloroethyl)ether	530	U	530	72	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2-Chlorophenol	530	U	530	64	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2-Methylphenol	530	U	530	43	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
bis (2-chloroisopropyl) ether	530	U	530	48	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Acetophenone	530	U	530	45	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
3 & 4 Methylphenol	530	U	530	69	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
N-Nitrosodi-n-propylamine	530	U	530	51	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Hexachloroethane	530	U	530	45	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Nitrobenzene	530	U	530	42	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Isophorone	530	U	530	53	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2-Nitrophenol	530	U	530	66	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2,4-Dimethylphenol	530	U	530	70	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Bis(2-chloroethoxy)methane	530	U	530	62	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2,4-Dichlorophenol	530	U	530	56	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Naphthalene	530	U	530	48	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
4-Chloroaniline	1100	U *	1100	83	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Hexachlorobutadiene	530	U	530	58	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Caprolactam	530	U	530	110	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
4-Chloro-3-methylphenol	530	U	530	56	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2-Methylnaphthalene	530	U	530	61	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Hexachlorocyclopentadiene	530	U	530	66	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2,4,6-Trichlorophenol	530	U	530	46	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2,4,5-Trichlorophenol	530	U	530	56	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
1,1'-Biphenyl	1200	U	1200	1200	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2-Chloronaphthalene	530	U	530	56	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2-Nitroaniline	2700	U	2700	72	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Dimethyl phthalate	530	U	530	54	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2,6-Dinitrotoluene	530	U	530	67	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Acenaphthylene	530	U	530	58	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
3-Nitroaniline	2700	U	2700	74	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Acenaphthene	530	U	530	66	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2,4-Dinitrophenol	2700	U	2700	1300	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
4-Nitrophenol	2700	U	2700	530	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Dibenzofuran	530	U	530	53	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
2,4-Dinitrotoluene	530	U	530	79	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Diethyl phthalate	530	U	530	59	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1

Client Sample ID: SB02-06 (0.5-1.5)
Date Collected: 08/20/13 15:25
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-21
Matrix: Solid
Percent Solids: 62.3

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	530	U	530	58	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
4-Chlorophenyl phenyl ether	530	U	530	70	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
4-Nitroaniline	2700	U	2700	79	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
4,6-Dinitro-2-methylphenol	2700	U	2700	270	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
N-Nitrosodiphenylamine	530	U	530	53	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
4-Bromophenyl phenyl ether	530	U	530	58	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Hexachlorobenzene	530	U	530	62	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Atrazine	530	U	530	37	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Pentachlorophenol	2700	U	2700	530	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Phenanthrene	530	U	530	43	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Anthracene	530	U	530	40	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Carbazole	530	U	530	48	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Di-n-butyl phthalate	530	U	530	48	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Fluoranthene	530	U	530	51	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Pyrene	530	U	530	43	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Butyl benzyl phthalate	530	U	530	42	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
3,3'-Dichlorobenzidine	1100	U	1100	45	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Benzo[a]anthracene	530	U	530	43	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Chrysene	530	U	530	34	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Bis(2-ethylhexyl) phthalate	530	U	530	46	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Di-n-octyl phthalate	530	U	530	46	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Benzo[b]fluoranthene	530	U	530	61	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Benzo[k]fluoranthene	530	U	530	100	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Benzo[a]pyrene	530	U	530	83	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Indeno[1,2,3-cd]pyrene	530	U	530	45	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Dibenz(a,h)anthracene	530	U	530	62	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1
Benzo[g,h,i]perylene	530	U	530	35	ug/Kg	☼	08/23/13 13:40	08/31/13 01:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*60*		*46 - 130*	*08/23/13 13:40*	*08/31/13 01:43*	*1*
2-Fluorobiphenyl	*62*		*58 - 130*	*08/23/13 13:40*	*08/31/13 01:43*	*1*
Terphenyl-d14 (Surr)	*63*		*60 - 130*	*08/23/13 13:40*	*08/31/13 01:43*	*1*
Phenol-d5 (Surr)	*57*		*49 - 130*	*08/23/13 13:40*	*08/31/13 01:43*	*1*
2-Fluorophenol (Surr)	*59*		*40 - 130*	*08/23/13 13:40*	*08/31/13 01:43*	*1*
2,4,6-Tribromophenol (Surr)	*65*		*58 - 130*	*08/23/13 13:40*	*08/31/13 01:43*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**520**		290	22	ug/Kg	☼	08/22/13 11:07	08/28/13 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*105*		*70 - 131*	*08/22/13 11:07*	*08/28/13 21:58*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2300**	**J B**	8000	2200	ug/Kg	☼	08/28/13 11:44	08/30/13 05:09	1
ORO C24-C40	**4600**	**J B**	8000	2200	ug/Kg	☼	08/28/13 11:44	08/30/13 05:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*69*		*50 - 150*	*08/28/13 11:44*	*08/30/13 05:09*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-06 (6.5-7.5)
Date Collected: 08/20/13 15:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-22
Matrix: Solid
Percent Solids: 83.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	24	U	24	6.9	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Benzene	4.7	U	4.7	0.46	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Bromodichloromethane	4.7	U	4.7	0.79	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Bromoform	4.7	U	4.7	0.59	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Bromomethane	4.7	U	4.7	1.3	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Carbon disulfide	4.7	U	4.7	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Carbon tetrachloride	4.7	U	4.7	1.6	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Chlorobenzene	4.7	U	4.7	0.49	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Chloroethane	4.7	U	4.7	1.8	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Chloroform	4.7	U	4.7	0.55	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Chloromethane	4.7	U	4.7	0.94	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
cis-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
cis-1,3-Dichloropropene	4.7	U	4.7	1.1	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Cyclohexane	4.7	U	4.7	0.88	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Dibromochloromethane	4.7	U	4.7	0.82	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,2-Dibromo-3-Chloropropane	4.7	U	4.7	3.1	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,2-Dichlorobenzene	4.7	U	4.7	0.67	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,3-Dichlorobenzene	4.7	U	4.7	0.89	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,4-Dichlorobenzene	4.7	U	4.7	0.77	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Dichlorodifluoromethane	4.7	U	4.7	1.2	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,1-Dichloroethane	4.7	U	4.7	0.78	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,2-Dichloroethane	4.7	U	4.7	0.77	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,1-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,2-Dichloropropane	4.7	U	4.7	0.70	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Diisopropyl ether	4.7	U	4.7	0.52	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Ethylbenzene	4.7	U	4.7	0.57	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Ethylene Dibromide	4.7	U	4.7	0.45	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Ethyl tert-butyl ether	4.7	U	4.7	0.53	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
2-Hexanone	24	U	24	4.7	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Isopropylbenzene	4.7	U	4.7	0.64	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Methyl acetate	4.7	U	4.7	4.3	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Methylcyclohexane	4.7	U	4.7	0.82	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Methylene Chloride	14	U	14	9.4	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Methyl Ethyl Ketone	24	U	24	3.9	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
methyl isobutyl ketone	24	U	24	3.8	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Methyl tert-butyl ether	4.7	U	4.7	0.94	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Naphthalene	4.7	U	4.7	0.94	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Styrene	4.7	U	4.7	0.71	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Tert-amyl methyl ether	4.7	U	4.7	0.41	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
tert-Butyl alcohol	4.7	U	4.7	3.2	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,1,2,2-Tetrachloroethane	4.7	U	4.7	0.68	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Tetrachloroethene	4.7	U	4.7	0.79	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Toluene	4.7	U	4.7	0.66	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
trans-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
trans-1,3-Dichloropropene	4.7	U	4.7	0.87	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,2,4-Trichlorobenzene	4.7	U	4.7	0.69	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,1,1-Trichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,1,2-Trichloroethane	4.7	U	4.7	0.87	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Trichloroethene	4.7	U	4.7	0.45	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-06 (6.5-7.5)
Date Collected: 08/20/13 15:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-22
Matrix: Solid
Percent Solids: 83.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.7	U	4.7	0.89	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7	U	4.7	1.9	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Vinyl chloride	4.7	U	4.7	0.87	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1
Xylenes, Total	9.4	U	9.4	1.8	ug/Kg	☼	08/23/13 16:13	08/28/13 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/23/13 16:13*	*08/28/13 02:01*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/23/13 16:13*	*08/28/13 02:01*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*08/23/13 16:13*	*08/28/13 02:01*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	69	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Phenol	400	U	400	41	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2-Methylphenol	400	U	400	32	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
3 & 4 Methylphenol	400	U	400	51	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
N-Nitrosodi-n-propylamine	400	U	400	38	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Isophorone	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2-Nitrophenol	400	U	400	49	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
4-Chloroaniline	790	U *	790	62	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Hexachlorobutadiene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Caprolactam	400	U	400	79	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2-Methylnaphthalene	400	U	400	45	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Hexachlorocyclopentadiene	400	U	400	49	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
1,1'-Biphenyl	890	U	890	890	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2-Nitroaniline	2000	U	2000	54	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2,6-Dinitrotoluene	400	U	400	50	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Acenaphthylene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
3-Nitroaniline	2000	U	2000	55	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Acenaphthene	400	U	400	49	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2,4-Dinitrophenol	2000	U	2000	990	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
4-Nitrophenol	2000	U	2000	400	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Diethyl phthalate	400	U	400	44	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1

Client Sample ID: SB02-06 (6.5-7.5)
Date Collected: 08/20/13 15:35
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-22
Matrix: Solid
Percent Solids: 83.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
4-Nitroaniline	2000	U	2000	59	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
4-Bromophenyl phenyl ether	400	U	400	43	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Atrazine	400	U	400	28	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Pentachlorophenol	2000	U	2000	400	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Phenanthrene	400	U	400	32	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Anthracene	400	U	400	30	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Carbazole	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Fluoranthene	400	U	400	38	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Pyrene	400	U	400	32	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
3,3'-Dichlorobenzidine	790	U	790	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Benzo[a]anthracene	400	U	400	32	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Chrysene	400	U	400	25	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Benzo[b]fluoranthene	400	U	400	45	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Benzo[k]fluoranthene	400	U	400	78	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Benzo[a]pyrene	400	U	400	62	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1
Benzo[g,h,i]perylene	400	U	400	26	ug/Kg	☼	08/23/13 13:40	08/30/13 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*67*		*46 - 130*	*08/23/13 13:40*	*08/30/13 18:17*	*1*
2-Fluorobiphenyl	*78*		*58 - 130*	*08/23/13 13:40*	*08/30/13 18:17*	*1*
Terphenyl-d14 (Surr)	*62*		*60 - 130*	*08/23/13 13:40*	*08/30/13 18:17*	*1*
Phenol-d5 (Surr)	*55*		*49 - 130*	*08/23/13 13:40*	*08/30/13 18:17*	*1*
2-Fluorophenol (Surr)	*58*		*40 - 130*	*08/23/13 13:40*	*08/30/13 18:17*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*58 - 130*	*08/23/13 13:40*	*08/30/13 18:17*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	590	U	590	45	ug/Kg	☼	08/22/13 11:07	08/29/13 12:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*92*		*70 - 131*	*08/22/13 11:07*	*08/29/13 12:48*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5900	U	5900	1700	ug/Kg	☼	08/31/13 08:51	08/31/13 23:33	1
ORO C24-C40	**4700**	**J B**	5900	1700	ug/Kg	☼	08/31/13 08:51	08/31/13 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*82*		*50 - 150*	*08/31/13 08:51*	*08/31/13 23:33*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: PZ01-04 (DRO-SGT)

Lab Sample ID: 680-93445-23

Date Collected: 08/20/13 15:40
Matrix: Water
Date Received: 08/21/13 10:07

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1300		100	28	ug/L		08/31/13 08:40	08/31/13 19:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*95*		*50 - 150*	*08/31/13 08:40*	*08/31/13 19:52*	*1*

Client Sample ID: PZ01-09 (DRO-SGT)

Lab Sample ID: 680-93445-24

Date Collected: 08/20/13 16:10
Matrix: Water
Date Received: 08/21/13 10:07

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	130		95	27	ug/L		08/31/13 08:40	08/31/13 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*78*		*50 - 150*	*08/31/13 08:40*	*08/31/13 20:08*	*1*

Client Sample ID: TB 130820-1

Lab Sample ID: 680-93445-25

Date Collected: 08/20/13 00:00
Matrix: Water
Date Received: 08/21/13 10:07

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/28/13 23:41	1
Benzene	1.0	U	1.0	0.34	ug/L			08/28/13 23:41	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/28/13 23:41	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/28/13 23:41	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/28/13 23:41	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/28/13 23:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 23:41	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/28/13 23:41	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/28/13 23:41	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/28/13 23:41	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/28/13 23:41	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/28/13 23:41	1
2-Hexanone	25	U	25	3.1	ug/L			08/28/13 23:41	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: TB 130820-1

Lab Sample ID: 680-93445-25

Date Collected: 08/20/13 00:00

Matrix: Water

Date Received: 08/21/13 10:07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/28/13 23:41	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/28/13 23:41	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/28/13 23:41	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/28/13 23:41	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/28/13 23:41	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/28/13 23:41	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/28/13 23:41	1
Styrene	1.0	U	1.0	1.0	ug/L			08/28/13 23:41	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/28/13 23:41	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/28/13 23:41	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/28/13 23:41	1
Toluene	1.0	U	1.0	0.70	ug/L			08/28/13 23:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 23:41	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/28/13 23:41	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/28/13 23:41	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/28/13 23:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/28/13 23:41	1
Xylenes, Total	10	U	10	1.6	ug/L			08/28/13 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/28/13 23:41*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*08/28/13 23:41*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/28/13 23:41*	*1*

Client Sample ID: TB 130820-2

Lab Sample ID: 680-93445-26

Date Collected: 08/20/13 00:00

Matrix: Water

Date Received: 08/21/13 10:07

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/29/13 00:07	1
Benzene	1.0	U	1.0	0.34	ug/L			08/29/13 00:07	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/29/13 00:07	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/29/13 00:07	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/29/13 00:07	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/29/13 00:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 00:07	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: TB 130820-2
Date Collected: 08/20/13 00:00
Date Received: 08/21/13 10:07

Lab Sample ID: 680-93445-26
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/29/13 00:07	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/29/13 00:07	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/29/13 00:07	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/29/13 00:07	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/29/13 00:07	1
2-Hexanone	25	U	25	3.1	ug/L			08/29/13 00:07	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/29/13 00:07	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/29/13 00:07	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/29/13 00:07	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/29/13 00:07	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/29/13 00:07	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/29/13 00:07	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/29/13 00:07	1
Styrene	1.0	U	1.0	1.0	ug/L			08/29/13 00:07	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/29/13 00:07	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/29/13 00:07	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/29/13 00:07	1
Toluene	1.0	U	1.0	0.70	ug/L			08/29/13 00:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 00:07	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/29/13 00:07	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/29/13 00:07	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/29/13 00:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/29/13 00:07	1
Xylenes, Total	10	U	10	1.6	ug/L			08/29/13 00:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*78 - 118*		*08/29/13 00:07*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*08/29/13 00:07*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/29/13 00:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-189967/4
Matrix: Solid
Analysis Batch: 189967

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg			08/27/13 16:46	1
Benzene	5.0	U	5.0	0.49	ug/Kg			08/27/13 16:46	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg			08/27/13 16:46	1
Bromoform	5.0	U	5.0	0.63	ug/Kg			08/27/13 16:46	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg			08/27/13 16:46	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg			08/27/13 16:46	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg			08/27/13 16:46	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg			08/27/13 16:46	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg			08/27/13 16:46	1
Chloroform	5.0	U	5.0	0.59	ug/Kg			08/27/13 16:46	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			08/27/13 16:46	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/27/13 16:46	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg			08/27/13 16:46	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg			08/27/13 16:46	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg			08/27/13 16:46	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg			08/27/13 16:46	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg			08/27/13 16:46	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg			08/27/13 16:46	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg			08/27/13 16:46	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg			08/27/13 16:46	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg			08/27/13 16:46	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg			08/27/13 16:46	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg			08/27/13 16:46	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg			08/27/13 16:46	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg			08/27/13 16:46	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg			08/27/13 16:46	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg			08/27/13 16:46	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg			08/27/13 16:46	1
2-Hexanone	25	U	25	5.0	ug/Kg			08/27/13 16:46	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg			08/27/13 16:46	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg			08/27/13 16:46	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg			08/27/13 16:46	1
Methylene Chloride	15	U	15	10	ug/Kg			08/27/13 16:46	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg			08/27/13 16:46	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg			08/27/13 16:46	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			08/27/13 16:46	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg			08/27/13 16:46	1
Styrene	5.0	U	5.0	0.76	ug/Kg			08/27/13 16:46	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg			08/27/13 16:46	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg			08/27/13 16:46	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg			08/27/13 16:46	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg			08/27/13 16:46	1
Toluene	5.0	U	5.0	0.70	ug/Kg			08/27/13 16:46	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/27/13 16:46	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg			08/27/13 16:46	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg			08/27/13 16:46	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg			08/27/13 16:46	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg			08/27/13 16:46	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-189967/4
Matrix: Solid
Analysis Batch: 189967

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	5.0	U	5.0	0.48	ug/Kg			08/27/13 16:46	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg			08/27/13 16:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg			08/27/13 16:46	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg			08/27/13 16:46	1
Xylenes, Total	10	U	10	1.9	ug/Kg			08/27/13 16:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*		*08/27/13 16:46*	*1*
Dibromofluoromethane	*102*		*79 - 123*		*08/27/13 16:46*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/27/13 16:46*	*1*

Lab Sample ID: LCS 400-189967/1000
Matrix: Solid
Analysis Batch: 189967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	287		ug/Kg		143	43 - 150
Benzene	50.0	52.2		ug/Kg		104	74 - 119
Bromodichloromethane	50.0	54.2		ug/Kg		108	68 - 128
Bromoform	50.0	52.9		ug/Kg		106	54 - 125
Bromomethane	50.0	45.9		ug/Kg		92	25 - 150
Carbon disulfide	50.0	53.6		ug/Kg		107	26 - 150
Carbon tetrachloride	50.0	53.4		ug/Kg		107	70 - 128
Chlorobenzene	50.0	50.8		ug/Kg		102	80 - 116
Chloroethane	50.0	50.9		ug/Kg		102	22 - 150
Chloroform	50.0	52.3		ug/Kg		105	74 - 119
Chloromethane	50.0	51.2		ug/Kg		102	36 - 147
cis-1,2-Dichloroethene	50.0	53.1		ug/Kg		106	68 - 126
cis-1,3-Dichloropropene	50.0	55.0		ug/Kg		110	68 - 125
Cyclohexane	50.0	50.8		ug/Kg		102	62 - 126
Dibromochloromethane	50.0	54.3		ug/Kg		109	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	51.5		ug/Kg		103	57 - 123
1,2-Dichlorobenzene	50.0	50.3		ug/Kg		101	76 - 120
1,3-Dichlorobenzene	50.0	50.5		ug/Kg		101	78 - 118
1,4-Dichlorobenzene	50.0	50.6		ug/Kg		101	77 - 118
Dichlorodifluoromethane	50.0	46.9		ug/Kg		94	44 - 145
1,1-Dichloroethane	50.0	53.8		ug/Kg		108	61 - 128
1,2-Dichloroethane	50.0	54.3		ug/Kg		109	70 - 125
1,1-Dichloroethene	50.0	57.5		ug/Kg		115	62 - 130
1,2-Dichloropropane	50.0	53.1		ug/Kg		106	64 - 129
Diisopropyl ether	50.0	53.8		ug/Kg		108	46 - 144
Ethylbenzene	50.0	52.0		ug/Kg		104	78 - 120
Ethylene Dibromide	50.0	52.8		ug/Kg		106	78 - 119
Ethyl tert-butyl ether	50.0	54.0		ug/Kg		108	60 - 128
2-Hexanone	200	222		ug/Kg		111	54 - 140
Isopropylbenzene	50.0	52.6		ug/Kg		105	78 - 119
Methyl acetate	250	286		ug/Kg		114	52 - 139
Methylcyclohexane	50.0	52.6		ug/Kg		105	65 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-189967/1000
Matrix: Solid
Analysis Batch: 189967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	54.6		ug/Kg		109	45 - 150
Methyl Ethyl Ketone	200	231		ug/Kg		115	62 - 126
methyl isobutyl ketone	200	228		ug/Kg		114	56 - 137
Methyl tert-butyl ether	50.0	53.1		ug/Kg		106	69 - 124
Naphthalene	50.0	52.4		ug/Kg		105	64 - 126
Styrene	50.0	53.1		ug/Kg		106	66 - 132
Tert-amyl methyl ether	50.0	54.3		ug/Kg		109	65 - 124
tert-Butyl alcohol	500	468		ug/Kg		94	12 - 150
1,1,2,2-Tetrachloroethane	50.0	51.7		ug/Kg		103	67 - 120
Tetrachloroethene	50.0	51.3		ug/Kg		103	74 - 126
Toluene	50.0	49.6		ug/Kg		99	76 - 120
trans-1,2-Dichloroethene	50.0	52.8		ug/Kg		106	65 - 130
trans-1,3-Dichloropropene	50.0	53.7		ug/Kg		107	65 - 126
1,2,4-Trichlorobenzene	50.0	51.0		ug/Kg		102	72 - 126
1,1,1-Trichloroethane	50.0	53.4		ug/Kg		107	72 - 121
1,1,2-Trichloroethane	50.0	52.8		ug/Kg		106	75 - 118
Trichloroethene	50.0	54.1		ug/Kg		108	76 - 122
Trichlorofluoromethane	50.0	55.2		ug/Kg		110	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	57.1		ug/Kg		114	74 - 123
Vinyl chloride	50.0	52.5		ug/Kg		105	52 - 134
Xylenes, Total	100	105		ug/Kg		105	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*72 - 122*
Dibromofluoromethane	*103*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 400-189967/5
Matrix: Solid
Analysis Batch: 189967

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	239		ug/Kg		120	43 - 150	18	30
Benzene	50.0	48.1		ug/Kg		96	74 - 119	8	30
Bromodichloromethane	50.0	50.1		ug/Kg		100	68 - 128	8	30
Bromoform	50.0	46.4		ug/Kg		93	54 - 125	13	30
Bromomethane	50.0	39.7		ug/Kg		79	25 - 150	15	30
Carbon disulfide	50.0	49.7		ug/Kg		99	26 - 150	7	30
Carbon tetrachloride	50.0	48.8		ug/Kg		98	70 - 128	9	30
Chlorobenzene	50.0	46.2		ug/Kg		92	80 - 116	9	30
Chloroethane	50.0	47.4		ug/Kg		95	22 - 150	7	30
Chloroform	50.0	48.2		ug/Kg		96	74 - 119	8	30
Chloromethane	50.0	50.9		ug/Kg		102	36 - 147	1	30
cis-1,2-Dichloroethene	50.0	48.4		ug/Kg		97	68 - 126	9	30
cis-1,3-Dichloropropene	50.0	50.2		ug/Kg		100	68 - 125	9	30
Cyclohexane	50.0	48.9		ug/Kg		98	62 - 126	4	30
Dibromochloromethane	50.0	48.2		ug/Kg		96	65 - 131	12	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-189967/5
Matrix: Solid
Analysis Batch: 189967

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane			50.0	46.9		ug/Kg		94	57 - 123	10	30
1,2-Dichlorobenzene			50.0	46.4		ug/Kg		93	76 - 120	8	30
1,3-Dichlorobenzene			50.0	47.4		ug/Kg		95	78 - 118	6	30
1,4-Dichlorobenzene			50.0	46.9		ug/Kg		94	77 - 118	8	30
Dichlorodifluoromethane			50.0	46.4		ug/Kg		93	44 - 145	1	30
1,1-Dichloroethane			50.0	49.5		ug/Kg		99	61 - 128	8	30
1,2-Dichloroethane			50.0	49.6		ug/Kg		99	70 - 125	9	30
1,1-Dichloroethene			50.0	53.3		ug/Kg		107	62 - 130	8	30
1,2-Dichloropropane			50.0	48.6		ug/Kg		97	64 - 129	9	30
Diisopropyl ether			50.0	49.3		ug/Kg		99	46 - 144	9	30
Ethylbenzene			50.0	47.4		ug/Kg		95	78 - 120	9	30
Ethylene Dibromide			50.0	47.4		ug/Kg		95	78 - 119	11	30
Ethyl tert-butyl ether			50.0	50.0		ug/Kg		100	60 - 128	8	30
2-Hexanone			200	190		ug/Kg		95	54 - 140	16	30
Isopropylbenzene			50.0	48.1		ug/Kg		96	78 - 119	9	30
Methyl acetate			250	249		ug/Kg		99	52 - 139	14	30
Methylcyclohexane			50.0	49.0		ug/Kg		98	65 - 126	7	30
Methylene Chloride			50.0	49.7		ug/Kg		99	45 - 150	9	30
Methyl Ethyl Ketone			200	198		ug/Kg		99	62 - 126	15	30
methyl isobutyl ketone			200	197		ug/Kg		99	56 - 137	14	30
Methyl tert-butyl ether			50.0	47.3		ug/Kg		95	69 - 124	11	30
Naphthalene			50.0	47.3		ug/Kg		95	64 - 126	10	30
Styrene			50.0	49.0		ug/Kg		98	66 - 132	8	30
Tert-amyl methyl ether			50.0	49.2		ug/Kg		98	65 - 124	10	30
tert-Butyl alcohol			500	549		ug/Kg		110	12 - 150	16	30
1,1,2,2-Tetrachloroethane			50.0	45.5		ug/Kg		91	67 - 120	13	30
Tetrachloroethene			50.0	47.4		ug/Kg		95	74 - 126	8	30
Toluene			50.0	45.9		ug/Kg		92	76 - 120	8	30
trans-1,2-Dichloroethene			50.0	48.9		ug/Kg		98	65 - 130	8	30
trans-1,3-Dichloropropene			50.0	48.1		ug/Kg		96	65 - 126	11	30
1,2,4-Trichlorobenzene			50.0	46.7		ug/Kg		93	72 - 126	9	30
1,1,1-Trichloroethane			50.0	49.3		ug/Kg		99	72 - 121	8	30
1,1,2-Trichloroethane			50.0	47.4		ug/Kg		95	75 - 118	11	30
Trichloroethene			50.0	49.8		ug/Kg		100	76 - 122	8	30
Trichlorofluoromethane			50.0	54.2		ug/Kg		108	65 - 132	2	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne			50.0	52.5		ug/Kg		105	74 - 123	8	30
Vinyl chloride			50.0	52.0		ug/Kg		104	52 - 134	1	30
Xylenes, Total			100	95.5		ug/Kg		96	70 - 120	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*72 - 122*
Dibromofluoromethane	*101*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190083/4
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/28/13 16:58	1
Benzene	1.0	U	1.0	0.34	ug/L			08/28/13 16:58	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/28/13 16:58	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/28/13 16:58	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/28/13 16:58	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/28/13 16:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 16:58	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/28/13 16:58	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/28/13 16:58	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/28/13 16:58	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/28/13 16:58	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/28/13 16:58	1
2-Hexanone	25	U	25	3.1	ug/L			08/28/13 16:58	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/28/13 16:58	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/28/13 16:58	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/28/13 16:58	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/28/13 16:58	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/28/13 16:58	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/28/13 16:58	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/28/13 16:58	1
Styrene	1.0	U	1.0	1.0	ug/L			08/28/13 16:58	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/28/13 16:58	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/28/13 16:58	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/28/13 16:58	1
Toluene	1.0	U	1.0	0.70	ug/L			08/28/13 16:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 16:58	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/28/13 16:58	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/28/13 16:58	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190083/4
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/28/13 16:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Xylenes, Total	10	U	10	1.6	ug/L			08/28/13 16:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/28/13 16:58*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*08/28/13 16:58*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/28/13 16:58*	*1*

Lab Sample ID: LCS 400-190083/1000
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	273		ug/L		136	24 - 150
Benzene	50.0	50.0		ug/L		100	79 - 120
Bromodichloromethane	50.0	51.1		ug/L		102	75 - 127
Bromoform	50.0	51.1		ug/L		102	65 - 121
Carbon disulfide	50.0	50.1		ug/L		100	41 - 140
Carbon tetrachloride	50.0	50.6		ug/L		101	46 - 141
Chlorobenzene	50.0	49.3		ug/L		99	85 - 120
Chloroethane	50.0	37.6		ug/L		75	37 - 150
Chloroform	50.0	50.5		ug/L		101	73 - 122
Chloromethane	50.0	50.2		ug/L		100	49 - 141
cis-1,2-Dichloroethene	50.0	51.7		ug/L		103	78 - 122
cis-1,3-Dichloropropene	50.0	52.1		ug/L		104	70 - 122
Cyclohexane	50.0	49.6		ug/L		99	69 - 123
Dibromochloromethane	50.0	51.0		ug/L		102	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	50.6		ug/L		101	52 - 124
1,2-Dichlorobenzene	50.0	49.8		ug/L		100	80 - 121
1,3-Dichlorobenzene	50.0	50.2		ug/L		100	77 - 124
1,4-Dichlorobenzene	50.0	50.7		ug/L		101	79 - 119
Dichlorodifluoromethane	50.0	44.8		ug/L		90	27 - 144
1,1-Dichloroethane	50.0	51.5		ug/L		103	75 - 126
1,2-Dichloroethane	50.0	53.0		ug/L		106	69 - 128
1,1-Dichloroethene	50.0	47.9		ug/L		96	50 - 134
1,2-Dichloropropane	50.0	50.8		ug/L		102	77 - 126
Diisopropyl ether	50.0	51.7		ug/L		103	69 - 143
Ethylbenzene	50.0	49.5		ug/L		99	82 - 120
Ethylene Dibromide	50.0	52.9		ug/L		106	82 - 119
Ethyl tert-butyl ether	50.0	51.6		ug/L		103	58 - 142
2-Hexanone	200	224		ug/L		112	60 - 150
Isopropylbenzene	50.0	50.8		ug/L		102	76 - 118
Methyl acetate	250	286		ug/L		114	58 - 150
Methylcyclohexane	50.0	50.3		ug/L		101	72 - 121
Methylene Chloride	50.0	52.0		ug/L		104	70 - 130
Methyl Ethyl Ketone	200	229		ug/L		114	62 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190083/1000
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
methyl isobutyl ketone	200	227		ug/L		114	63 - 150
Methyl tert-butyl ether	50.0	51.0		ug/L		102	70 - 124
Naphthalene	50.0	53.6		ug/L		107	45 - 131
Styrene	50.0	51.8		ug/L		104	79 - 124
Tert-amyl methyl ether	50.0	50.9		ug/L		102	65 - 125
tert-Butyl alcohol	500	580		ug/L		116	44 - 150
1,1,2,2-Tetrachloroethane	50.0	51.4		ug/L		103	68 - 132
Tetrachloroethene	50.0	49.5		ug/L		99	76 - 124
Toluene	50.0	48.5		ug/L		97	81 - 120
trans-1,2-Dichloroethene	50.0	50.9		ug/L		102	70 - 126
trans-1,3-Dichloropropene	50.0	50.6		ug/L		101	64 - 120
1,2,4-Trichlorobenzene	50.0	51.4		ug/L		103	69 - 128
1,1,1-Trichloroethane	50.0	51.0		ug/L		102	66 - 130
1,1,2-Trichloroethane	50.0	51.3		ug/L		103	81 - 117
Trichloroethene	50.0	51.8		ug/L		104	77 - 119
Trichlorofluoromethane	50.0	53.5		ug/L		107	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.3		ug/L		99	45 - 138
Vinyl chloride	50.0	50.7		ug/L		101	60 - 128
Xylenes, Total	100	102		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*78 - 118*
Dibromofluoromethane	*101*		*81 - 121*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-290348/3-A
Matrix: Water
Analysis Batch: 290916

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290348

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	10	U	10	1.1	ug/L		08/22/13 14:46	08/26/13 21:05	1
Acetophenone	10	U	10	0.57	ug/L		08/22/13 14:46	08/26/13 21:05	1
Bis(2-chloroethyl)ether	10	U	10	1.1	ug/L		08/22/13 14:46	08/26/13 21:05	1
bis (2-chloroisopropyl) ether	10	U	10	0.78	ug/L		08/22/13 14:46	08/26/13 21:05	1
Bis(2-chloroethoxy)methane	10	U	10	0.94	ug/L		08/22/13 14:46	08/26/13 21:05	1
Caprolactam	10	U	10	0.79	ug/L		08/22/13 14:46	08/26/13 21:05	1
4-Chloroaniline	20	U	20	2.2	ug/L		08/22/13 14:46	08/26/13 21:05	1
4-Chloro-3-methylphenol	10	U	10	1.0	ug/L		08/22/13 14:46	08/26/13 21:05	1
2-Chlorophenol	10	U	10	0.87	ug/L		08/22/13 14:46	08/26/13 21:05	1
1,1'-Biphenyl	10	U	10	0.58	ug/L		08/22/13 14:46	08/26/13 21:05	1
2-Chloronaphthalene	10	U	10	0.80	ug/L		08/22/13 14:46	08/26/13 21:05	1
2,4-Dichlorophenol	10	U	10	1.1	ug/L		08/22/13 14:46	08/26/13 21:05	1
Acenaphthylene	10	U	10	0.85	ug/L		08/22/13 14:46	08/26/13 21:05	1
2,4-Dimethylphenol	10	U	10	4.0	ug/L		08/22/13 14:46	08/26/13 21:05	1
Acenaphthene	10	U	10	0.76	ug/L		08/22/13 14:46	08/26/13 21:05	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290348/3-A
Matrix: Water
Analysis Batch: 290916

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290348

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dimethyl phthalate	10	U	10	0.99	ug/L		08/22/13 14:46	08/26/13 21:05	1
2,4-Dinitrophenol	50	U	50	10	ug/L		08/22/13 14:46	08/26/13 21:05	1
Dibenzofuran	10	U	10	0.79	ug/L		08/22/13 14:46	08/26/13 21:05	1
2,4-Dinitrotoluene	10	U	10	1.2	ug/L		08/22/13 14:46	08/26/13 21:05	1
2,6-Dinitrotoluene	10	U	10	1.1	ug/L		08/22/13 14:46	08/26/13 21:05	1
Diethyl phthalate	10	U	10	0.88	ug/L		08/22/13 14:46	08/26/13 21:05	1
4-Chlorophenyl phenyl ether	10	U	10	0.84	ug/L		08/22/13 14:46	08/26/13 21:05	1
Fluorene	10	U	10	0.96	ug/L		08/22/13 14:46	08/26/13 21:05	1
4,6-Dinitro-2-methylphenol	50	U	50	10	ug/L		08/22/13 14:46	08/26/13 21:05	1
4-Bromophenyl phenyl ether	10	U	10	0.77	ug/L		08/22/13 14:46	08/26/13 21:05	1
Hexachlorobenzene	10	U	10	0.79	ug/L		08/22/13 14:46	08/26/13 21:05	1
Hexachlorobutadiene	10	U	10	0.62	ug/L		08/22/13 14:46	08/26/13 21:05	1
Atrazine	10	U	10	1.2	ug/L		08/22/13 14:46	08/26/13 21:05	1
Hexachlorocyclopentadiene	10	U	10	2.5	ug/L		08/22/13 14:46	08/26/13 21:05	1
Hexachloroethane	10	U	10	0.76	ug/L		08/22/13 14:46	08/26/13 21:05	1
Anthracene	10	U	10	0.69	ug/L		08/22/13 14:46	08/26/13 21:05	1
Isophorone	10	U	10	0.90	ug/L		08/22/13 14:46	08/26/13 21:05	1
2-Methylnaphthalene	10	U	10	0.78	ug/L		08/22/13 14:46	08/26/13 21:05	1
Carbazole	10	U	10	0.71	ug/L		08/22/13 14:46	08/26/13 21:05	1
2-Methylphenol	10	U	10	0.89	ug/L		08/22/13 14:46	08/26/13 21:05	1
Di-n-butyl phthalate	10	U	10	0.83	ug/L		08/22/13 14:46	08/26/13 21:05	1
3 & 4 Methylphenol	10	U	10	1.3	ug/L		08/22/13 14:46	08/26/13 21:05	1
Fluoranthene	10	U	10	0.74	ug/L		08/22/13 14:46	08/26/13 21:05	1
Naphthalene	10	U	10	0.70	ug/L		08/22/13 14:46	08/26/13 21:05	1
2-Nitroaniline	50	U	50	1.3	ug/L		08/22/13 14:46	08/26/13 21:05	1
Butyl benzyl phthalate	10	U	10	1.2	ug/L		08/22/13 14:46	08/26/13 21:05	1
3,3'-Dichlorobenzidine	60	U	60	30	ug/L		08/22/13 14:46	08/26/13 21:05	1
3-Nitroaniline	50	U	50	5.0	ug/L		08/22/13 14:46	08/26/13 21:05	1
4-Nitroaniline	50	U	50	5.0	ug/L		08/22/13 14:46	08/26/13 21:05	1
Benzo[a]anthracene	10	U	10	0.55	ug/L		08/22/13 14:46	08/26/13 21:05	1
Chrysene	10	U	10	0.51	ug/L		08/22/13 14:46	08/26/13 21:05	1
Nitrobenzene	10	U	10	0.73	ug/L		08/22/13 14:46	08/26/13 21:05	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.6	ug/L		08/22/13 14:46	08/26/13 21:05	1
2-Nitrophenol	10	U	10	0.76	ug/L		08/22/13 14:46	08/26/13 21:05	1
Di-n-octyl phthalate	10	U	10	1.4	ug/L		08/22/13 14:46	08/26/13 21:05	1
4-Nitrophenol	50	U	50	1.9	ug/L		08/22/13 14:46	08/26/13 21:05	1
Benzo[b]fluoranthene	10	U	10	2.6	ug/L		08/22/13 14:46	08/26/13 21:05	1
Benzo[k]fluoranthene	10	U	10	1.2	ug/L		08/22/13 14:46	08/26/13 21:05	1
N-Nitrosodi-n-propylamine	10	U	10	0.72	ug/L		08/22/13 14:46	08/26/13 21:05	1
Benzo[a]pyrene	10	U	10	0.71	ug/L		08/22/13 14:46	08/26/13 21:05	1
N-Nitrosodiphenylamine	10	U	10	0.92	ug/L		08/22/13 14:46	08/26/13 21:05	1
Indeno[1,2,3-cd]pyrene	10	U	10	1.0	ug/L		08/22/13 14:46	08/26/13 21:05	1
Pentachlorophenol	50	U	50	2.0	ug/L		08/22/13 14:46	08/26/13 21:05	1
Dibenz(a,h)anthracene	10	U	10	1.0	ug/L		08/22/13 14:46	08/26/13 21:05	1
Phenanthrene	10	U	10	0.77	ug/L		08/22/13 14:46	08/26/13 21:05	1
Benzo[g,h,i]perylene	10	U	10	0.87	ug/L		08/22/13 14:46	08/26/13 21:05	1
Phenol	10	U	10	0.83	ug/L		08/22/13 14:46	08/26/13 21:05	1
Pyrene	10	U	10	0.63	ug/L		08/22/13 14:46	08/26/13 21:05	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290348/3-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 290916 — **Prep Batch: 290348**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	10	U	10	1.2	ug/L		08/22/13 14:46	08/26/13 21:05	1
2,4,6-Trichlorophenol	10	U	10	0.85	ug/L		08/22/13 14:46	08/26/13 21:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*77*		*39 - 130*	*08/22/13 14:46*	*08/26/13 21:05*	*1*
2-Fluorobiphenyl	*78*		*38 - 130*	*08/22/13 14:46*	*08/26/13 21:05*	*1*
Terphenyl-d14 (Surr)	*94*		*10 - 143*	*08/22/13 14:46*	*08/26/13 21:05*	*1*
Phenol-d5 (Surr)	*71*		*25 - 130*	*08/22/13 14:46*	*08/26/13 21:05*	*1*
2-Fluorophenol (Surr)	*73*		*25 - 130*	*08/22/13 14:46*	*08/26/13 21:05*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*31 - 141*	*08/22/13 14:46*	*08/26/13 21:05*	*1*

Lab Sample ID: LCS 680-290348/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 290916 — **Prep Batch: 290348**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	100	102		ug/L		102	59 - 142
Acetophenone	100	84.5		ug/L		84	54 - 130
Bis(2-chloroethyl)ether	100	77.3		ug/L		77	56 - 130
bis (2-chloroisopropyl) ether	100	75.4		ug/L		75	55 - 130
Bis(2-chloroethoxy)methane	100	88.7		ug/L		89	64 - 130
Caprolactam	100	88.5		ug/L		89	34 - 130
4-Chloroaniline	100	48.0		ug/L		48	42 - 130
4-Chloro-3-methylphenol	100	90.8		ug/L		91	60 - 130
2-Chlorophenol	100	80.8		ug/L		81	57 - 130
1,1'-Biphenyl	100	80.6		ug/L		81	54 - 130
2-Chloronaphthalene	100	78.7		ug/L		79	53 - 130
2,4-Dichlorophenol	100	92.5		ug/L		93	54 - 130
Acenaphthylene	100	88.2		ug/L		88	60 - 130
2,4-Dimethylphenol	100	70.4		ug/L		70	40 - 130
Acenaphthene	100	76.9		ug/L		77	55 - 130
Dimethyl phthalate	100	91.3		ug/L		91	69 - 130
2,4-Dinitrophenol	100	99.6		ug/L		100	20 - 165
Dibenzofuran	100	85.1		ug/L		85	58 - 130
2,4-Dinitrotoluene	100	87.4		ug/L		87	63 - 130
2,6-Dinitrotoluene	100	86.2		ug/L		86	65 - 130
Diethyl phthalate	100	91.0		ug/L		91	70 - 130
4-Chlorophenyl phenyl ether	100	90.1		ug/L		90	57 - 130
Fluorene	100	88.4		ug/L		88	61 - 130
4,6-Dinitro-2-methylphenol	100	96.0		ug/L		96	45 - 134
4-Bromophenyl phenyl ether	100	88.6		ug/L		89	61 - 130
Hexachlorobenzene	100	85.2		ug/L		85	52 - 130
Hexachlorobutadiene	100	80.7		ug/L		81	36 - 130
Atrazine	100	89.2		ug/L		89	66 - 130
Hexachlorocyclopentadiene	100	14.7		ug/L		15	10 - 130
Hexachloroethane	100	66.4		ug/L		66	39 - 130
Anthracene	100	77.9		ug/L		78	61 - 130
Isophorone	100	80.7		ug/L		81	59 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290348/4-A
Matrix: Water
Analysis Batch: 290916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290348

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	100	76.6		ug/L		77	52 - 130
Carbazole	100	85.0		ug/L		85	67 - 130
2-Methylphenol	100	83.0		ug/L		83	55 - 130
Di-n-butyl phthalate	100	85.9		ug/L		86	66 - 130
3 & 4 Methylphenol	100	89.3		ug/L		89	35 - 130
Fluoranthene	100	83.4		ug/L		83	56 - 130
Naphthalene	100	78.9		ug/L		79	50 - 130
2-Nitroaniline	100	87.8		ug/L		88	60 - 130
Butyl benzyl phthalate	100	87.6		ug/L		88	66 - 130
3,3'-Dichlorobenzidine	100	39.1	J	ug/L		39	27 - 130
3-Nitroaniline	100	66.6		ug/L		67	54 - 130
4-Nitroaniline	100	83.4		ug/L		83	54 - 130
Benzo[a]anthracene	100	82.6		ug/L		83	58 - 130
Chrysene	100	87.7		ug/L		88	59 - 130
Nitrobenzene	100	80.3		ug/L		80	56 - 130
Bis(2-ethylhexyl) phthalate	100	85.3		ug/L		85	62 - 130
2-Nitrophenol	100	90.5		ug/L		91	54 - 130
Di-n-octyl phthalate	100	88.5		ug/L		88	64 - 130
4-Nitrophenol	100	76.8		ug/L		77	38 - 130
Benzo[b]fluoranthene	100	81.0		ug/L		81	51 - 130
Benzo[k]fluoranthene	100	89.3		ug/L		89	53 - 130
N-Nitrosodi-n-propylamine	100	89.4		ug/L		89	64 - 130
Benzo[a]pyrene	100	79.7		ug/L		80	61 - 130
N-Nitrosodiphenylamine	100	89.1		ug/L		89	68 - 130
Indeno[1,2,3-cd]pyrene	100	72.2		ug/L		72	47 - 130
Pentachlorophenol	100	99.8		ug/L		100	42 - 138
Dibenz(a,h)anthracene	100	76.0		ug/L		76	55 - 130
Phenanthrene	100	82.6		ug/L		83	62 - 130
Benzo[g,h,i]perylene	100	73.8		ug/L		74	54 - 130
Phenol	100	76.6		ug/L		77	29 - 130
Pyrene	100	83.6		ug/L		84	60 - 130
2,4,5-Trichlorophenol	100	96.0		ug/L		96	61 - 130
2,4,6-Trichlorophenol	100	95.5		ug/L		95	57 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*86*		*39 - 130*
2-Fluorobiphenyl	*85*		*38 - 130*
Terphenyl-d14 (Surr)	*87*		*10 - 143*
Phenol-d5 (Surr)	*78*		*25 - 130*
2-Fluorophenol (Surr)	*78*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*96*		*31 - 141*

Lab Sample ID: 680-93445-D-1-A MS
Matrix: Water
Analysis Batch: 290916

Client Sample ID: 680-93445-D-1-A MS
Prep Type: Total/NA
Prep Batch: 290348

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	9.5		99.1	43.5	F	ug/L		44	59 - 142

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93445-D-1-A MS
Matrix: Water
Analysis Batch: 290916

Client Sample ID: 680-93445-D-1-A MS
Prep Type: Total/NA
Prep Batch: 290348

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetophenone	9.5		99.1	50.3	F	ug/L		51	54 - 130
Bis(2-chloroethyl)ether	9.5		99.1	46.5	F	ug/L		47	56 - 130
bis (2-chloroisopropyl) ether	9.5		99.1	44.8	F	ug/L		45	55 - 130
Bis(2-chloroethoxy)methane	9.5		99.1	49.6	F	ug/L		50	64 - 130
Caprolactam	9.5		99.1	64.3		ug/L		65	34 - 130
4-Chloroaniline	19		99.1	3.86	J F	ug/L		4	42 - 130
4-Chloro-3-methylphenol	9.5		99.1	57.7	F	ug/L		58	60 - 130
2-Chlorophenol	9.5		99.1	51.2	F	ug/L		52	57 - 130
1,1'-Biphenyl	9.5		99.1	52.0	F	ug/L		52	54 - 130
2-Chloronaphthalene	9.5		99.1	51.3	F	ug/L		52	53 - 130
2,4-Dichlorophenol	9.5		99.1	56.5		ug/L		57	54 - 130
Acenaphthylene	9.5		99.1	57.7	F	ug/L		58	60 - 130
2,4-Dimethylphenol	9.5		99.1	55.9		ug/L		56	40 - 130
Acenaphthene	2.0		99.1	52.4	F	ug/L		51	55 - 130
Dimethyl phthalate	9.5		99.1	63.0	F	ug/L		64	69 - 130
2,4-Dinitrophenol	48		99.1	73.0		ug/L		74	20 - 165
Dibenzofuran	9.5		99.1	57.6		ug/L		58	58 - 130
2,4-Dinitrotoluene	9.5		99.1	62.7		ug/L		63	63 - 130
2,6-Dinitrotoluene	9.5		99.1	61.0	F	ug/L		62	65 - 130
Diethyl phthalate	9.5		99.1	65.0	F	ug/L		66	70 - 130
4-Chlorophenyl phenyl ether	9.5		99.1	59.0		ug/L		60	57 - 130
Fluorene	3.7		99.1	59.9	F	ug/L		57	61 - 130
4,6-Dinitro-2-methylphenol	48		99.1	69.8		ug/L		70	45 - 134
4-Bromophenyl phenyl ether	9.5		99.1	58.6	F	ug/L		59	61 - 130
Hexachlorobenzene	9.5		99.1	48.0	F	ug/L		48	52 - 130
Hexachlorobutadiene	9.5		99.1	48.0		ug/L		48	36 - 130
Atrazine	9.5		99.1	18.5	F	ug/L		19	66 - 130
Hexachlorocyclopentadiene	9.5		99.1	15.6		ug/L		16	10 - 130
Hexachloroethane	9.5		99.1	40.6		ug/L		41	39 - 130
Anthracene	9.5		99.1	52.2	F	ug/L		53	61 - 130
Isophorone	9.5		99.1	48.4	F	ug/L		49	59 - 130
2-Methylnaphthalene	9.5		99.1	47.5	F	ug/L		48	52 - 130
Carbazole	9.5		99.1	52.5	F	ug/L		53	67 - 130
2-Methylphenol	9.5		99.1	51.4	F	ug/L		52	55 - 130
Di-n-butyl phthalate	9.5		99.1	58.4	F	ug/L		59	66 - 130
3 & 4 Methylphenol	9.5		99.1	53.7		ug/L		54	35 - 130
Fluoranthene	9.5		99.1	56.0		ug/L		57	56 - 130
Naphthalene	9.5		99.1	47.1	F	ug/L		48	50 - 130
2-Nitroaniline	48		99.1	58.3	F	ug/L		59	60 - 130
Butyl benzyl phthalate	9.5		99.1	58.3	F	ug/L		59	66 - 130
3,3'-Dichlorobenzidine	57		99.1	59	U F	ug/L		0	27 - 130
3-Nitroaniline	48		99.1	6.39	J F	ug/L		6	54 - 130
4-Nitroaniline	48		99.1	20.4	J F	ug/L		21	54 - 130
Benzo[a]anthracene	9.5		99.1	49.1	F	ug/L		50	58 - 130
Chrysene	9.5		99.1	50.3	F	ug/L		51	59 - 130
Nitrobenzene	9.5		99.1	50.3	F	ug/L		51	56 - 130
Bis(2-ethylhexyl) phthalate	9.5		99.1	47.6	F	ug/L		48	62 - 130
2-Nitrophenol	9.5		99.1	52.6	F	ug/L		53	54 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93445-D-1-A MS — **Client Sample ID: 680-93445-D-1-A MS**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 290916 — **Prep Batch: 290348**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Di-n-octyl phthalate	9.5		99.1	49.1	F	ug/L		50	64 - 130
4-Nitrophenol	48		99.1	60.8		ug/L		61	38 - 130
Benzo[b]fluoranthene	9.5		99.1	56.5		ug/L		57	51 - 130
Benzo[k]fluoranthene	9.5		99.1	63.4		ug/L		62	53 - 130
N-Nitrosodi-n-propylamine	9.5		99.1	52.4	F	ug/L		53	64 - 130
Benzo[a]pyrene	9.5		99.1	50.2	F	ug/L		47	61 - 130
N-Nitrosodiphenylamine	9.5		99.1	26.0	F	ug/L		26	68 - 130
Indeno[1,2,3-cd]pyrene	9.5		99.1	38.2	F	ug/L		37	47 - 130
Pentachlorophenol	48		99.1	75.4		ug/L		76	42 - 138
Dibenz(a,h)anthracene	9.5		99.1	53.6	F	ug/L		44	55 - 130
Phenanthrene	9.5		99.1	58.4	F	ug/L		59	62 - 130
Benzo[g,h,i]perylene	9.5		99.1	45.1	F	ug/L		34	54 - 130
Phenol	9.5		99.1	43.1		ug/L		43	29 - 130
Pyrene	9.5		99.1	53.8	F	ug/L		54	60 - 130
2,4,5-Trichlorophenol	9.5		99.1	64.3		ug/L		65	61 - 130
2,4,6-Trichlorophenol	9.5		99.1	63.8		ug/L		64	57 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*48*		*39 - 130*
2-Fluorobiphenyl	*48*		*38 - 130*
Terphenyl-d14 (Surr)	*30*		*10 - 143*
Phenol-d5 (Surr)	*40*		*25 - 130*
2-Fluorophenol (Surr)	*41*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*62*		*31 - 141*

Lab Sample ID: 680-93445-D-1-B MSD — **Client Sample ID: 680-93445-D-1-B MSD**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 290916 — **Prep Batch: 290348**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzaldehyde	9.5		98.5	35.4	F	ug/L		36	59 - 142	20	50
Acetophenone	9.5		98.5	44.7	F	ug/L		45	54 - 130	12	50
Bis(2-chloroethyl)ether	9.5		98.5	40.1	F	ug/L		41	56 - 130	15	50
bis (2-chloroisopropyl) ether	9.5		98.5	39.9	F	ug/L		41	55 - 130	12	50
Bis(2-chloroethoxy)methane	9.5		98.5	32.7	F	ug/L		33	64 - 130	41	50
Caprolactam	9.5		98.5	72.4		ug/L		74	34 - 130	12	50
4-Chloroaniline	19		98.5	20	U F	ug/L		0	42 - 130	NC	50
4-Chloro-3-methylphenol	9.5		98.5	51.7	F	ug/L		52	60 - 130	11	50
2-Chlorophenol	9.5		98.5	44.1	F	ug/L		45	57 - 130	15	50
1,1'-Biphenyl	9.5		98.5	46.1	F	ug/L		47	54 - 130	12	50
2-Chloronaphthalene	9.5		98.5	46.0	F	ug/L		47	53 - 130	11	50
2,4-Dichlorophenol	9.5		98.5	48.6	F	ug/L		49	54 - 130	15	50
Acenaphthylene	9.5		98.5	46.2	F	ug/L		47	60 - 130	22	50
2,4-Dimethylphenol	9.5		98.5	48.7		ug/L		49	40 - 130	14	50
Acenaphthene	2.0		98.5	47.5	F	ug/L		46	55 - 130	10	50
Dimethyl phthalate	9.5		98.5	58.9	F	ug/L		60	69 - 130	7	50
2,4-Dinitrophenol	48		98.5	72.5		ug/L		74	20 - 165	1	50
Dibenzofuran	9.5		98.5	52.2	F	ug/L		53	58 - 130	10	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93445-D-1-B MSD
Matrix: Water
Analysis Batch: 290916

Client Sample ID: 680-93445-D-1-B MSD
Prep Type: Total/NA
Prep Batch: 290348

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-Dinitrotoluene	9.5		98.5	62.6		ug/L		64	63 - 130	0	50
2,6-Dinitrotoluene	9.5		98.5	56.3	F	ug/L		57	65 - 130	8	50
Diethyl phthalate	9.5		98.5	62.2	F	ug/L		63	70 - 130	4	50
4-Chlorophenyl phenyl ether	9.5		98.5	54.7	F	ug/L		56	57 - 130	8	50
Fluorene	3.7		98.5	55.6	F	ug/L		53	61 - 130	7	50
4,6-Dinitro-2-methylphenol	48		98.5	70.7		ug/L		72	45 - 134	1	50
4-Bromophenyl phenyl ether	9.5		98.5	58.1	F	ug/L		59	61 - 130	1	50
Hexachlorobenzene	9.5		98.5	56.0		ug/L		57	52 - 130	15	50
Hexachlorobutadiene	9.5		98.5	43.9		ug/L		45	36 - 130	9	50
Atrazine	9.5		98.5	6.40	J F	ug/L		7	66 - 130	97	50
Hexachlorocyclopentadiene	9.5		98.5	12.6		ug/L		13	10 - 130	21	50
Hexachloroethane	9.5		98.5	37.5	F	ug/L		38	39 - 130	8	50
Anthracene	9.5		98.5	54.4	F	ug/L		55	61 - 130	4	50
Isophorone	9.5		98.5	44.7	F	ug/L		45	59 - 130	8	50
2-Methylnaphthalene	9.5		98.5	42.1	F	ug/L		43	52 - 130	12	50
Carbazole	9.5		98.5	40.8	F	ug/L		41	67 - 130	25	50
2-Methylphenol	9.5		98.5	44.6	F	ug/L		45	55 - 130	14	50
Di-n-butyl phthalate	9.5		98.5	64.6		ug/L		66	66 - 130	10	50
3 & 4 Methylphenol	9.5		98.5	47.3		ug/L		48	35 - 130	13	50
Fluoranthene	9.5		98.5	63.1		ug/L		64	56 - 130	12	50
Naphthalene	9.5		98.5	43.3	F	ug/L		44	50 - 130	8	50
2-Nitroaniline	48		98.5	54.4	F	ug/L		55	60 - 130	7	50
Butyl benzyl phthalate	9.5		98.5	67.8		ug/L		69	66 - 130	15	50
3,3'-Dichlorobenzidine	57		98.5	59	U F	ug/L		0	27 - 130	NC	50
3-Nitroaniline	48		98.5	49	U F	ug/L		0	54 - 130	NC	50
4-Nitroaniline	48		98.5	10.7	J F	ug/L		11	54 - 130	62	50
Benzo[a]anthracene	9.5		98.5	62.6		ug/L		64	58 - 130	24	50
Chrysene	9.5		98.5	67.0		ug/L		68	59 - 130	28	50
Nitrobenzene	9.5		98.5	42.6	F	ug/L		43	56 - 130	16	50
Bis(2-ethylhexyl) phthalate	9.5		98.5	67.3		ug/L		68	62 - 130	34	50
2-Nitrophenol	9.5		98.5	47.6	F	ug/L		48	54 - 130	10	50
Di-n-octyl phthalate	9.5		98.5	69.2		ug/L		70	64 - 130	34	50
4-Nitrophenol	48		98.5	62.1		ug/L		63	38 - 130	2	50
Benzo[b]fluoranthene	9.5		98.5	85.0		ug/L		86	51 - 130	40	50
Benzo[k]fluoranthene	9.5		98.5	83.0		ug/L		82	53 - 130	27	50
N-Nitrosodi-n-propylamine	9.5		98.5	47.4	F	ug/L		48	64 - 130	10	50
Benzo[a]pyrene	9.5		98.5	70.9		ug/L		69	61 - 130	34	50
N-Nitrosodiphenylamine	9.5		98.5	20.8	F	ug/L		21	68 - 130	22	50
Indeno[1,2,3-cd]pyrene	9.5		98.5	54.7		ug/L		54	47 - 130	36	50
Pentachlorophenol	48		98.5	76.5		ug/L		78	42 - 138	1	50
Dibenz(a,h)anthracene	9.5		98.5	77.7		ug/L		69	55 - 130	37	50
Phenanthrene	9.5		98.5	58.8	F	ug/L		60	62 - 130	1	50
Benzo[g,h,i]perylene	9.5		98.5	69.3		ug/L		59	54 - 130	42	50
Phenol	9.5		98.5	37.5		ug/L		38	29 - 130	14	50
Pyrene	9.5		98.5	62.1		ug/L		63	60 - 130	14	50
2,4,5-Trichlorophenol	9.5		98.5	60.3		ug/L		61	61 - 130	7	50
2,4,6-Trichlorophenol	9.5		98.5	57.1		ug/L		58	57 - 130	11	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93445-D-1-B MSD
Matrix: Water
Analysis Batch: 290916

Client Sample ID: 680-93445-D-1-B MSD
Prep Type: Total/NA
Prep Batch: 290348

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*47*		*39 - 130*
2-Fluorobiphenyl	*50*		*38 - 130*
Terphenyl-d14 (Surr)	*42*		*10 - 143*
Phenol-d5 (Surr)	*41*		*25 - 130*
2-Fluorophenol (Surr)	*41*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*71*		*31 - 141*

Lab Sample ID: MB 680-290598/21-A
Matrix: Solid
Analysis Batch: 291413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	58	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Acetophenone	330	U	330	28	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Bis(2-chloroethyl)ether	330	U	330	45	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Bis(2-chloroethoxy)methane	330	U	330	39	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Caprolactam	330	U	330	66	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
4-Chloroaniline	660	U	660	52	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2-Chlorophenol	330	U	330	40	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
1,1'-Biphenyl	740	U	740	740	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Acenaphthylene	330	U	330	36	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2,4-Dimethylphenol	330	U	330	44	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Acenaphthene	330	U	330	41	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Dimethyl phthalate	330	U	330	34	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2,4-Dinitrophenol	1700	U	1700	830	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Dibenzofuran	330	U	330	33	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2,4-Dinitrotoluene	330	U	330	49	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2,6-Dinitrotoluene	330	U	330	42	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Diethyl phthalate	330	U	330	37	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
4-Chlorophenyl phenyl ether	330	U	330	44	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Fluorene	330	U	330	36	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Hexachlorobenzene	330	U	330	39	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Atrazine	330	U	330	23	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Hexachlorocyclopentadiene	330	U	330	41	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Hexachloroethane	330	U	330	28	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Anthracene	330	U	330	25	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Isophorone	330	U	330	33	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2-Methylnaphthalene	330	U	330	38	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Carbazole	330	U	330	30	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2-Methylphenol	330	U	330	27	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		08/23/13 13:40	08/30/13 00:17	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290598/21-A
Matrix: Solid
Analysis Batch: 291413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	330	U	330	43	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Fluoranthene	330	U	330	32	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Naphthalene	330	U	330	30	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2-Nitroaniline	1700	U	1700	45	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
3,3'-Dichlorobenzidine	660	U	660	28	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
3-Nitroaniline	1700	U	1700	46	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
4-Nitroaniline	1700	U	1700	49	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Chrysene	330	U	330	21	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Nitrobenzene	330	U	330	26	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2-Nitrophenol	330	U	330	41	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Benzo[b]fluoranthene	330	U	330	38	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Benzo[k]fluoranthene	330	U	330	65	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Benzo[a]pyrene	330	U	330	52	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Indeno[1,2,3-cd]pyrene	65.0	J	330	28	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Dibenz(a,h)anthracene	63.0	J	330	39	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Phenanthrene	330	U	330	27	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Benzo[g,h,i]perylene	69.4	J	330	22	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Phenol	330	U	330	34	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
Pyrene	330	U	330	27	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		08/23/13 13:40	08/30/13 00:17	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		08/23/13 13:40	08/30/13 00:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*68*		*46 - 130*	*08/23/13 13:40*	*08/30/13 00:17*	*1*
2-Fluorobiphenyl	*77*		*58 - 130*	*08/23/13 13:40*	*08/30/13 00:17*	*1*
Terphenyl-d14 (Surr)	*95*		*60 - 130*	*08/23/13 13:40*	*08/30/13 00:17*	*1*
Phenol-d5 (Surr)	*62*		*49 - 130*	*08/23/13 13:40*	*08/30/13 00:17*	*1*
2-Fluorophenol (Surr)	*66*		*40 - 130*	*08/23/13 13:40*	*08/30/13 00:17*	*1*
2,4,6-Tribromophenol (Surr)	*73*		*58 - 130*	*08/23/13 13:40*	*08/30/13 00:17*	*1*

Lab Sample ID: LCS 680-290598/22-A
Matrix: Solid
Analysis Batch: 291413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3290	418		ug/Kg		13	10 - 130
Acetophenone	3290	2110		ug/Kg		64	42 - 130
Bis(2-chloroethyl)ether	3290	2050		ug/Kg		62	42 - 130
bis (2-chloroisopropyl) ether	3290	2000		ug/Kg		61	44 - 130
Bis(2-chloroethoxy)methane	3290	2280		ug/Kg		69	56 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290598/22-A
Matrix: Solid
Analysis Batch: 291413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Caprolactam	3290	2510		ug/Kg		76	52 - 130
4-Chloroaniline	3290	779	*	ug/Kg		24	36 - 130
4-Chloro-3-methylphenol	3290	2530		ug/Kg		77	52 - 130
2-Chlorophenol	3290	2270		ug/Kg		69	51 - 130
1,1'-Biphenyl	3290	2480		ug/Kg		75	57 - 130
2-Chloronaphthalene	3290	2400		ug/Kg		73	55 - 130
2,4-Dichlorophenol	3290	2530		ug/Kg		77	53 - 130
Acenaphthylene	3290	2620		ug/Kg		79	58 - 130
2,4-Dimethylphenol	3290	2390		ug/Kg		73	47 - 130
Acenaphthene	3290	2250		ug/Kg		68	58 - 130
Dimethyl phthalate	3290	2510		ug/Kg		76	63 - 130
2,4-Dinitrophenol	3290	1740		ug/Kg		53	10 - 154
Dibenzofuran	3290	2590		ug/Kg		79	56 - 130
2,4-Dinitrotoluene	3290	2590		ug/Kg		79	55 - 130
2,6-Dinitrotoluene	3290	2460		ug/Kg		75	57 - 130
Diethyl phthalate	3290	2640		ug/Kg		80	62 - 130
4-Chlorophenyl phenyl ether	3290	2780		ug/Kg		84	61 - 130
Fluorene	3290	2560		ug/Kg		78	58 - 130
4,6-Dinitro-2-methylphenol	3290	2340		ug/Kg		71	14 - 137
4-Bromophenyl phenyl ether	3290	2790		ug/Kg		85	65 - 130
Hexachlorobenzene	3290	2680		ug/Kg		81	59 - 130
Hexachlorobutadiene	3290	2940		ug/Kg		89	47 - 130
Atrazine	3290	2310		ug/Kg		70	54 - 141
Hexachlorocyclopentadiene	3290	2680		ug/Kg		82	35 - 130
Hexachloroethane	3290	2100		ug/Kg		64	44 - 130
Anthracene	3290	2420		ug/Kg		73	60 - 130
Isophorone	3290	2140		ug/Kg		65	48 - 130
2-Methylnaphthalene	3290	2440		ug/Kg		74	55 - 130
Carbazole	3290	2580		ug/Kg		78	60 - 130
2-Methylphenol	3290	2290		ug/Kg		69	49 - 130
Di-n-butyl phthalate	3290	2640		ug/Kg		80	65 - 130
3 & 4 Methylphenol	3290	2300		ug/Kg		70	50 - 130
Fluoranthene	3290	2690		ug/Kg		82	62 - 130
Naphthalene	3290	2480		ug/Kg		75	54 - 130
2-Nitroaniline	3290	2320		ug/Kg		70	52 - 130
Butyl benzyl phthalate	3290	2480		ug/Kg		75	65 - 134
3,3'-Dichlorobenzidine	3290	1800		ug/Kg		55	45 - 130
3-Nitroaniline	3290	1910		ug/Kg		58	42 - 130
4-Nitroaniline	3290	2230		ug/Kg		68	49 - 130
Benzo[a]anthracene	3290	2600		ug/Kg		79	62 - 130
Chrysene	3290	2660		ug/Kg		81	62 - 130
Nitrobenzene	3290	2310		ug/Kg		70	43 - 130
Bis(2-ethylhexyl) phthalate	3290	2510		ug/Kg		76	62 - 132
2-Nitrophenol	3290	2510		ug/Kg		76	45 - 130
Di-n-octyl phthalate	3290	2670		ug/Kg		81	59 - 146
4-Nitrophenol	3290	2410		ug/Kg		73	30 - 130
Benzo[b]fluoranthene	3290	2580		ug/Kg		78	53 - 130
Benzo[k]fluoranthene	3290	2500		ug/Kg		76	57 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290598/22-A
Matrix: Solid
Analysis Batch: 291413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Nitrosodi-n-propylamine	3290	2160		ug/Kg		66	48 - 130
Benzo[a]pyrene	3290	2410		ug/Kg		73	68 - 131
N-Nitrosodiphenylamine	3290	2580		ug/Kg		78	62 - 130
Indeno[1,2,3-cd]pyrene	3290	2170		ug/Kg		66	52 - 130
Pentachlorophenol	3290	2570		ug/Kg		78	38 - 131
Dibenz(a,h)anthracene	3290	2240		ug/Kg		68	56 - 130
Phenanthrene	3290	2540		ug/Kg		77	61 - 130
Benzo[g,h,i]perylene	3290	2170		ug/Kg		66	54 - 130
Phenol	3290	2160		ug/Kg		66	46 - 130
Pyrene	3290	2450		ug/Kg		74	59 - 130
2,4,5-Trichlorophenol	3290	2750		ug/Kg		84	60 - 130
2,4,6-Trichlorophenol	3290	2660		ug/Kg		81	53 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*70*		*46 - 130*
2-Fluorobiphenyl	*77*		*58 - 130*
Terphenyl-d14 (Surr)	*82*		*60 - 130*
Phenol-d5 (Surr)	*65*		*49 - 130*
2-Fluorophenol (Surr)	*68*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*84*		*58 - 130*

Lab Sample ID: 680-93445-5 MSD
Matrix: Solid
Analysis Batch: 291673

Client Sample ID: SB01-08 (1.5-2.5)
Prep Type: Total/NA
Prep Batch: 290598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzaldehyde	420		4200	1570		ug/Kg	☼	37	10 - 130	5	50
Acetophenone	420		4200	1870		ug/Kg	☼	45	42 - 130	9	50
Bis(2-chloroethyl)ether	420		4200	1930		ug/Kg	☼	46	42 - 130	2	50
bis (2-chloroisopropyl) ether	420		4200	1920		ug/Kg	☼	46	44 - 130	6	50
Bis(2-chloroethoxy)methane	420		4200	1990	F	ug/Kg	☼	47	56 - 130	11	50
Caprolactam	420		4200	1580	F	ug/Kg	☼	38	52 - 130	6	50
4-Chloroaniline	830		4200	746	J F	ug/Kg	☼	18	36 - 130	8	50
4-Chloro-3-methylphenol	420		4200	1750	F	ug/Kg	☼	42	52 - 130	17	50
2-Chlorophenol	420		4200	1560	F	ug/Kg	☼	37	51 - 130	1	50
1,1'-Biphenyl	930		4200	1950	F	ug/Kg	☼	46	57 - 130	5	50
2-Chloronaphthalene	420		4200	1830	F	ug/Kg	☼	44	55 - 130	7	50
2,4-Dichlorophenol	420		4200	1710	F	ug/Kg	☼	41	53 - 130	3	50
Acenaphthylene	420		4200	1730	F	ug/Kg	☼	41	58 - 130	2	50
2,4-Dimethylphenol	420		4200	417	J F	ug/Kg	☼	10	47 - 130	12	50
Acenaphthene	420		4200	1760	F	ug/Kg	☼	42	58 - 130	4	50
Dimethyl phthalate	420		4200	2110	F	ug/Kg	☼	50	63 - 130	5	50
2,4-Dinitrophenol	2100		4200	2100	U F	ug/Kg	☼	0	10 - 154	NC	50
Dibenzofuran	420		4200	1930	F	ug/Kg	☼	46	56 - 130	3	50
2,4-Dinitrotoluene	420		4200	1740	F	ug/Kg	☼	42	55 - 130	11	50
2,6-Dinitrotoluene	420		4200	1890	F	ug/Kg	☼	45	57 - 130	5	50
Diethyl phthalate	420		4200	2170	F	ug/Kg	☼	52	62 - 130	1	50
4-Chlorophenyl phenyl ether	420		4200	2180	F	ug/Kg	☼	52	61 - 130	3	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93445-5 MSD
Matrix: Solid
Analysis Batch: 291673

Client Sample ID: SB01-08 (1.5-2.5)
Prep Type: Total/NA
Prep Batch: 290598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene	420		4200	1960	F	ug/Kg	☼	47	58 - 130	1	50
4,6-Dinitro-2-methylphenol	2100		4200	1210	J	ug/Kg	☼	29	14 - 137	25	50
4-Bromophenyl phenyl ether	420		4200	2130	F	ug/Kg	☼	51	65 - 130	7	50
Hexachlorobenzene	420		4200	2120	F	ug/Kg	☼	51	59 - 130	2	50
Hexachlorobutadiene	420		4200	2440		ug/Kg	☼	58	47 - 130	1	50
Atrazine	420		4200	1700	F	ug/Kg	☼	41	54 - 141	3	50
Hexachlorocyclopentadiene	420		4200	400	J F	ug/Kg	☼	10	35 - 130	43	50
Hexachloroethane	420		4200	1840		ug/Kg	☼	44	44 - 130	2	50
Anthracene	420		4200	1730	F	ug/Kg	☼	41	60 - 130	1	50
Isophorone	420		4200	1940	F	ug/Kg	☼	46	48 - 130	4	50
2-Methylnaphthalene	420		4200	2130	F	ug/Kg	☼	51	55 - 130	14	50
Carbazole	420		4200	1850	F	ug/Kg	☼	44	60 - 130	5	50
2-Methylphenol	420		4200	917	F	ug/Kg	☼	22	49 - 130	2	50
Di-n-butyl phthalate	420		4200	2250	F	ug/Kg	☼	54	65 - 130	10	50
3 & 4 Methylphenol	420		4200	934	F	ug/Kg	☼	22	50 - 130	4	50
Fluoranthene	420		4200	2120	F	ug/Kg	☼	51	62 - 130	5	50
Naphthalene	420		4200	2130	F	ug/Kg	☼	51	54 - 130	2	50
2-Nitroaniline	2100		4200	1750	J F	ug/Kg	☼	42	52 - 130	1	50
Butyl benzyl phthalate	420		4200	1980	F	ug/Kg	☼	47	65 - 134	8	50
3,3'-Dichlorobenzidine	830		4200	830	U F	ug/Kg	☼	0	45 - 130	NC	50
3-Nitroaniline	2100		4200	1250	J F	ug/Kg	☼	30	42 - 130	10	50
4-Nitroaniline	2100		4200	1270	J F	ug/Kg	☼	30	49 - 130	9	50
Benzo[a]anthracene	420		4200	1710	F	ug/Kg	☼	41	62 - 130	1	50
Chrysene	420		4200	1750	F	ug/Kg	☼	42	62 - 130	1	50
Nitrobenzene	420		4200	1840		ug/Kg	☼	44	43 - 130	13	50
Bis(2-ethylhexyl) phthalate	420		4200	2140	F	ug/Kg	☼	51	62 - 132	13	50
2-Nitrophenol	420		4200	1870		ug/Kg	☼	45	45 - 130	5	50
Di-n-octyl phthalate	420		4200	2340	F	ug/Kg	☼	56	59 - 146	13	50
4-Nitrophenol	2100		4200	1890	J	ug/Kg	☼	45	30 - 130	5	50
Benzo[b]fluoranthene	420		4200	1680	F	ug/Kg	☼	40	53 - 130	3	50
Benzo[k]fluoranthene	420		4200	1520	F	ug/Kg	☼	36	57 - 130	4	50
N-Nitrosodi-n-propylamine	420		4200	1990	F	ug/Kg	☼	47	48 - 130	2	50
Benzo[a]pyrene	420		4200	1350	F	ug/Kg	☼	32	68 - 131	0	50
N-Nitrosodiphenylamine	420		4200	1420	F	ug/Kg	☼	34	62 - 130	3	50
Indeno[1,2,3-cd]pyrene	420		4200	1360	F	ug/Kg	☼	32	52 - 130	4	50
Pentachlorophenol	2100		4200	1910	J	ug/Kg	☼	46	38 - 131	6	50
Dibenz(a,h)anthracene	420		4200	1430	F	ug/Kg	☼	34	56 - 130	8	50
Phenanthrene	420		4200	2070	F	ug/Kg	☼	49	61 - 130	3	50
Benzo[g,h,i]perylene	420		4200	1290	F	ug/Kg	☼	31	54 - 130	6	50
Phenol	420		4200	1440	F	ug/Kg	☼	34	46 - 130	4	50
Pyrene	420		4200	1680	F	ug/Kg	☼	40	59 - 130	1	50
2,4,5-Trichlorophenol	420		4200	1980	F	ug/Kg	☼	47	60 - 130	5	50
2,4,6-Trichlorophenol	420		4200	1560	F	ug/Kg	☼	37	53 - 130	7	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*44*	*X*	*46 - 130*
2-Fluorobiphenyl	*47*	*X*	*58 - 130*
Terphenyl-d14 (Surr)	*43*	*X*	*60 - 130*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93445-5 MSD
Matrix: Solid
Analysis Batch: 291673

Client Sample ID: SB01-08 (1.5-2.5)
Prep Type: Total/NA
Prep Batch: 290598

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Phenol-d5 (Surr)	*30*	*X*	*49 - 130*
2-Fluorophenol (Surr)	*28*	*X*	*40 - 130*
2,4,6-Tribromophenol (Surr)	*20*	*X*	*58 - 130*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 680-290726/5
Matrix: Solid
Analysis Batch: 290726

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/24/13 13:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*90*		*70 - 131*		*08/24/13 13:39*	*1*

Lab Sample ID: LCS 680-290726/6
Matrix: Solid
Analysis Batch: 290726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	905		ug/Kg		91	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*91*		*70 - 131*

Lab Sample ID: LCSD 680-290726/7
Matrix: Solid
Analysis Batch: 290726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	1290		ug/Kg		129	64 - 133	35	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*87*		*70 - 131*

Lab Sample ID: MB 680-290745/6
Matrix: Solid
Analysis Batch: 290745

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/26/13 11:49	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: MB 680-290745/6
Matrix: Solid
Analysis Batch: 290745

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	85		70 - 131		08/26/13 11:49	1

Lab Sample ID: LCS 680-290745/7
Matrix: Solid
Analysis Batch: 290745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	934		ug/Kg		93	64 - 133		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	83		70 - 131

Lab Sample ID: LCSD 680-290745/8
Matrix: Solid
Analysis Batch: 290745

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	927		ug/Kg		93	64 - 133	1	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	89		70 - 131

Lab Sample ID: MB 680-290971/9
Matrix: Solid
Analysis Batch: 290971

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	5000	U	5000	380	ug/Kg			08/27/13 11:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		70 - 131		08/27/13 11:40	1

Lab Sample ID: LCS 680-290971/8
Matrix: Solid
Analysis Batch: 290971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			40000	38900		ug/Kg		97	64 - 133		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	95		70 - 131

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCSD 680-290971/11
Matrix: Solid
Analysis Batch: 290971

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			40000	39900		ug/Kg		100	64 - 133	3	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*105*		*70 - 131*

Lab Sample ID: MB 680-291184/5
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	12.8	J	50	11	ug/L			08/28/13 10:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*92*		*70 - 130*		*08/28/13 10:51*	*1*

Lab Sample ID: LCS 680-291184/6
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			200	156		ug/L		78	70 - 148		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*87*		*70 - 130*

Lab Sample ID: LCSD 680-291184/7
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			200	156		ug/L		78	70 - 148	0	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*88*		*70 - 130*

Lab Sample ID: MB 680-291258/7
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/28/13 16:41	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: MB 680-291258/7
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	99		70 - 131		08/28/13 16:41	1

Lab Sample ID: LCS 680-291258/6
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1000	995		ug/Kg		99	64 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	90		70 - 131

Lab Sample ID: LCSD 680-291258/8
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1000	954		ug/Kg		95	64 - 133	4	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	86		70 - 131

Lab Sample ID: MB 680-291393/7
Matrix: Solid
Analysis Batch: 291393

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/29/13 11:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	90		70 - 131		08/29/13 11:46	1

Lab Sample ID: LCS 680-291393/8
Matrix: Solid
Analysis Batch: 291393

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1000	878		ug/Kg		88	64 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	89		70 - 131

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCSD 680-291393/9
Matrix: Solid
Analysis Batch: 291393

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	1020		ug/Kg		102	64 - 133	15	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*89*		*70 - 131*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 490-103240/1-A
Matrix: Solid
Analysis Batch: 103532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5240		5000	1400	ug/Kg		08/28/13 11:44	08/29/13 22:51	1
ORO C24-C40	7350		5000	1400	ug/Kg		08/28/13 11:44	08/29/13 22:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*84*		*50 - 150*	*08/28/13 11:44*	*08/29/13 22:51*	*1*

Lab Sample ID: LCS 490-103240/2-A
Matrix: Solid
Analysis Batch: 103532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103240

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]			40000	35700		ug/Kg		89	54 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*98*		*50 - 150*

Lab Sample ID: MB 490-104093/1-A
Matrix: Water
Analysis Batch: 104122

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104093

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	100	U	100	28	ug/L		08/31/13 08:40	08/31/13 18:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*84*		*50 - 150*	*08/31/13 08:40*	*08/31/13 18:48*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: LCS 490-104093/2-A
Matrix: Water
Analysis Batch: 104122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 104093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	1000	841		ug/L		84	46 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*93*		*50 - 150*

Lab Sample ID: MB 490-104094/1-A
Matrix: Solid
Analysis Batch: 104122

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104094

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5000	U	5000	1400	ug/Kg		08/31/13 08:51	08/31/13 20:24	1
ORO C24-C40	3660	J	5000	1400	ug/Kg		08/31/13 08:51	08/31/13 20:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*78*		*50 - 150*	*08/31/13 08:51*	*08/31/13 20:24*	*1*

Lab Sample ID: LCS 490-104094/2-A
Matrix: Solid
Analysis Batch: 104122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 104094

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	40000	33600		ug/Kg		84	54 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*92*		*50 - 150*

Lab Sample ID: 680-93445-6 MS
Matrix: Solid
Analysis Batch: 104122

Client Sample ID: SB01-08 (9.0-10.0)
Prep Type: Total/NA
Prep Batch: 104094

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	1800	J	49300	38700		ug/Kg	☼	75	10 - 142

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl (Surr)	*85*		*50 - 150*

Lab Sample ID: 680-93445-6 MSD
Matrix: Solid
Analysis Batch: 104122

Client Sample ID: SB01-08 (9.0-10.0)
Prep Type: Total/NA
Prep Batch: 104094

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	1800	J	48800	36100		ug/Kg	☼	70	10 - 142	7	47

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: 680-93445-6 MSD
Matrix: Solid
Analysis Batch: 104122

Client Sample ID: SB01-08 (9.0-10.0)
Prep Type: Total/NA
Prep Batch: 104094

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl (Surr)	*79*		*50 - 150*

GC/MS VOA

Prep Batch: 189677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	5035	
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	5035	
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	5035	
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	5035	
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	5035	
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	5035	
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	5035	
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	5035	
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	5035	
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	5035	
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	5035	

Analysis Batch: 189967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	8260B	189677
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	8260B	189677
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	8260B	189677
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	8260B	189677
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	8260B	189677
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	8260B	189677
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	8260B	189677
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	8260B	189677
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	8260B	189677
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	8260B	189677
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	8260B	189677
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	8260B	189677
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	8260B	189677
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	8260B	189677
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	8260B	189677
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	8260B	189677
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	8260B	189677
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	8260B	189677
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	8260B	189677
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	8260B	189677
LCS 400-189967/1000	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 400-189967/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 400-189967/4	Method Blank	Total/NA	Solid	8260B	

Analysis Batch: 190083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-1	PZ01-04	Total/NA	Water	8260B	
680-93445-2	PZ01-09	Total/NA	Water	8260B	

GC/MS VOA (Continued)

Analysis Batch: 190083 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-25	TB 130820-1	Total/NA	Water	8260B	
680-93445-26	TB 130820-2	Total/NA	Water	8260B	
LCS 400-190083/1000	Lab Control Sample	Total/NA	Water	8260B	
MB 400-190083/4	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 290348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-1	PZ01-04	Total/NA	Water	3520C	
680-93445-2	PZ01-09	Total/NA	Water	3520C	
680-93445-D-1-A MS	680-93445-D-1-A MS	Total/NA	Water	3520C	
680-93445-D-1-B MSD	680-93445-D-1-B MSD	Total/NA	Water	3520C	
LCS 680-290348/4-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-290348/3-A	Method Blank	Total/NA	Water	3520C	

Prep Batch: 290598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	3546	
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	3546	
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	3546	
680-93445-5 MSD	SB01-08 (1.5-2.5)	Total/NA	Solid	3546	
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	3546	
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	3546	
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	3546	
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	3546	
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	3546	
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	3546	
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	3546	
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	3546	
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	3546	
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	3546	
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	3546	
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	3546	
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	3546	
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	3546	
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	3546	
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	3546	
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	3546	
LCS 680-290598/22-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-290598/21-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 290916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-1	PZ01-04	Total/NA	Water	8270D	290348
680-93445-2	PZ01-09	Total/NA	Water	8270D	290348
680-93445-D-1-A MS	680-93445-D-1-A MS	Total/NA	Water	8270D	290348
680-93445-D-1-B MSD	680-93445-D-1-B MSD	Total/NA	Water	8270D	290348
LCS 680-290348/4-A	Lab Control Sample	Total/NA	Water	8270D	290348
MB 680-290348/3-A	Method Blank	Total/NA	Water	8270D	290348

GC/MS Semi VOA (Continued)

Analysis Batch: 291413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	8270D	290598
LCS 680-290598/22-A	Lab Control Sample	Total/NA	Solid	8270D	290598
MB 680-290598/21-A	Method Blank	Total/NA	Solid	8270D	290598

Analysis Batch: 291613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	8270D	290598

Analysis Batch: 291673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	8270D	290598
680-93445-5 MSD	SB01-08 (1.5-2.5)	Total/NA	Solid	8270D	290598
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	8270D	290598
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	8270D	290598
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	8270D	290598
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	8270D	290598
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	8270D	290598
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	8270D	290598
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	8270D	290598
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	8270D	290598
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	8270D	290598
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	8270D	290598
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	8270D	290598
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	8270D	290598
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	8270D	290598
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	8270D	290598

Analysis Batch: 291919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	8270D	290598
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	8270D	290598
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	8270D	290598

GC VOA

Prep Batch: 290368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	5035	
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	5035	
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	5035	
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	5035	
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	5035	
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	5035	
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	5035	
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	5035	
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	5035	

GC VOA (Continued)

Prep Batch: 290368 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	5035	
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	5035	
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	5035	
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	5035	
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	5035	

Analysis Batch: 290726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	8015C	290368
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	8015C	290368
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	8015C	290368
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	8015C	290368
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	8015C	290368
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	8015C	290368
LCS 680-290726/6	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290726/7	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290726/5	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 290745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	8015C	290368
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	8015C	290368
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	8015C	290368
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	8015C	290368
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	8015C	290368
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	8015C	290368
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	8015C	290368
LCS 680-290745/7	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290745/8	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290745/6	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 290971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	8015C	290368
LCS 680-290971/8	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290971/11	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290971/9	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 291184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-1	PZ01-04	Total/NA	Water	8015C	
680-93445-2	PZ01-09	Total/NA	Water	8015C	
LCS 680-291184/6	Lab Control Sample	Total/NA	Water	8015C	
LCSD 680-291184/7	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 680-291184/5	Method Blank	Total/NA	Water	8015C	

Analysis Batch: 291258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	8015C	290368

GC VOA (Continued)

Analysis Batch: 291258 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	8015C	290368
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	8015C	290368
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	8015C	290368
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	8015C	290368
LCS 680-291258/6	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-291258/8	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-291258/7	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 291393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	8015C	290368
LCS 680-291393/8	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-291393/9	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-291393/7	Method Blank	Total/NA	Solid	8015C	

GC Semi VOA

Prep Batch: 103240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	3550C	
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	3550C	
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	3550C	
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	3550C	
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	3550C	
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	3550C	
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	3550C	
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	3550C	
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	3550C	
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	3550C	
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	3550C	
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	3550C	
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	3550C	
LCS 490-103240/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-103240/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 103532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-7	SB01-09 (0.0-1.0)	Total/NA	Solid	8015C	103240
680-93445-8	SB01-09 (4.0-5.0)	Total/NA	Solid	8015C	103240
680-93445-9	SB01-10 (0.0-1.0)	Total/NA	Solid	8015C	103240
680-93445-10	SB01-10 (4.0-5.0)	Total/NA	Solid	8015C	103240
680-93445-11	SB02-01 (0.0-1.0)	Total/NA	Solid	8015C	103240
680-93445-12	SB02-01 (7.0-8.0)	Total/NA	Solid	8015C	103240
680-93445-14	SB02-02 (4.5-5.5)	Total/NA	Solid	8015C	103240
680-93445-15	SB02-03 (0.5-1.5)	Total/NA	Solid	8015C	103240
680-93445-16	SB02-03 (5.0-6.0)	Total/NA	Solid	8015C	103240
680-93445-17	SB02-04 (0.5-1.5)	Total/NA	Solid	8015C	103240
680-93445-18	SB02-04 (7.0-8.0)	Total/NA	Solid	8015C	103240
680-93445-20	SB02-05 (7.0-8.0)	Total/NA	Solid	8015C	103240
680-93445-21	SB02-06 (0.5-1.5)	Total/NA	Solid	8015C	103240

GC Semi VOA (Continued)

Analysis Batch: 103532 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-103240/2-A	Lab Control Sample	Total/NA	Solid	8015C	103240
MB 490-103240/1-A	Method Blank	Total/NA	Solid	8015C	103240

Prep Batch: 104093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-1	PZ01-04	Total/NA	Water	3510C	
680-93445-2	PZ01-09	Total/NA	Water	3510C	
680-93445-23	PZ01-04 (DRO-SGT)	Total/NA	Water	3510C	
680-93445-24	PZ01-09 (DRO-SGT)	Total/NA	Water	3510C	
LCS 490-104093/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 490-104093/1-A	Method Blank	Total/NA	Water	3510C	

Prep Batch: 104094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	3550C	
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	3550C	
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	3550C	
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	3550C	
680-93445-6 MS	SB01-08 (9.0-10.0)	Total/NA	Solid	3550C	
680-93445-6 MSD	SB01-08 (9.0-10.0)	Total/NA	Solid	3550C	
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	3550C	
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	3550C	
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	3550C	
LCS 490-104094/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-104094/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 104122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93445-1	PZ01-04	Total/NA	Water	8015C	104093
680-93445-2	PZ01-09	Total/NA	Water	8015C	104093
680-93445-3	SB01-07 (0.5-1.5)	Total/NA	Solid	8015C	104094
680-93445-4	SB01-07 (9.0-10.0)	Total/NA	Solid	8015C	104094
680-93445-5	SB01-08 (1.5-2.5)	Total/NA	Solid	8015C	104094
680-93445-6	SB01-08 (9.0-10.0)	Total/NA	Solid	8015C	104094
680-93445-6 MS	SB01-08 (9.0-10.0)	Total/NA	Solid	8015C	104094
680-93445-6 MSD	SB01-08 (9.0-10.0)	Total/NA	Solid	8015C	104094
680-93445-13	SB02-02 (0.0-1.0)	Total/NA	Solid	8015C	104094
680-93445-19	SB02-05 (0.5-1.5)	Total/NA	Solid	8015C	104094
680-93445-22	SB02-06 (6.5-7.5)	Total/NA	Solid	8015C	104094
680-93445-23	PZ01-04 (DRO-SGT)	Total/NA	Water	8015C	104093
680-93445-24	PZ01-09 (DRO-SGT)	Total/NA	Water	8015C	104093
LCS 490-104093/2-A	Lab Control Sample	Total/NA	Water	8015C	104093
LCS 490-104094/2-A	Lab Control Sample	Total/NA	Solid	8015C	104094
MB 490-104093/1-A	Method Blank	Total/NA	Water	8015C	104093
MB 490-104094/1-A	Method Blank	Total/NA	Solid	8015C	104094

Client Sample ID: PZ01-04

Lab Sample ID: 680-93445-1

Date Collected: 08/20/13 15:40

Matrix: Water

Date Received: 08/21/13 10:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190083	08/28/13 22:50	WPD	TAL PEN
Total/NA	Prep	3520C			290348	08/22/13 14:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	290916	08/26/13 21:55	SMC	TAL SAV
Total/NA	Analysis	8015C		1	291184	08/28/13 12:34	AJMC	TAL SAV
Total/NA	Prep	3510C			104093	08/31/13 08:40	CLH	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 19:20	JLF	TAL NSH

Client Sample ID: PZ01-09

Lab Sample ID: 680-93445-2

Date Collected: 08/20/13 16:10

Matrix: Water

Date Received: 08/21/13 10:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190083	08/28/13 23:15	WPD	TAL PEN
Total/NA	Prep	3520C			290348	08/22/13 14:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	290916	08/26/13 22:20	SMC	TAL SAV
Total/NA	Analysis	8015C		1	291184	08/28/13 12:59	AJMC	TAL SAV
Total/NA	Prep	3510C			104093	08/31/13 08:40	CLH	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 19:36	JLF	TAL NSH

Client Sample ID: SB01-07 (0.5-1.5)

Lab Sample ID: 680-93445-3

Date Collected: 08/20/13 08:30

Matrix: Solid

Date Received: 08/21/13 10:07

Percent Solids: 71.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 17:55	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291413	08/30/13 01:07	SMP	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290971	08/27/13 17:48	AJMC	TAL SAV
Total/NA	Prep	3550C			104094	08/31/13 08:51	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 21:43	JLF	TAL NSH

Client Sample ID: SB01-07 (9.0-10.0)

Lab Sample ID: 680-93445-4

Date Collected: 08/20/13 08:40

Matrix: Solid

Date Received: 08/21/13 10:07

Percent Solids: 74.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 18:18	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291919	09/03/13 15:11	SMC	TAL SAV

Client Sample ID: SB01-07 (9.0-10.0)

Lab Sample ID: 680-93445-4

Date Collected: 08/20/13 08:40
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 74.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 19:20	AJMC	TAL SAV
Total/NA	Prep	3550C			104094	08/31/13 08:51	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 21:59	JLF	TAL NSH

Client Sample ID: SB01-08 (1.5-2.5)

Lab Sample ID: 680-93445-5

Date Collected: 08/20/13 09:00
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 18:44	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 18:59	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 18:17	AJMC	TAL SAV
Total/NA	Prep	3550C			104094	08/31/13 08:51	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 22:46	JLF	TAL NSH

Client Sample ID: SB01-08 (9.0-10.0)

Lab Sample ID: 680-93445-6

Date Collected: 08/20/13 09:10
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 19:10	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 19:25	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 18:37	AJMC	TAL SAV
Total/NA	Prep	3550C			104094	08/31/13 08:51	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 20:55	JLF	TAL NSH

Client Sample ID: SB01-09 (0.0-1.0)

Lab Sample ID: 680-93445-7

Date Collected: 08/20/13 09:30
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 71.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 19:36	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 19:50	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV

Client Sample ID: SB01-09 (0.0-1.0)

Lab Sample ID: 680-93445-7

Date Collected: 08/20/13 09:30
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 71.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015C		1	291258	08/28/13 20:19	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 00:58	JML	TAL NSH

Client Sample ID: SB01-09 (4.0-5.0)

Lab Sample ID: 680-93445-8

Date Collected: 08/20/13 09:40
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 84.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 20:01	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 20:16	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 19:17	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 01:14	JML	TAL NSH

Client Sample ID: SB01-10 (0.0-1.0)

Lab Sample ID: 680-93445-9

Date Collected: 08/20/13 10:15
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 77.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 20:27	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 20:41	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 20:39	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 01:30	JML	TAL NSH

Client Sample ID: SB01-10 (4.0-5.0)

Lab Sample ID: 680-93445-10

Date Collected: 08/20/13 10:25
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 72.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 20:53	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 21:06	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 19:56	AJMC	TAL SAV

Client Sample ID: SB01-10 (4.0-5.0)

Lab Sample ID: 680-93445-10

Date Collected: 08/20/13 10:25
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 72.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 01:45	JML	TAL NSH

Client Sample ID: SB02-01 (0.0-1.0)

Lab Sample ID: 680-93445-11

Date Collected: 08/20/13 11:15
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 59.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 21:18	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 21:32	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 20:16	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 02:01	JML	TAL NSH

Client Sample ID: SB02-01 (7.0-8.0)

Lab Sample ID: 680-93445-12

Date Collected: 08/20/13 11:25
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 21:44	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 21:57	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 20:36	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 02:17	JML	TAL NSH

Client Sample ID: SB02-02 (0.0-1.0)

Lab Sample ID: 680-93445-13

Date Collected: 08/20/13 11:45
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 22:10	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 22:22	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 21:19	AJMC	TAL SAV
Total/NA	Prep	3550C			104094	08/31/13 08:51	JLP	TAL NSH

Client Sample ID: SB02-02 (0.0-1.0)

Lab Sample ID: 680-93445-13

Date Collected: 08/20/13 11:45
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015C		1	104122	08/31/13 23:02	JLF	TAL NSH

Client Sample ID: SB02-02 (4.5-5.5)

Lab Sample ID: 680-93445-14

Date Collected: 08/20/13 11:50
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 81.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 22:35	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291919	09/03/13 15:38	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 10:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 12:49	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 02:48	JML	TAL NSH

Client Sample ID: SB02-03 (0.5-1.5)

Lab Sample ID: 680-93445-15

Date Collected: 08/20/13 14:10
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 79.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 23:01	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 23:12	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 13:09	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 03:04	JML	TAL NSH

Client Sample ID: SB02-03 (5.0-6.0)

Lab Sample ID: 680-93445-16

Date Collected: 08/20/13 14:15
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 23:27	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/30/13 23:37	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 13:28	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 03:20	JML	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: SB02-04 (0.5-1.5)

Lab Sample ID: 680-93445-17

Date Collected: 08/20/13 14:25
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 57.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/27/13 23:52	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/31/13 00:02	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 13:48	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 03:35	JML	TAL NSH

Client Sample ID: SB02-04 (7.0-8.0)

Lab Sample ID: 680-93445-18

Date Collected: 08/20/13 14:30
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/28/13 00:18	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/31/13 00:28	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 14:08	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 03:51	JML	TAL NSH

Client Sample ID: SB02-05 (0.5-1.5)

Lab Sample ID: 680-93445-19

Date Collected: 08/20/13 14:50
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 58.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/28/13 00:44	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/31/13 00:53	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 14:30	AJMC	TAL SAV
Total/NA	Prep	3550C			104094	08/31/13 08:51	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 23:18	JLF	TAL NSH

Client Sample ID: SB02-05 (7.0-8.0)

Lab Sample ID: 680-93445-20

Date Collected: 08/20/13 15:00
Matrix: Solid
Date Received: 08/21/13 10:07
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN

Client Sample ID: SB02-05 (7.0-8.0)

Lab Sample ID: 680-93445-20

Date Collected: 08/20/13 15:00
Date Received: 08/21/13 10:07

Matrix: Solid
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	189967	08/28/13 01:09	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291919	09/03/13 16:04	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 14:50	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 04:54	JML	TAL NSH

Client Sample ID: SB02-06 (0.5-1.5)

Lab Sample ID: 680-93445-21

Date Collected: 08/20/13 15:25
Date Received: 08/21/13 10:07

Matrix: Solid
Percent Solids: 62.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/28/13 01:35	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291673	08/31/13 01:43	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 21:58	AJMC	TAL SAV
Total/NA	Prep	3550C			103240	08/28/13 11:44	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/30/13 05:09	JML	TAL NSH

Client Sample ID: SB02-06 (6.5-7.5)

Lab Sample ID: 680-93445-22

Date Collected: 08/20/13 15:35
Date Received: 08/21/13 10:07

Matrix: Solid
Percent Solids: 83.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189677	08/23/13 16:13	LRS	TAL PEN
Total/NA	Analysis	8260B		1	189967	08/28/13 02:01	WPD	TAL PEN
Total/NA	Prep	3546			290598	08/23/13 13:40	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 18:17	SMC	TAL SAV
Total/NA	Prep	5035			290368	08/22/13 11:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	291393	08/29/13 12:48	AJMC	TAL SAV
Total/NA	Prep	3550C			104094	08/31/13 08:51	JLP	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 23:33	JLF	TAL NSH

Client Sample ID: PZ01-04 (DRO-SGT)

Lab Sample ID: 680-93445-23

Date Collected: 08/20/13 15:40
Date Received: 08/21/13 10:07

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			104093	08/31/13 08:40	CLH	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 19:52	JLF	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Client Sample ID: PZ01-09 (DRO-SGT)

Lab Sample ID: 680-93445-24

Date Collected: 08/20/13 16:10

Matrix: Water

Date Received: 08/21/13 10:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			104093	08/31/13 08:40	CLH	TAL NSH
Total/NA	Analysis	8015C		1	104122	08/31/13 20:08	JLF	TAL NSH

Client Sample ID: TB 130820-1

Lab Sample ID: 680-93445-25

Date Collected: 08/20/13 00:00

Matrix: Water

Date Received: 08/21/13 10:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190083	08/28/13 23:41	WPD	TAL PEN

Client Sample ID: TB 130820-2

Lab Sample ID: 680-93445-26

Date Collected: 08/20/13 00:00

Matrix: Water

Date Received: 08/21/13 10:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190083	08/29/13 00:07	WPD	TAL PEN

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

COC # 130820-1

CSX TRANSPORTATION

CHAIN OF CUSTODY

LABORATORY INFORMATION

- ☒ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method: Fedex

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

Proj. State (State of Origin): MD

Proj. City: Brunswick

CSXT Project Name: C&O Canal / Brunswick Rail Yard

CSXT Contact: Paul Kurzanski

LWON: ENV33683

CONSULTANT INFORMATION

Company: Arcadis

Project #: MD000843.0011.0004

PM: Megan Kellner

Address: 1114 Benfield Blvd

Email: megan.kellner@arcadis-us.com

City, State, Zip: Millersville, MD 21108

Phone: (410) 987-0032 Fax: (410) 987-4342

Turnaround Time:

- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- Specify # Days ____
- ☒ Standard 14 Days
- ☐ Other ____

Deliverables:

- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv: ____
- ☐ EDD Required, Format: ____

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other: Terracores

Note ➡ Pres. Code

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	~~8260-8015-DRO~~	~~8015-C DRO-SGT~~	8015C GRO (Pres. 1)	8270D SVOC (Pres. 0)	8270D SVOC (Pres. 0)	8015_C GRO (Pres. 6)				COMMENTS	LAB USE
P201-04	2x amber, 3xVOA	8/20/13	1540	KM	N	Grab	GW			X	X							
P201-09	2x amber, 3xVOA	8/20/13	1610	KM	N	Grab	GW			X	X							
SB01-07(1.0-1.5)	1xTerracore	8/20/13	0830	LL	N	Grab	SO						X					
SB01-07(9.5-10.0)	1xTerracore		0840										X					
SB01-08(2.0-2.5)	1xTC		0900										X					
SB01-08(9.0-9.5)	1xTC		0910										X					
SB01-09 (0.5-1.0)	1xTC		0930										X					
SB01-09 (4.0-4.5)	1xTC		0940										X					
SB01-10 (0.5-1.0)	1xTC		1015										X					
SB01-10 (4.0-4.5)	1xTC		1025										X					

680-93445 Chain of Custody

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	8/20/13 1900		

Received By Laboratory: [signature] Date/Time: 08/21/13 1007

Lab Remarks:

LAB USE: Custody Intact ☐ Yes ☐ No

Custody Seal #: #

LAB Log Number: #

Comments & Special Analytical Requirements: 680-93445 2.8/3.4/3.4°C

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

SA!

Page 1 of 5

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130820-1

LABORATORY INFORMATION

- [X] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 94153381

CSXT Project Name: See first page

CSXT Contact:

Proj. State (State of Origin):

Proj. City:

LWON: EN33683

CONSULTANT INFORMATION

Company: See first page

Address:

City, State, Zip:

Project #: MD000843.0011.0004

PM:

Email:

Phone: Fax:

Turnaround Time:
- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days
- [ ] Specify # Days
- [X] Standard 14 Days
- [ ] Other

Deliverables:
- [X] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv:
- [ ] EDD Required, Format:

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other TerraCore

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix: Code	Note ➡ 6 / Pres. Code: 8015C GRO								COMMENTS	LAB USE
								METHODS FOR ANALYSIS									
SB02-01 (0.5-1.0)	1xTC	8/20/13	1115	LL	N	Grab	SO	X									
SB02-01 (7.5-8.0)			1125					X									
SB02-02 (0.5-1.0)			1145					X									
SB02-02 (4.5-5.0)			1150					X									
SB02-03 (0.5-1.0)			1410					X									
SB02-03 (5.5-6.0)			1415					X									
SB02-04 (0.5-1.0)			1425					X									
SB02-04 (7.0-7.5)			1430					X									
SB02-05 (1.0-1.5)			1450					X									
SB02-05 (7.0-7.5)			1500					X									

Relinquished By:	Date/Time: 8/20/13 1900	Received By:	Date/Time:	Comments & Special Analytical Requirements: 680-93445
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By Laboratory:	Date/Time: 08/14/13 1007	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No	Custody Seal # / LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130820-1

LABORATORY INFORMATION

- [x] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

CSXT Project Name: See first page

CSXT Contact:

Proj. State (State of Origin):

Proj. City:

LWON: ENV33683

CONSULTANT INFORMATION

Company:

Address: See first page

City, State, Zip:

Project #: MD000893.0011.00004

PM:

Phone: Fax:

Turnaround Time:

- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days
- [x] Specify # Days
- [x] Standard 14 Days
- [ ] Other

Deliverables:

- [x] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv:
- [ ] EDD Required, Format:

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other TerraCore

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

Note ➡ 6 0

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	METHODS FOR ANALYSIS: 6010C GRO	8270D SVOC	COMMENTS	LAB USE
SB02-06(1.0-1.5)	1xTC	8/20/13	1525	LL	N	Grab	SO	X			
SB02-06(6.5-7.0)	1xTC		1535					X			
SB01-07(0.5-1.5)	1x4oz		0830						X		
SB01-07(9.0-10.0)			0840						X		
SB01-08(1.5-2.5)			0900						X		
SB01-08(9.0-10.0)			0910						X		
SB01-09(0.0-1.0)			0930						X		
SB01-09(4.0-5.0)			0940						X		
SB01-10(0.0-1.0)			1015						X		
SB01-10(4.0-5.0)			1025						X		

	Date/Time		Date/Time	Comments & Special Analytical Requirements
Relinquished By:	8/20/13 1900	Received By:		610-93445
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By Laboratory:	Date/Time: 08/21/13 1007	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No	Custody Seal # / LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130870-1

LABORATORY INFORMATION

- [X] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 941339 See first page

CSXT Project Name: See first page

CSXT Contact:

Proj. State (State of Origin):

Proj. City:

LWON: ENV33683

CONSULTANT INFORMATION

Company: See first page

Address: See first page

City, State, Zip:

Project # NDD000845.0011.00004

PM:

Email:

Phone: Fax:

Turnaround Time:
- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days
- [ ] Specify # Days
- [X] Standard 14 Days
- [ ] Other

Deliverables:
- [X] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv:
- [ ] EDD Required, Format:

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix: Code	Note → Pres. Code: 8270D SVOC							COMMENTS	LAB USE
								METHODS FOR ANALYSIS								
SB07-01 (0.0-1.0)	1-4oz	8/20/13	1115	CL	N	Grab	SO	X								
SB07-01 (7.0-8.0)			1125					X								
SB07-02 (0.0-1.0)			1145					X								
SB07-02 (4.5-5.5)			1150					X								
SB07-03 (0.5-1.5)			1410					X								
SB07-03 (5.0-6.0)			1415					X								
SB07-04 (0.5-1.5)			1425					X								
SB07-04 (7.0-8.0)			1430					X								
SB07-05 (0.5-1.5)			1450					X								
SB07-05 (7.0-8.0)			1500					X								

Relinquished By:	Date/Time: 8/20/13 1900	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory:	Date/Time: 08/21/13 1007	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No; Custody Seal # ; LAB Log Number #

Comments & Special Analytical Requirements:

680-93945

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130820-1

LABORATORY INFORMATION

- [x] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381-1 (see first page)

CSXT Project Name:

CSXT Contact:

Proj. State (State of Origin):

Proj. City:

LWON: ENV33683

CONSULTANT INFORMATION

Company: see first page

Address:

City, State, Zip:

Project #: MD000843.0011.00004

PM:

Email:

Phone: Fax:

Turnaround Time:

- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days
- [x] Specify # Days 10
- [x] Standard 14 Days
- [ ] Other

Deliverables:

- [x] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv:
- [ ] EDD Required, Format:

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	Note → Pres. Code: 6270D SIM	COMMENTS	LAB USE
SB07-06(0.5-1.5)	1x4oz	8/20/13	1525	LL	N	Grab	SO	X		
SB07-06(6.5-7.5)	↓	↓	1535	↓	N	↓	SO	X		

Relinquished By:	Date/Time: 8/20/13 1900	Received By:	Date/Time:	Comments & Special Analytical Requirements: 680-93745
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By Laboratory:	Date/Time: 08/21/13 1007	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No	Custody Seal # / LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

Page 121 of 134

9/11/2013

Nashville 2960 Foster Creighton Drive Nashville TN 37204

COC # 130820-2

CSX TRANSPORTATION — CHAIN OF CUSTODY

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method: Fedex

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 94153881 — Proj. State (State of Origin): MD

CSXT Project Name: 40 Canal / Brunswick Rail Yard — Proj. City: Brunswick

CSXT Contact: Paul Kwasnicki — LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS — Project #: MD000843.0011.00004

Address: 1114 Benfield Blvd — Project Mgr: Megan Kellner

City, State, Zip: Millersville MD 21108 — Email: megan.kellner@arcadis-us.com

Phone: (410) 987-0032 — Fax: (410) 987-4892

Turnaround Time:
- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days
- ☒ Standard 14 Days
- ☐ Other

Deliverables:
- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv:
- ☐ EDD Required, Format:

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	Note → Pres. Code: 8015-C DLO	8015-B DLO	8015-C DLO SGT	COMMENTS	LAB USE
PZ01-04	4 x amber	8/29/13	1540	KM	N	Grab	GW		X	X		
PZ01-09	4 x amber		1610	KM			GW		X	X		
SB01-07 (0.5 - 1.5)	4 oz x 1		0830	LL			SO	X				
SB01-07 (9.0 - 10.0)			0840					X				
SB01-08 (1.5 - 2.5)			0900					X				
SB01-08 (9.0 - 10.0)			0910					X				
SB01-09 (0.0 - 1.0)			0930					X				
SB01-09 (4.0 - 5.0)			0940					X				
SB01-10 (0.0 - 1.0)			1615					X				
SB01-10 (4.0 - 5.0)			1625					X				

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	8/29/13 1900	[signature] Tran	8.31.13 @ 0845
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory:	Date/Time:	Lab Remarks:	LAB USE: ☐ Yes ☐ Custody Intact ☐ No

Comments & Special Analytical Requirements:

680-93445

Custody Seal #: #

LAB Log Number: #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

Page 1 of 3

Nashville

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130820-2

LABORATORY INFORMATION
- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION
Shipment Method:
Shipment Tracking No:

CSXT PROJECT INFORMATION
CSXT Project Number: 9415381
CSXT Project Name: See first page
CSXT Contact:
Proj. State (State of Origin):
Proj. City:
LWON: ENV33883

CONSULTANT INFORMATION
Company: See first page
Address:
City, State, Zip:
Project #: MD000843.0011.00004
PM:
Email:
Phone: Fax:

Turnaround Time: ☐ 1 Day Rush ☐ 2 Day Rush ☐ 3 Day Rush ☐ Standard 6-13 Days ☐ Specify # Days ____ ☒ Standard 14 Days ☐ Other ____

Deliverables: ☒ CSXT Standard (Level II) ☐ Level III ☐ Level IV ☐ Other Deliv: ____ ☐ EDD Required, Format: ____

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other ____

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

Note ➡ Pres. Code: 0

METHODS FOR ANALYSIS: 8015-C DRO

COMMENTS | LAB USE

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	8015-C DRO	Comments	Lab Use
SB07-01 (0.0-1.0)	1x4oz	8/20	1115	LE	N	Grab	SO	X		
SB07-01 (7.0-8.0)			1125					X		
SB07-02 (0.0-1.0)			1145					X		
SB07-02 (4.5-5.5)			1150					X		
SB07-03 (0.5-1.5)			1410					X		
SB07-03 (5.0-6.0)			1415					X		
SB07-04 (0.5-1.5)			1425					X		
SB07-04 (7.0-8.0)			1430					X		
SB07-05 (0.5-1.5)			1450					X		
SB07-05 (7.0-8.0)			1500					X		

Relinquished By	Date/Time	Received By	Date/Time
[signature]	8/20/13 1900	[signature] TAW	8-21-13 @ 0815

Received By Laboratory: Date/Time: Lab Remarks:

LAB USE: Custody Intact ☐ Yes ☐ No
Custody Seal #:
LAB Log Number #:

Comments & Special Analytical Requirements: 680-92445

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES
INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC
TAL-6006 (0509)

Page 2 of 3

NA

Nashville

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130820-2

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 , F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-691-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9-415361 - See first page

CSXT Project Name:

CSXT Contact:

Proj. State (State of Origin):

Proj. City:

LWON: EN338653

CONSULTANT INFORMATION

Company: See first page

Address:

City, State, Zip:

Project #: MD000843.0011.00004

PM:

Email:

Phone: Fax:

Turnaround Time:

- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days
- ☑ Standard 14 Days
- ☐ Other

Deliverables:

- ☑ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv:
- ☐ EDD Required, Format:

Preservative Codes:

0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other

Matrix Codes:

GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix: Code	Note → Pres. Code: 0	METHODS FOR ANALYSIS: 8015-C DRO	COMMENTS	LAB USE
SB07-06(0.5-1.5)	1x4oz	8/20/13	1525	LL	N	Grab	SO		X		
SB02-06(6.5-7.5)	↓	↓	1535	↓	↓	↓	↓		X		

Relinquished By:	Date/Time: 8/20/13 1900	Received By:	Date/Time: 8-21-13 @ 0815	Comments & Special Analytical Requirements: 680-93445	
Relinquished By:	Date/Time:	Received By:	Date/Time:		
Relinquished By:	Date/Time:	Received By:	Date/Time:		
Received By Laboratory:	Date/Time:	Lab Remarks:	LAB USE: ☐ Yes ☐ No Custody Intact	Custody Seal #	LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

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(NASH)

CSX TRANSPORTATION

CHAIN OF CUSTODY

COC # 130820-3

LABORATORY INFORMATION
- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION
Shipment Method: Fedex
Shipment Tracking No:

CSXT PROJECT INFORMATION
CSXT Project Number: 9415381
CSXT Project Name: C-O Canal (Brunswick Rail Yard
CSXT Contact: Paul Kurzanski
Proj. State (State of Origin): MD
Proj. City: Brunswick
LWON: ENV33683

CONSULTANT INFORMATION
Company: ARCADIS
Address: 114 Cosfield Blvd
City, State, Zip: Millersville, MD 21108
Project #: MD000843.0011.00004
PM: Megan Kellner
Email: megan.kellner@arcadis-us.com
Phone: (410) 987-0032 Fax: (410) 987-4342

Turnaround Time:
- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- Specify # Days ______
- ☒ Standard 14 Days
- ☐ Other ______

Deliverables:
- ☒ CSXT Standard (Level II)
- ☑ Level III
- ☐ Level IV
- ☐ Other Deliv: ______
- ☐ EDD Required, Format: ______

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other TerraCore

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

Note ➜ Pres. Code: 1 | 6

METHODS FOR ANALYSIS: 8260B Mod Full List | 8260B Full List VOC

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	8260B Mod Full List	8260B Full List VOC	COMMENTS	LAB USE
PZ01-04	2x VOA	8/20/13	1540	KM	N	Grab	GW	X			
PZ01-09	↓	↓	1610	KM	N	Grab	GW	X			
TB 130820-1	↓	↓	—	—	—	—	GW	X			
TB 130820-2	↓	↓	—	—	—	—	GW	X			
SB01-07 (1.0-1.5)	TerraCore	↓	0830	LL	N	Grab	SO		X		
SB01-07 (9.5-10.0)	↓	↓	0840	↓	↓	↓	↓		X		
SB01-08 (2.0-2.5)	↓	↓	0900	↓	↓	↓	↓		X		
SB01-08 (9.0-9.5)	↓	↓	0910	↓	↓	↓	↓		X		
SB01-09 (0.5-1.0)	↓	↓	0930	↓	↓	↓	↓		X		
SB01-09 (4.0-4.5)	↓	↓	0946	↓	↓	↓	↓		X		

Relinquished By: [signature]	Date/Time: 8/20/13 1900	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory: [signature]	Date/Time: 8.21.13 0937	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No

Comments & Special Analytical Requirements: 0.8° 3.2° 1105 680-93445 ~~680-93423~~ (08/22/13)

Custody Seal #: # LAB Log Number: #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

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TB

Pens

CSX TRANSPORTATION

CHAIN OF CUSTODY

COC # 130820-3

LABORATORY INFORMATION
- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION
Shipment Method:
Shipment Tracking No:

CSXT PROJECT INFORMATION
CSXT Project Number: 1415381
Proj. State (State of Origin): MS
Proj. City: Brunswick
CSXT Project Name: GO Canal / Brunswick Rail Yard
CSXT Contact: Paul Kurzanski
LWON: ENV33683

CONSULTANT INFORMATION
Company:
Address: See first page
City, State, Zip:
Project #: MD000843.0011.00004
PM:
Email:
Phone:
Fax:

Turnaround Time:
- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- Specify # Days ______
- ☐ Standard 14 Days
- ☐ Other ______

Deliverables:
- ☐ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv: ______
- ☐ EDD Required, Format: ______

Preservative Codes:
0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other Terracore

Note ➡ Pres. Code: 6

Matrix Codes:
GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

METHODS FOR ANALYSIS: 8260B Full List VOC

Sample Identification	Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	8260B Full List VOC							COMMENTS	LAB USE
SB01-10 (0.5-1.0)	1x Terracore	8/20/13	1015	LL	N	Grab	SO	X								
SB01-10 (4.0-4.5)	↓	↓	1020	↓	↓	↓	↓	X								
SB02-01 (0.5-1.0)	↓	↓	1115	↓	↓	↓	↓	X								
SB02-01 (7.5-8.0)	↓	↓	1125	↓	↓	↓	↓	X								
SB02-02 (0.5-1.0)	↓	↓	1145	↓	↓	↓	↓	X								
SB02-02 (4.5-5.0)	↓	↓	1150	↓	↓	↓	↓	X								
SB02-03 (0.5-1.0)	↓	↓	1410	↓	↓	↓	↓	X								
SB02-03 (5.5-6.0)	↓	↓	1415	↓	↓	↓	↓	X								
SB02-04 (0.5-1.0)	↓	↓	1425	↓	↓	↓	↓	X								
SB02-04 (7.0-8.0)	↓	↓	1430	↓	↓	↓	↓	X								

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	8/20/13 1900		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory: [signature]	Date/Time: 8.21.13 0937	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No

Comments & Special Analytical Requirements:
0.8 IR5 680-93445
3.2 ~~680-93423~~ 08/22/13

Custody Seal #
LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

PENS

Page 2 of 3

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130820-3

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

CSXT Project Name: see first page

CSXT Contact:

Proj. State (State of Origin):

Proj. City:

LWON: LWU33683

CONSULTANT INFORMATION

Company: see first page

Address:

City, State, Zip:

Project #: MD000843.0011.00004

PM:

Email:

Phone: Fax:

Turnaround Time:

- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- ☐ Specify # Days _____
- ☒ Standard 14 Days
- ☐ Other _____

Deliverables:

- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv: _____
- ☐ EDD Required, Format: _____

Preservative Codes: 0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other _____

Note ➡ Pres. Code

Matrix Codes: GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; LIQ = Liquid; SOL = Other Solid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp. or Grab	Matrix Code	METHODS FOR ANALYSIS: 8260B Full List VOC	COMMENTS	LAB USE
SB02-05 (1.0-1.5)	1x Terracore	8/20/13	1450	CL	N	Grab	SO	X		
SB02-05 (7.0-7.5)	↓	↓	1500	↓	↓	↓	↓	X		
SB02-06 (1.0-1.5)	↓	↓	1525	↓	↓	↓	↓	X		
SB02-06 (6.5-7.0)	↓	↓	1535	↓	↓	↓	↓	X		

	Date/Time	Received By	Date/Time
Relinquished By:	8/20/13 1900	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory:	Date/Time: 8-21-13 0937	Lab Remarks:	LAB USE: ☐ Yes Custody Intact ☐ No

Comments & Special Analytical Requirements:

0.8
3.2 1125 680-93445 ~~680-93445~~ 8/22 PM

Custody Seal # | LAB Log Number #

PEDS

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

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Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93445-1

Login Number: 93445

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93445-1

Login Number: 93445
List Number: 1
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/22/13 12:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8°, 3.2°C IR5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93445-1

Login Number: 93445
List Number: 2
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/22/13 12:46 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8°, 3.2°C IR5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93445-1

Login Number: 93445
List Number: 3
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/22/13 12:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8°, 3.2°C IR5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	07-31-14
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14 *
California	NELAP	9	3217CA	07-31-14 *
Colorado	State Program	8	N/A	12-31-13
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-13 *
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14
South Carolina	State Program	4	98001	06-30-13 *
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13
West Virginia DEP	State Program	3	94	09-30-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Laboratory: TestAmerica Nashville (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
AIHA	IHLAP		100790	09-01-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-15
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-13
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14
Arizona	State Program	9	AZ0710	01-11-14
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-14

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93445-1

Laboratory: TestAmerica Pensacola (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200041	10-09-13
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-13
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-13 *
Michigan	State Program	5	9912	06-30-13 *
New Jersey	NELAP	2	FL006	06-30-13 *
North Carolina DENR	State Program	4	314	12-31-13
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-14
Rhode Island	State Program	1	LAO00307	12-31-13
South Carolina	State Program	4	96026	06-30-13 *
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-93498-1
Client Project/Site: CSX C&O Canal Brunswick, MD

For:
ARCADIS U.S., Inc.
1114 Benfield Blvd.
Suite A
Millersville, Maryland 21108

Attn: Ms. Megan Kellner

Authorized for release by:
9/13/2013 11:43:43 AM

Lisa Harvey, Project Manager II
lisa.harvey@testamericainc.com

Job ID: 680-93498-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX C&O Canal Brunswick, MD
Report Number: 680-93498-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 8/22/2013 9:39 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.6º C, 2.6º C and 2.8º C.

The footage on the COC for the VOCs and GRO is a shorter range than what was indicated for the SVOCs and DRO. For consitency in reporting moisture values, the specific soil boring was logged in for all tests based on the sample ID and date/time sampled, and were subsequently logged in so as to report at the largest of the depth range.

The tare weights were covered by the client ID labels on 39 of 48 terra core vials. Tare weights are used to determine the weight of soil in the vial.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SB02-07 (0.5-1.5) (680-93498-4), SB02-07 (5.5-6.5) (680-93498-5), SB02-08 (0.5-1.5) (680-93498-6), SB02-08 (7.0-8.0) (680-93498-7), SB02-09 (0.5-1.5) (680-93498-8), SB02-09 (4.5-5.5) (680-93498-9), SB02-10 (0.5-1.5) (680-93498-10), SB02-10 (5.0-6.0) (680-93498-11), SB03-01 (0.5-1.5) (680-93498-12), SB03-01 (5.0-6.0) (680-93498-13), SB03-02 (0.0-1.0) (680-93498-14), SB03-02 (3.0-4.0) (680-93498-15), SB03-03 (0.5-1.5) (680-93498-16), SB03-03 (3.0-4.0) (680-93498-17), SB03-04 (0.5-1.5) (680-93498-18) and SB03-04 (4.0-5.0) (680-93498-19) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Samples PZ02-04 (082113) (680-93498-1) and TB01 (0802113) (680-93498-3) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Method(s) 8260B: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 5 analytes to recover outside criteria for this method when a full list spike is utilized. The LCSD associated with batch 189997 had 1 analyte outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

SEMIVOLATILE ORGANIC COMPOUNDS

Samples SB02-07 (0.5-1.5) (680-93498-4), SB02-07 (5.5-6.5) (680-93498-5), SB02-08 (0.5-1.5) (680-93498-6), SB02-08 (7.0-8.0) (680-93498-7), SB02-09 (0.5-1.5) (680-93498-8), SB02-09 (4.5-5.5) (680-93498-9), SB02-10 (0.5-1.5) (680-93498-10), SB02-10 (5.0-6.0) (680-93498-11), SB03-01 (0.5-1.5) (680-93498-12), SB03-01 (5.0-6.0) (680-93498-13), SB03-02 (0.0-1.0) (680-93498-14), SB03-02 (3.0-4.0) (680-93498-15), SB03-03 (0.5-1.5) (680-93498-16), SB03-03 (3.0-4.0) (680-93498-17), SB03-04 (0.5-1.5) (680-93498-18) and SB03-04 (4.0-5.0) (680-93498-19) were analyzed for Semivolatile Organic Compounds (Solid) in accordance with EPA SW-846 Method 8270D.

Sample PZ02-04 (082113) (680-93498-1) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

Job ID: 680-93498-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Method(s) 8270D: The following analytes have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Famphur, 1,4-Napthaquinone, Methane sulfonate, Benzaldehyde, 1-naphthylamine, 2-naphthylamine, p-Dimethylamino azobenzene, p-phenylenediamine, a,a-dimethylphenethylamine, Methapyriline, 2-picoline (2-methylpyridine), 3,3'-dimethylbenzidine, 3,3'-dichlorobenzidine, Benzidine, Benzaldehyde, Benzoic acid, Dinoseb, Hexachlorophene, Hexachlorocyclopentadiene, o,o,o-triethylphosphoro-thioate. These analytes may have a %D >60% if the average %D of all the analytes in the continuing calibration verification (CCV) is 30%. These analytes may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 291040 was outside the method criteria for the following analyte(s): N-Nitrosophenylamine and pyridine. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: The initial calibration curve analyzed in batch 290775 was outside method criteria for the following analyte(s): Atrazine and Benzidine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

Method(s) 8270D: The initial calibration verification (ICV) analyzed in batch 290775 was outside method criteria for the following analyte(s): Benzidine and Benzaldehyde. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: The initial calibration curve analyzed in batch 291781 was outside method criteria for the following analyte(s): benzoic acid. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

Method(s) 8270D: Manual integration was performed on the following sample(s): SB02-07 (0.5-1.5) (680-93498-4), SB03-01 (0.5-1.5) (680-93498-12), SB03-02 (0.0-1.0) (680-93498-14).

Method(s) 8270D: The following sample(s) contained one acid and/or one base surrogate outside acceptance limits: SB02-10 (0.5-1.5) (680-93498-10), SB03-01 (0.5-1.5) (680-93498-12), SB03-02 (0.0-1.0) (680-93498-14), SB03-03 (0.5-1.5) (680-93498-16), SB03-04 (0.5-1.5) (680-93498-18), SB03-04 (4.0-5.0) (680-93498-19). The laboratory's SOP allows one acid surrogate and/or one base surrogate to be outside acceptance limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8270D: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for four analytes to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 290873 had one analyte outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 291613 was outside the method criteria for the following analyte(s): 2,2'oxybis[1-chloropropane], 2-Methylphenol, 3&4 Methylphenol, Anthracene, Benzidine, 1,2 Dichlorbenzene, Benzyl alcohol, Butyl benzyl phthalate, Carbazole, Di-n-butyl phthalate, Fluoranthene, Hexachloroethane, N-Nitrosodimethylamine, N-Nitrosodi-n-propylamine, phenol, pyrene, pyridine and Terphenyl-d14. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision were outside control limits. Refer to QC pages.

Method(s) 8270D: Surrogate recovery for the following sample(s) was outside control limits: SB02-07 (0.5-1.5) (680-93498-4), SB02-09 (0.5-1.5) (680-93498-8). Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

Method(s) 8270D: Surrogate recovery for the following sample(s) was outside control limits: SB02-08 (0.5-1.5) (680-93498-6). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results. Both sets of data are reported. The

Job ID: 680-93498-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

results for the sample re-extracted outside hold time will have an "H" flag.

Method(s) 8270D: Surrogate recovery for the following sample(s) was outside acceptance limits: (LCS 680-292846/8-A), (MB 680-292846/7-A). All associated sample surrogates fell within acceptance criteria; therefore, the data have been reported.

Method(s) 8270D: Internal standard (ISTD) response for the following QC sample(s) was outside of acceptance limits: (LCS 680-292846/8-A), (MB 680-292846/7-A). The QC sample(s) were not re-analyzed due to related samples being re-extracts with expired holding times. Data have been qualified and reported.

Method(s) 8270D: The laboratory control sample (LCS) for batch 292846 recovered outside control limits for several analytes. The LCS was not re-analyzed due to related samples being re-extracts with expired holding times. Data have been qualified and reported.

Method(s) 8270D: The initial calibration curve analyzed in batch 292972 was outside method criteria for the following analyte(s): Benzidine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

GASOLINE RANGE ORGANICS (GRO)

Samples SB02-07 (0.5-1.5) (680-93498-4), SB02-07 (5.5-6.5) (680-93498-5), SB02-08 (0.5-1.5) (680-93498-6), SB02-08 (7.0-8.0) (680-93498-7), SB02-09 (0.5-1.5) (680-93498-8), SB02-09 (4.5-5.5) (680-93498-9), SB02-10 (0.5-1.5) (680-93498-10), SB02-10 (5.0-6.0) (680-93498-11), SB03-01 (0.5-1.5) (680-93498-12), SB03-01 (5.0-6.0) (680-93498-13), SB03-02 (0.0-1.0) (680-93498-14), SB03-02 (3.0-4.0) (680-93498-15), SB03-03 (0.5-1.5) (680-93498-16), SB03-03 (3.0-4.0) (680-93498-17), SB03-04 (0.5-1.5) (680-93498-18) and SB03-04 (4.0-5.0) (680-93498-19) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015B.

Sample PZ02-04 (082113) (680-93498-1) was analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015C.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Gasoline Range Organics (GRO)-C6-C10 was detected in method blank MB 680-291184/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Method(s) 8015C: Internal standard (ISTD) response for the following samples were outside of acceptance limits: SB02-07 (0.5-1.5) (680-93498-4), SB02-07 (5.5-6.5) (680-93498-5), SB02-08 (0.5-1.5) (680-93498-6), SB02-08 (7.0-8.0) (680-93498-7), SB02-09 (0.5-1.5) (680-93498-8), SB02-10 (0.5-1.5) (680-93498-10). Most of this project had similar low recoveries for internal standards; as such the samples were not re-analyzed, the data have been reported per the project manager.

Method(s) 8015C: Internal standard responses were outside of acceptance limits for the following sample: SB03-02 (0.0-1.0) (680-93498-14), SB03-03 (0.5-1.5) (680-93498-16), SB03-04 (0.5-1.5) (680-93498-18). The project shows evidence of matrix interference. Samples were reanalyzed confirming the internal standard reponse outside acceptance limites; data have been reported.

Method(s) 8015C: Surrogate recovery for the following samples were outside control limits: SB02-07 (0.5-1.5) (680-93498-4), SB02-08 (0.5-1.5) (680-93498-6), SB02-09 (0.5-1.5) (680-93498-8), SB02-10 (0.5-1.5) (680-93498-10), SB03-03 (0.5-1.5) (680-93498-16), SB03-04 (0.5-1.5) (680-93498-18), SB03-04 (4.0-5.0) (680-93498-19). Evidence of matrix interference is present throughout the projetc. Sample was re-analyzed confirming recovery outside the control limits; original results have been reported.

DIESEL RANGE ORGANICS (DRO)

Samples SB02-07 (0.5-1.5) (680-93498-4), SB02-07 (5.5-6.5) (680-93498-5), SB02-08 (0.5-1.5) (680-93498-6), SB02-08 (7.0-8.0) (680-93498-7), SB02-09 (0.5-1.5) (680-93498-8), SB02-09 (4.5-5.5) (680-93498-9), SB02-10 (0.5-1.5) (680-93498-10), SB02-10 (5.0-6.0) (680-93498-11), SB03-01 (0.5-1.5) (680-93498-12), SB03-01 (5.0-6.0) (680-93498-13), SB03-02 (0.0-1.0) (680-93498-14), SB03-02 (3.0-4.0) (680-93498-15), SB03-03 (0.5-1.5) (680-93498-16), SB03-03 (3.0-4.0) (680-93498-17), SB03-04 (0.5-1.5) (680-93498-18) and SB03-04 (4.0-5.0) (680-93498-19) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Samples PZ02-04 (082113) (680-93498-1) and PZ02-04 (082113) (DRO-SGT) (680-93498-20) were analyzed for Diesel Range Organics

Job ID: 680-93498-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

(DRO) in accordance with EPA SW-846 Method 8015C.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Diesel Range Organics [C10-C28] was detected in method blank MB 490-103111/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-93498-1	PZ02-04 (082113)	Water	08/21/13 09:35	08/22/13 09:39
680-93498-3	TB01 (0802113)	Water	08/21/13 00:00	08/22/13 09:39
680-93498-4	SB02-07 (0.5-1.5)	Solid	08/21/13 08:50	08/22/13 09:39
680-93498-5	SB02-07 (5.5-6.5)	Solid	08/21/13 09:00	08/22/13 09:39
680-93498-6	SB02-08 (0.5-1.5)	Solid	08/21/13 09:10	08/22/13 09:39
680-93498-7	SB02-08 (7.0-8.0)	Solid	08/21/13 09:20	08/22/13 09:39
680-93498-8	SB02-09 (0.5-1.5)	Solid	08/21/13 10:00	08/22/13 09:39
680-93498-9	SB02-09 (4.5-5.5)	Solid	08/21/13 10:10	08/22/13 09:39
680-93498-10	SB02-10 (0.5-1.5)	Solid	08/21/13 10:20	08/22/13 09:39
680-93498-11	SB02-10 (5.0-6.0)	Solid	08/21/13 10:30	08/22/13 09:39
680-93498-12	SB03-01 (0.5-1.5)	Solid	08/21/13 12:30	08/22/13 09:39
680-93498-13	SB03-01 (5.0-6.0)	Solid	08/21/13 12:40	08/22/13 09:39
680-93498-14	SB03-02 (0.0-1.0)	Solid	08/21/13 12:50	08/22/13 09:39
680-93498-15	SB03-02 (3.0-4.0)	Solid	08/21/13 13:00	08/22/13 09:39
680-93498-16	SB03-03 (0.5-1.5)	Solid	08/21/13 13:20	08/22/13 09:39
680-93498-17	SB03-03 (3.0-4.0)	Solid	08/21/13 13:30	08/22/13 09:39
680-93498-18	SB03-04 (0.5-1.5)	Solid	08/21/13 13:50	08/22/13 09:39
680-93498-19	SB03-04 (4.0-5.0)	Solid	08/21/13 14:00	08/22/13 09:39
680-93498-20	PZ02-04 (082113) (DRO-SGT)	Water	08/21/13 09:35	08/22/13 09:39

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL NSH

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD exceeds the control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
F	MS/MSD Recovery and/or RPD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD exceeds the control limits
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: PZ02-04 (082113)
Date Collected: 08/21/13 09:35
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/29/13 00:33	1
Benzene	1.0	U	1.0	0.34	ug/L			08/29/13 00:33	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/29/13 00:33	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/29/13 00:33	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/29/13 00:33	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/29/13 00:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 00:33	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/29/13 00:33	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/29/13 00:33	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/29/13 00:33	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/29/13 00:33	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/29/13 00:33	1
2-Hexanone	25	U	25	3.1	ug/L			08/29/13 00:33	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/29/13 00:33	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/29/13 00:33	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/29/13 00:33	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/29/13 00:33	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/29/13 00:33	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/29/13 00:33	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/29/13 00:33	1
Styrene	1.0	U	1.0	1.0	ug/L			08/29/13 00:33	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/29/13 00:33	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/29/13 00:33	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/29/13 00:33	1
Toluene	1.0	U	1.0	0.70	ug/L			08/29/13 00:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 00:33	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/29/13 00:33	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/29/13 00:33	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/29/13 00:33	1

Client Sample ID: PZ02-04 (082113)
Date Collected: 08/21/13 09:35
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/29/13 00:33	1
Xylenes, Total	10	U	10	1.6	ug/L			08/29/13 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/29/13 00:33*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*08/29/13 00:33*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/29/13 00:33*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9	0.75	ug/L		08/23/13 15:49	08/26/13 19:50	1
Acenaphthylene	9.9	U	9.9	0.84	ug/L		08/23/13 15:49	08/26/13 19:50	1
Acetophenone	9.9	U	9.9	0.57	ug/L		08/23/13 15:49	08/26/13 19:50	1
Anthracene	9.9	U	9.9	0.68	ug/L		08/23/13 15:49	08/26/13 19:50	1
Atrazine	9.9	U	9.9	1.2	ug/L		08/23/13 15:49	08/26/13 19:50	1
Benzaldehyde	9.9	U ^	9.9	1.1	ug/L		08/23/13 15:49	08/26/13 19:50	1
Benzo[a]anthracene	9.9	U	9.9	0.55	ug/L		08/23/13 15:49	08/26/13 19:50	1
Benzo[a]pyrene	9.9	U	9.9	0.70	ug/L		08/23/13 15:49	08/26/13 19:50	1
Benzo[b]fluoranthene	9.9	U	9.9	2.6	ug/L		08/23/13 15:49	08/26/13 19:50	1
Benzo[g,h,i]perylene	9.9	U	9.9	0.86	ug/L		08/23/13 15:49	08/26/13 19:50	1
Benzo[k]fluoranthene	9.9	U	9.9	1.2	ug/L		08/23/13 15:49	08/26/13 19:50	1
1,1'-Biphenyl	9.9	U	9.9	0.58	ug/L		08/23/13 15:49	08/26/13 19:50	1
Bis(2-chloroethoxy)methane	9.9	U	9.9	0.93	ug/L		08/23/13 15:49	08/26/13 19:50	1
Bis(2-chloroethyl)ether	9.9	U	9.9	1.1	ug/L		08/23/13 15:49	08/26/13 19:50	1
bis (2-chloroisopropyl) ether	9.9	U	9.9	0.77	ug/L		08/23/13 15:49	08/26/13 19:50	1
Bis(2-ethylhexyl) phthalate	9.9	U	9.9	1.6	ug/L		08/23/13 15:49	08/26/13 19:50	1
4-Bromophenyl phenyl ether	9.9	U	9.9	0.76	ug/L		08/23/13 15:49	08/26/13 19:50	1
Butyl benzyl phthalate	9.9	U	9.9	1.2	ug/L		08/23/13 15:49	08/26/13 19:50	1
Caprolactam	9.9	U	9.9	0.78	ug/L		08/23/13 15:49	08/26/13 19:50	1
Carbazole	9.9	U	9.9	0.70	ug/L		08/23/13 15:49	08/26/13 19:50	1
4-Chloroaniline	20	U	20	2.2	ug/L		08/23/13 15:49	08/26/13 19:50	1
4-Chloro-3-methylphenol	9.9	U	9.9	0.99	ug/L		08/23/13 15:49	08/26/13 19:50	1
2-Chloronaphthalene	9.9	U	9.9	0.79	ug/L		08/23/13 15:49	08/26/13 19:50	1
2-Chlorophenol	9.9	U	9.9	0.86	ug/L		08/23/13 15:49	08/26/13 19:50	1
4-Chlorophenyl phenyl ether	9.9	U	9.9	0.83	ug/L		08/23/13 15:49	08/26/13 19:50	1
Chrysene	9.9	U	9.9	0.51	ug/L		08/23/13 15:49	08/26/13 19:50	1
Dibenz(a,h)anthracene	9.9	U	9.9	0.99	ug/L		08/23/13 15:49	08/26/13 19:50	1
Dibenzofuran	9.9	U	9.9	0.78	ug/L		08/23/13 15:49	08/26/13 19:50	1
3,3'-Dichlorobenzidine	60	U	60	30	ug/L		08/23/13 15:49	08/26/13 19:50	1
2,4-Dichlorophenol	9.9	U	9.9	1.1	ug/L		08/23/13 15:49	08/26/13 19:50	1
Diethyl phthalate	9.9	U	9.9	0.87	ug/L		08/23/13 15:49	08/26/13 19:50	1
2,4-Dimethylphenol	9.9	U	9.9	4.0	ug/L		08/23/13 15:49	08/26/13 19:50	1
Dimethyl phthalate	9.9	U	9.9	0.98	ug/L		08/23/13 15:49	08/26/13 19:50	1
Di-n-butyl phthalate	9.9	U	9.9	0.82	ug/L		08/23/13 15:49	08/26/13 19:50	1
4,6-Dinitro-2-methylphenol	50	U	50	9.9	ug/L		08/23/13 15:49	08/26/13 19:50	1
2,4-Dinitrophenol	50	U	50	9.9	ug/L		08/23/13 15:49	08/26/13 19:50	1
2,4-Dinitrotoluene	9.9	U	9.9	1.2	ug/L		08/23/13 15:49	08/26/13 19:50	1
2,6-Dinitrotoluene	9.9	U	9.9	1.1	ug/L		08/23/13 15:49	08/26/13 19:50	1
Di-n-octyl phthalate	9.9	U	9.9	1.4	ug/L		08/23/13 15:49	08/26/13 19:50	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: PZ02-04 (082113)
Date Collected: 08/21/13 09:35
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	9.9	U	9.9	0.73	ug/L		08/23/13 15:49	08/26/13 19:50	1
Fluorene	9.9	U	9.9	0.95	ug/L		08/23/13 15:49	08/26/13 19:50	1
Hexachlorobenzene	9.9	U	9.9	0.78	ug/L		08/23/13 15:49	08/26/13 19:50	1
Hexachlorobutadiene	9.9	U	9.9	0.62	ug/L		08/23/13 15:49	08/26/13 19:50	1
Hexachlorocyclopentadiene	9.9	U	9.9	2.5	ug/L		08/23/13 15:49	08/26/13 19:50	1
Hexachloroethane	9.9	U	9.9	0.75	ug/L		08/23/13 15:49	08/26/13 19:50	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9	0.99	ug/L		08/23/13 15:49	08/26/13 19:50	1
Isophorone	9.9	U	9.9	0.89	ug/L		08/23/13 15:49	08/26/13 19:50	1
2-Methylnaphthalene	9.9	U	9.9	0.77	ug/L		08/23/13 15:49	08/26/13 19:50	1
2-Methylphenol	9.9	U	9.9	0.88	ug/L		08/23/13 15:49	08/26/13 19:50	1
3 & 4 Methylphenol	9.9	U	9.9	1.3	ug/L		08/23/13 15:49	08/26/13 19:50	1
Naphthalene	9.9	U	9.9	0.69	ug/L		08/23/13 15:49	08/26/13 19:50	1
2-Nitroaniline	50	U	50	1.3	ug/L		08/23/13 15:49	08/26/13 19:50	1
3-Nitroaniline	50	U	50	5.0	ug/L		08/23/13 15:49	08/26/13 19:50	1
4-Nitroaniline	50	U	50	5.0	ug/L		08/23/13 15:49	08/26/13 19:50	1
Nitrobenzene	9.9	U	9.9	0.72	ug/L		08/23/13 15:49	08/26/13 19:50	1
2-Nitrophenol	9.9	U	9.9	0.75	ug/L		08/23/13 15:49	08/26/13 19:50	1
4-Nitrophenol	50	U	50	1.9	ug/L		08/23/13 15:49	08/26/13 19:50	1
N-Nitrosodi-n-propylamine	9.9	U	9.9	0.71	ug/L		08/23/13 15:49	08/26/13 19:50	1
N-Nitrosodiphenylamine	9.9	U	9.9	0.91	ug/L		08/23/13 15:49	08/26/13 19:50	1
Pentachlorophenol	50	U	50	2.0	ug/L		08/23/13 15:49	08/26/13 19:50	1
Phenanthrene	9.9	U	9.9	0.76	ug/L		08/23/13 15:49	08/26/13 19:50	1
Phenol	9.9	U	9.9	0.82	ug/L		08/23/13 15:49	08/26/13 19:50	1
Pyrene	9.9	U	9.9	0.63	ug/L		08/23/13 15:49	08/26/13 19:50	1
2,4,5-Trichlorophenol	9.9	U	9.9	1.2	ug/L		08/23/13 15:49	08/26/13 19:50	1
2,4,6-Trichlorophenol	9.9	U	9.9	0.84	ug/L		08/23/13 15:49	08/26/13 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*63*		*38 - 130*	*08/23/13 15:49*	*08/26/13 19:50*	*1*
2-Fluorophenol (Surr)	*60*		*25 - 130*	*08/23/13 15:49*	*08/26/13 19:50*	*1*
Nitrobenzene-d5 (Surr)	*70*		*39 - 130*	*08/23/13 15:49*	*08/26/13 19:50*	*1*
Phenol-d5 (Surr)	*55*		*25 - 130*	*08/23/13 15:49*	*08/26/13 19:50*	*1*
Terphenyl-d14 (Surr)	*43*		*10 - 143*	*08/23/13 15:49*	*08/26/13 19:50*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*31 - 141*	*08/23/13 15:49*	*08/26/13 19:50*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**19**	**J B**	50	11	ug/L			08/28/13 12:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*94*		*70 - 130*		*08/28/13 12:08*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**360**	**B**	97	27	ug/L		08/28/13 07:23	08/28/13 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*74*		*50 - 150*	*08/28/13 07:23*	*08/28/13 17:40*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: TB01 (0802113)
Date Collected: 08/21/13 00:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/29/13 01:24	1
Benzene	1.0	U	1.0	0.34	ug/L			08/29/13 01:24	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/29/13 01:24	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/29/13 01:24	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/29/13 01:24	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/29/13 01:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 01:24	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/29/13 01:24	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/29/13 01:24	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/29/13 01:24	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/29/13 01:24	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/29/13 01:24	1
2-Hexanone	25	U	25	3.1	ug/L			08/29/13 01:24	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/29/13 01:24	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/29/13 01:24	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/29/13 01:24	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/29/13 01:24	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/29/13 01:24	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/29/13 01:24	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/29/13 01:24	1
Styrene	1.0	U	1.0	1.0	ug/L			08/29/13 01:24	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/29/13 01:24	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/29/13 01:24	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/29/13 01:24	1
Toluene	1.0	U	1.0	0.70	ug/L			08/29/13 01:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 01:24	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/29/13 01:24	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/29/13 01:24	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/29/13 01:24	1

Client Sample ID: TB01 (0802113)
Date Collected: 08/21/13 00:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/29/13 01:24	1
Xylenes, Total	10	U	10	1.6	ug/L			08/29/13 01:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*78 - 118*		*08/29/13 01:24*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*08/29/13 01:24*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/29/13 01:24*	*1*

Client Sample ID: SB02-07 (0.5-1.5)
Date Collected: 08/21/13 08:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-4
Matrix: Solid
Percent Solids: 52.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	46	U *	46	14	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Benzene	9.3	U	9.3	0.91	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Bromodichloromethane	9.3	U	9.3	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Bromoform	9.3	U	9.3	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Bromomethane	9.3	U	9.3	2.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Carbon disulfide	9.3	U	9.3	2.2	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Carbon tetrachloride	9.3	U	9.3	3.2	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Chlorobenzene	9.3	U	9.3	0.97	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Chloroethane	9.3	U	9.3	3.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Chloroform	9.3	U	9.3	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Chloromethane	9.3	U	9.3	1.9	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
cis-1,2-Dichloroethene	9.3	U	9.3	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
cis-1,3-Dichloropropene	9.3	U	9.3	2.2	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Cyclohexane	9.3	U	9.3	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Dibromochloromethane	9.3	U	9.3	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,2-Dibromo-3-Chloropropane	9.3	U	9.3	6.1	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,2-Dichlorobenzene	9.3	U	9.3	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,3-Dichlorobenzene	9.3	U	9.3	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,4-Dichlorobenzene	9.3	U	9.3	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Dichlorodifluoromethane	9.3	U	9.3	2.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,1-Dichloroethane	9.3	U	9.3	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,2-Dichloroethane	9.3	U	9.3	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,1-Dichloroethene	9.3	U	9.3	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,2-Dichloropropane	9.3	U	9.3	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Diisopropyl ether	9.3	U	9.3	1.0	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Ethylbenzene	9.3	U	9.3	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Ethylene Dibromide	9.3	U	9.3	0.89	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Ethyl tert-butyl ether	9.3	U	9.3	1.0	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
2-Hexanone	46	U	46	9.3	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Isopropylbenzene	9.3	U	9.3	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Methyl acetate	9.3	U	9.3	8.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Methylcyclohexane	9.3	U	9.3	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Methylene Chloride	28	U	28	19	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Methyl Ethyl Ketone	46	U	46	7.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
methyl isobutyl ketone	46	U	46	7.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-07 (0.5-1.5)
Date Collected: 08/21/13 08:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-4
Matrix: Solid
Percent Solids: 52.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	9.3	U	9.3	1.9	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Naphthalene	9.3	U	9.3	1.9	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Styrene	9.3	U	9.3	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Tert-amyl methyl ether	9.3	U	9.3	0.82	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
tert-Butyl alcohol	9.3	U	9.3	6.3	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,1,2,2-Tetrachloroethane	9.3	U	9.3	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Tetrachloroethene	9.3	U	9.3	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Toluene	9.3	U	9.3	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
trans-1,2-Dichloroethene	9.3	U	9.3	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
trans-1,3-Dichloropropene	9.3	U	9.3	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,2,4-Trichlorobenzene	9.3	U	9.3	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,1,1-Trichloroethane	9.3	U	9.3	2.0	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,1,2-Trichloroethane	9.3	U	9.3	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Trichloroethene	9.3	U	9.3	0.89	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Trichlorofluoromethane	**6.6**	**J**	9.3	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	9.3	U	9.3	3.7	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Vinyl chloride	9.3	U	9.3	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1
Xylenes, Total	19	U	19	3.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/26/13 09:52*	*08/28/13 13:11*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/26/13 09:52*	*08/28/13 13:11*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 09:52*	*08/28/13 13:11*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	620	U	620	110	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Phenol	620	U	620	64	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Bis(2-chloroethyl)ether	620	U	620	85	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2-Chlorophenol	620	U	620	76	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2-Methylphenol	620	U	620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
bis (2-chloroisopropyl) ether	620	U	620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Acetophenone	**80**	**J**	620	53	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
3 & 4 Methylphenol	620	U	620	81	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
N-Nitrosodi-n-propylamine	620	U	620	60	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Hexachloroethane	620	U	620	53	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Nitrobenzene	620	U	620	49	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Isophorone	620	U	620	62	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2-Nitrophenol	620	U	620	77	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2,4-Dimethylphenol	620	U	620	83	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Bis(2-chloroethoxy)methane	620	U	620	74	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2,4-Dichlorophenol	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Naphthalene	**530**	**J**	620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
4-Chloroaniline	1200	U	1200	98	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Hexachlorobutadiene	620	U	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Caprolactam	620	U	620	120	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
4-Chloro-3-methylphenol	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2-Methylnaphthalene	**590**	**J**	620	72	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Hexachlorocyclopentadiene	620	U	620	77	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2,4,6-Trichlorophenol	620	U	620	55	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-07 (0.5-1.5)
Date Collected: 08/21/13 08:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-4
Matrix: Solid
Percent Solids: 52.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
1,1'-Biphenyl	1400	U	1400	1400	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2-Chloronaphthalene	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2-Nitroaniline	3200	U	3200	85	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Dimethyl phthalate	620	U	620	64	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2,6-Dinitrotoluene	620	U	620	79	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Acenaphthylene	620	U	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
3-Nitroaniline	3200	U	3200	87	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Acenaphthene	620	U	620	77	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2,4-Dinitrophenol	3200	U	3200	1600	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
4-Nitrophenol	3200	U	3200	620	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Dibenzofuran	**160**	**J**	620	62	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
2,4-Dinitrotoluene	620	U	620	92	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Diethyl phthalate	620	U	620	70	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Fluorene	620	U	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
4-Chlorophenyl phenyl ether	620	U	620	83	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
4-Nitroaniline	3200	U	3200	92	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
4,6-Dinitro-2-methylphenol	3200	U	3200	320	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
N-Nitrosodiphenylamine	620	U *	620	62	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
4-Bromophenyl phenyl ether	620	U	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Hexachlorobenzene	620	U	620	74	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Atrazine	620	U	620	43	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Pentachlorophenol	3200	U	3200	620	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Phenanthrene	**310**	**J**	620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Anthracene	620	U	620	47	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Carbazole	620	U	620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Di-n-butyl phthalate	620	U	620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Fluoranthene	**290**	**J**	620	60	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Pyrene	**98**	**J**	620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Butyl benzyl phthalate	620	U	620	49	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
3,3'-Dichlorobenzidine	1200	U	1200	53	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Benzo[a]anthracene	**91**	**J**	620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Chrysene	**120**	**J**	620	40	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Bis(2-ethylhexyl) phthalate	620	U	620	55	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Di-n-octyl phthalate	620	U	620	55	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Benzo[b]fluoranthene	620	U	620	72	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Benzo[k]fluoranthene	620	U	620	120	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Benzo[a]pyrene	620	U	620	98	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Indeno[1,2,3-cd]pyrene	**140**	**J**	620	53	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Dibenz(a,h)anthracene	**83**	**J**	620	74	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1
Benzo[g,h,i]perylene	**120**	**J**	620	42	ug/Kg	☼	08/26/13 21:27	08/30/13 11:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*65*		*46 - 130*	*08/26/13 21:27*	*08/30/13 11:35*	*1*
2-Fluorobiphenyl	*52*	*X*	*58 - 130*	*08/26/13 21:27*	*08/30/13 11:35*	*1*
Terphenyl-d14 (Surr)	*58*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 11:35*	*1*
Phenol-d5 (Surr)	*59*		*49 - 130*	*08/26/13 21:27*	*08/30/13 11:35*	*1*
2-Fluorophenol (Surr)	*58*		*40 - 130*	*08/26/13 21:27*	*08/30/13 11:35*	*1*
2,4,6-Tribromophenol (Surr)	*59*		*58 - 130*	*08/26/13 21:27*	*08/30/13 11:35*	*1*

Client Sample ID: SB02-07 (0.5-1.5)

Lab Sample ID: 680-93498-4

Date Collected: 08/21/13 08:50
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 52.6

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	670		500	38	ug/Kg	☼	08/22/13 14:33	08/23/13 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*136*	*X*	*70 - 131*	*08/22/13 14:33*	*08/23/13 16:26*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	6700	J	9400	2600	ug/Kg	☼	08/26/13 14:47	08/29/13 00:17	1
ORO C24-C40	5100	J	9400	2600	ug/Kg	☼	08/26/13 14:47	08/29/13 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*73*		*50 - 150*	*08/26/13 14:47*	*08/29/13 00:17*	*1*

Client Sample ID: SB02-07 (5.5-6.5)

Lab Sample ID: 680-93498-5

Date Collected: 08/21/13 09:00
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 82.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	24	*	22	6.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Benzene	4.4	U	4.4	0.43	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Bromodichloromethane	4.4	U	4.4	0.75	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Bromoform	4.4	U	4.4	0.56	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Bromomethane	4.4	U	4.4	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Carbon disulfide	4.4	U	4.4	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Carbon tetrachloride	4.4	U	4.4	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Chlorobenzene	4.4	U	4.4	0.46	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Chloroethane	4.4	U	4.4	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Chloroform	4.4	U	4.4	0.52	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Chloromethane	4.4	U	4.4	0.89	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
cis-1,2-Dichloroethene	4.4	U	4.4	0.67	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
cis-1,3-Dichloropropene	4.4	U	4.4	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Cyclohexane	4.4	U	4.4	0.83	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Dibromochloromethane	4.4	U	4.4	0.77	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,2-Dibromo-3-Chloropropane	4.4	U	4.4	2.9	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,2-Dichlorobenzene	4.4	U	4.4	0.63	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,3-Dichlorobenzene	4.4	U	4.4	0.84	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,4-Dichlorobenzene	4.4	U	4.4	0.73	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Dichlorodifluoromethane	4.4	U	4.4	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,1-Dichloroethane	4.4	U	4.4	0.74	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,2-Dichloroethane	4.4	U	4.4	0.73	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,1-Dichloroethene	4.4	U	4.4	0.67	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,2-Dichloropropane	4.4	U	4.4	0.66	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Diisopropyl ether	4.4	U	4.4	0.49	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Ethylbenzene	4.4	U	4.4	0.54	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Ethylene Dibromide	4.4	U	4.4	0.43	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Ethyl tert-butyl ether	4.4	U	4.4	0.50	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
2-Hexanone	22	U	22	4.4	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Isopropylbenzene	4.4	U	4.4	0.60	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Methyl acetate	4.4	U	4.4	4.1	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-07 (5.5-6.5)
Date Collected: 08/21/13 09:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-5
Matrix: Solid
Percent Solids: 82.0

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	4.4	U	4.4	0.77	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Methylene Chloride	13	U	13	8.9	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Methyl Ethyl Ketone	22	U	22	3.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
methyl isobutyl ketone	22	U	22	3.6	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Methyl tert-butyl ether	4.4	U	4.4	0.89	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Naphthalene	4.4	U	4.4	0.89	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Styrene	4.4	U	4.4	0.67	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Tert-amyl methyl ether	4.4	U	4.4	0.39	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
tert-Butyl alcohol	4.4	U	4.4	3.0	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,1,2,2-Tetrachloroethane	4.4	U	4.4	0.64	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Tetrachloroethene	4.4	U	4.4	0.75	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Toluene	4.4	U	4.4	0.62	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
trans-1,2-Dichloroethene	4.4	U	4.4	0.67	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
trans-1,3-Dichloropropene	4.4	U	4.4	0.82	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,2,4-Trichlorobenzene	4.4	U	4.4	0.65	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,1,1-Trichloroethane	4.4	U	4.4	0.98	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,1,2-Trichloroethane	4.4	U	4.4	0.82	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Trichloroethene	4.4	U	4.4	0.43	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Trichlorofluoromethane	4.4	U	4.4	0.84	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.4	U	4.4	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Vinyl chloride	4.4	U	4.4	0.82	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1
Xylenes, Total	8.9	U	8.9	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/26/13 09:52*	*08/28/13 13:34*	*1*
Dibromofluoromethane	*105*		*79 - 123*	*08/26/13 09:52*	*08/28/13 13:34*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/13 09:52*	*08/28/13 13:34*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Phenol	400	U	400	41	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Isophorone	400	U	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-07 (5.5-6.5)
Date Collected: 08/21/13 09:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-5
Matrix: Solid
Percent Solids: 82.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
1,1'-Biphenyl	900	U	900	900	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Fluorene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
4-Nitroaniline	2100	U	2100	59	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
N-Nitrosodiphenylamine	400	U *	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Atrazine	400	U	400	28	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Anthracene	400	U	400	30	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Carbazole	400	U	400	36	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Pyrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Chrysene	400	U	400	25	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/26/13 21:27	08/30/13 11:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*76*		*46 - 130*	*08/26/13 21:27*	*08/30/13 11:59*	*1*
2-Fluorobiphenyl	*91*		*58 - 130*	*08/26/13 21:27*	*08/30/13 11:59*	*1*
Terphenyl-d14 (Surr)	*117*		*60 - 130*	*08/26/13 21:27*	*08/30/13 11:59*	*1*

Client Sample ID: SB02-07 (5.5-6.5)

Lab Sample ID: 680-93498-5
Date Collected: 08/21/13 09:00
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 82.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*73*		*49 - 130*	*08/26/13 21:27*	*08/30/13 11:59*	*1*
2-Fluorophenol (Surr)	*73*		*40 - 130*	*08/26/13 21:27*	*08/30/13 11:59*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*58 - 130*	*08/26/13 21:27*	*08/30/13 11:59*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**800**		230	18	ug/Kg	☼	08/22/13 14:33	08/23/13 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*98*		*70 - 131*	*08/22/13 14:33*	*08/23/13 16:46*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**3100**	**J**	5900	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 00:01	1
ORO C24-C40	5900	U	5900	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*79*		*50 - 150*	*08/26/13 14:47*	*08/29/13 00:01*	*1*

Client Sample ID: SB02-08 (0.5-1.5)

Lab Sample ID: 680-93498-6
Date Collected: 08/21/13 09:10
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 72.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	28	U *	28	8.2	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Benzene	5.6	U	5.6	0.55	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Bromodichloromethane	5.6	U	5.6	0.94	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Bromoform	5.6	U	5.6	0.70	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Bromomethane	5.6	U	5.6	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Carbon disulfide	5.6	U	5.6	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Carbon tetrachloride	5.6	U	5.6	1.9	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Chlorobenzene	5.6	U	5.6	0.58	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Chloroethane	5.6	U	5.6	2.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Chloroform	5.6	U	5.6	0.66	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Chloromethane	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
cis-1,2-Dichloroethene	5.6	U	5.6	0.85	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
cis-1,3-Dichloropropene	5.6	U	5.6	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Cyclohexane	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Dibromochloromethane	5.6	U	5.6	0.97	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,2-Dibromo-3-Chloropropane	5.6	U	5.6	3.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,2-Dichlorobenzene	5.6	U	5.6	0.79	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,3-Dichlorobenzene	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,4-Dichlorobenzene	5.6	U	5.6	0.92	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Dichlorodifluoromethane	5.6	U	5.6	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,1-Dichloroethane	5.6	U	5.6	0.93	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,2-Dichloroethane	5.6	U	5.6	0.92	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,1-Dichloroethene	5.6	U	5.6	0.84	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,2-Dichloropropane	5.6	U	5.6	0.83	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1

Client Sample ID: SB02-08 (0.5-1.5)
Date Collected: 08/21/13 09:10
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-6
Matrix: Solid
Percent Solids: 72.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diisopropyl ether	5.6	U	5.6	0.61	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Ethylbenzene	5.6	U	5.6	0.68	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Ethylene Dibromide	5.6	U	5.6	0.54	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Ethyl tert-butyl ether	5.6	U	5.6	0.63	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
2-Hexanone	28	U	28	5.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Isopropylbenzene	5.6	U	5.6	0.76	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Methyl acetate	5.6	U	5.6	5.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Methylcyclohexane	5.6	U	5.6	0.97	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Methylene Chloride	17	U	17	11	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Methyl Ethyl Ketone	28	U	28	4.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
methyl isobutyl ketone	28	U	28	4.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Methyl tert-butyl ether	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Naphthalene	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Styrene	5.6	U	5.6	0.85	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Tert-amyl methyl ether	5.6	U	5.6	0.49	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
tert-Butyl alcohol	5.6	U	5.6	3.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,1,2,2-Tetrachloroethane	5.6	U	5.6	0.80	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Tetrachloroethene	5.6	U	5.6	0.94	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Toluene	5.6	U	5.6	0.78	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
trans-1,2-Dichloroethene	5.6	U	5.6	0.85	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
trans-1,3-Dichloropropene	5.6	U	5.6	1.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,2,4-Trichlorobenzene	5.6	U	5.6	0.82	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,1,1-Trichloroethane	5.6	U	5.6	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,1,2-Trichloroethane	5.6	U	5.6	1.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Trichloroethene	5.6	U	5.6	0.54	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Trichlorofluoromethane	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.6	U	5.6	2.2	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Vinyl chloride	5.6	U	5.6	1.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1
Xylenes, Total	11	U	11	2.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/26/13 09:52*	*08/28/13 14:00*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/26/13 09:52*	*08/28/13 14:00*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/26/13 09:52*	*08/28/13 14:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	450	U	450	80	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Phenol	450	U	450	47	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Bis(2-chloroethyl)ether	450	U	450	62	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2-Chlorophenol	450	U	450	55	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2-Methylphenol	450	U	450	37	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
bis (2-chloroisopropyl) ether	450	U	450	41	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Acetophenone	**71**	**J**	450	39	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
3 & 4 Methylphenol	450	U	450	59	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
N-Nitrosodi-n-propylamine	450	U	450	44	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Hexachloroethane	450	U	450	39	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Nitrobenzene	450	U	450	36	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Isophorone	450	U	450	45	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2-Nitrophenol	450	U	450	57	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-08 (0.5-1.5)
Date Collected: 08/21/13 09:10
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-6
Matrix: Solid
Percent Solids: 72.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	450	U	450	61	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Bis(2-chloroethoxy)methane	450	U	450	54	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2,4-Dichlorophenol	450	U	450	48	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Naphthalene	**640**		450	41	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
4-Chloroaniline	910	U	910	72	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Hexachlorobutadiene	450	U	450	50	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Caprolactam	**94**	**J**	450	91	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
4-Chloro-3-methylphenol	450	U	450	48	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2-Methylnaphthalene	**670**		450	52	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Hexachlorocyclopentadiene	450	U	450	57	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2,4,6-Trichlorophenol	450	U	450	40	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2,4,5-Trichlorophenol	450	U	450	48	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
1,1'-Biphenyl	1000	U	1000	1000	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2-Chloronaphthalene	450	U	450	48	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2-Nitroaniline	2300	U	2300	62	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Dimethyl phthalate	450	U	450	47	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2,6-Dinitrotoluene	450	U	450	58	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Acenaphthylene	450	U	450	50	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
3-Nitroaniline	2300	U	2300	63	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Acenaphthene	450	U	450	57	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2,4-Dinitrophenol	2300	U	2300	1100	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
4-Nitrophenol	2300	U	2300	450	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Dibenzofuran	**310**	**J**	450	45	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
2,4-Dinitrotoluene	450	U	450	68	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Diethyl phthalate	450	U	450	51	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Fluorene	**62**	**J**	450	50	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
4-Chlorophenyl phenyl ether	450	U	450	61	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
4-Nitroaniline	2300	U	2300	68	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
4,6-Dinitro-2-methylphenol	2300	U	2300	230	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
N-Nitrosodiphenylamine	450	U *	450	45	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
4-Bromophenyl phenyl ether	450	U	450	50	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Hexachlorobenzene	450	U	450	54	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Atrazine	450	U	450	32	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Pentachlorophenol	2300	U	2300	450	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Phenanthrene	**650**		450	37	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Anthracene	**93**	**J**	450	34	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Carbazole	450	U	450	41	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Di-n-butyl phthalate	450	U	450	41	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Fluoranthene	**470**		450	44	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Pyrene	**200**	**J**	450	37	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Butyl benzyl phthalate	450	U	450	36	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
3,3'-Dichlorobenzidine	910	U	910	39	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Benzo[a]anthracene	**130**	**J**	450	37	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Chrysene	**260**	**J**	450	29	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Bis(2-ethylhexyl) phthalate	450	U	450	40	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Di-n-octyl phthalate	450	U	450	40	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Benzo[b]fluoranthene	**330**	**J**	450	52	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Benzo[k]fluoranthene	450	U	450	90	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Benzo[a]pyrene	450	U	450	72	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1

Client Sample ID: SB02-08 (0.5-1.5)
Date Collected: 08/21/13 09:10
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-6
Matrix: Solid
Percent Solids: 72.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	210	J	450	39	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Dibenz(a,h)anthracene	67	J	450	54	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1
Benzo[g,h,i]perylene	160	J	450	30	ug/Kg	☼	08/26/13 21:27	08/30/13 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*63*		*46 - 130*	*08/26/13 21:27*	*08/30/13 12:23*	*1*
2-Fluorobiphenyl	*49*	*X*	*58 - 130*	*08/26/13 21:27*	*08/30/13 12:23*	*1*
Terphenyl-d14 (Surr)	*58*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 12:23*	*1*
Phenol-d5 (Surr)	*51*		*49 - 130*	*08/26/13 21:27*	*08/30/13 12:23*	*1*
2-Fluorophenol (Surr)	*47*		*40 - 130*	*08/26/13 21:27*	*08/30/13 12:23*	*1*
2,4,6-Tribromophenol (Surr)	*37*	*X*	*58 - 130*	*08/26/13 21:27*	*08/30/13 12:23*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	450	U H	450	79	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Phenol	450	U H	450	46	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Bis(2-chloroethyl)ether	450	U H	450	61	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2-Chlorophenol	450	U H	450	55	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2-Methylphenol	450	U H	450	37	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
bis (2-chloroisopropyl) ether	450	U H	450	41	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Acetophenone	450	U H	450	38	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
3 & 4 Methylphenol	450	U H	450	59	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
N-Nitrosodi-n-propylamine	450	U H	450	44	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Hexachloroethane	450	U H	450	38	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Nitrobenzene	450	U H	450	35	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Isophorone	450	U H	450	45	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2-Nitrophenol	450	U H	450	56	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2,4-Dimethylphenol	450	U H	450	60	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Bis(2-chloroethoxy)methane	450	U H *	450	53	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2,4-Dichlorophenol	450	U H *	450	48	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Naphthalene	41	J H *	450	41	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
4-Chloroaniline	900	U H *	900	71	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Hexachlorobutadiene	450	U H	450	49	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Caprolactam	450	U H	450	90	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
4-Chloro-3-methylphenol	450	U H	450	48	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2-Methylnaphthalene	450	U H *	450	52	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Hexachlorocyclopentadiene	450	U H	450	56	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2,4,6-Trichlorophenol	450	U H	450	40	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2,4,5-Trichlorophenol	450	U H *	450	48	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
1,1'-Biphenyl	1000	U H *	1000	1000	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2-Chloronaphthalene	450	U H *	450	48	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2-Nitroaniline	2300	U H	2300	61	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Dimethyl phthalate	450	U H *	450	46	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2,6-Dinitrotoluene	450	U H *	450	57	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Acenaphthylene	450	U H *	450	49	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
3-Nitroaniline	2300	U H	2300	63	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Acenaphthene	450	U H *	450	56	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
2,4-Dinitrophenol	2300	U H	2300	1100	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
4-Nitrophenol	2300	U H	2300	450	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Dibenzofuran	450	U H *	450	45	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1

Client Sample ID: SB02-08 (0.5-1.5)
Date Collected: 08/21/13 09:10
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-6
Matrix: Solid
Percent Solids: 72.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	450	U H *	450	67	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Diethyl phthalate	450	U H *	450	50	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Fluorene	450	U H *	450	49	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
4-Chlorophenyl phenyl ether	450	U H *	450	60	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
4-Nitroaniline	2300	U H	2300	67	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
4,6-Dinitro-2-methylphenol	2300	U H	2300	230	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
N-Nitrosodiphenylamine	450	U H *	450	45	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
4-Bromophenyl phenyl ether	450	U H *	450	49	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Hexachlorobenzene	450	U H *	450	53	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Atrazine	450	U H	450	31	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Pentachlorophenol	2300	U H	2300	450	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Phenanthrene	**110**	**J H ***	450	37	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Anthracene	450	U H *	450	34	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Carbazole	450	U H	450	41	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Di-n-butyl phthalate	450	U H *	450	41	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Fluoranthene	**120**	**J H ***	450	44	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Pyrene	**95**	**J H ***	450	37	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Butyl benzyl phthalate	450	U H *	450	35	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
3,3'-Dichlorobenzidine	900	U H	900	38	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Benzo[a]anthracene	**60**	**J H ***	450	37	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Chrysene	**71**	**J H ***	450	29	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Bis(2-ethylhexyl) phthalate	450	U H	450	40	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Di-n-octyl phthalate	450	U H	450	40	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Benzo[b]fluoranthene	**62**	**J H ***	450	52	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Benzo[k]fluoranthene	450	U H *	450	89	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Benzo[a]pyrene	450	U H *	450	71	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Indeno[1,2,3-cd]pyrene	**42**	**J H**	450	38	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Dibenz(a,h)anthracene	450	U H *	450	53	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1
Benzo[g,h,i]perylene	**36**	**J H**	450	30	ug/Kg	☼	09/09/13 19:28	09/11/13 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*65*		*46 - 130*	*09/09/13 19:28*	*09/11/13 15:52*	*1*
2-Fluorobiphenyl	*66*		*58 - 130*	*09/09/13 19:28*	*09/11/13 15:52*	*1*
Terphenyl-d14 (Surr)	*73*		*60 - 130*	*09/09/13 19:28*	*09/11/13 15:52*	*1*
Phenol-d5 (Surr)	*71*		*49 - 130*	*09/09/13 19:28*	*09/11/13 15:52*	*1*
2-Fluorophenol (Surr)	*70*		*40 - 130*	*09/09/13 19:28*	*09/11/13 15:52*	*1*
2,4,6-Tribromophenol (Surr)	*65*		*58 - 130*	*09/09/13 19:28*	*09/11/13 15:52*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**540**		270	21	ug/Kg	☼	08/22/13 14:33	08/23/13 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*139*	*X*	*70 - 131*	*08/22/13 14:33*	*08/23/13 17:06*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**5500**	**J**	6900	1900	ug/Kg	☼	08/26/13 14:47	08/29/13 00:33	1
ORO C24-C40	**6800**	**J**	6900	1900	ug/Kg	☼	08/26/13 14:47	08/29/13 00:33	1

Client Sample ID: SB02-08 (0.5-1.5) — **Lab Sample ID: 680-93498-6**
Date Collected: 08/21/13 09:10 — **Matrix: Solid**
Date Received: 08/22/13 09:39 — **Percent Solids: 72.5**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	*67*		*50 - 150*	*08/26/13 14:47*	*08/29/13 00:33*	*1*

Client Sample ID: SB02-08 (7.0-8.0) — **Lab Sample ID: 680-93498-7**
Date Collected: 08/21/13 09:20 — **Matrix: Solid**
Date Received: 08/22/13 09:39 — **Percent Solids: 83.6**

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	U *	22	6.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Benzene	4.4	U	4.4	0.43	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Bromodichloromethane	4.4	U	4.4	0.74	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Bromoform	4.4	U	4.4	0.55	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Bromomethane	4.4	U	4.4	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Carbon disulfide	4.4	U	4.4	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Carbon tetrachloride	4.4	U	4.4	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Chlorobenzene	4.4	U	4.4	0.46	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Chloroethane	4.4	U	4.4	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Chloroform	4.4	U	4.4	0.52	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Chloromethane	4.4	U	4.4	0.88	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
cis-1,2-Dichloroethene	4.4	U	4.4	0.67	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
cis-1,3-Dichloropropene	4.4	U	4.4	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Cyclohexane	4.4	U	4.4	0.83	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Dibromochloromethane	4.4	U	4.4	0.77	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,2-Dibromo-3-Chloropropane	4.4	U	4.4	2.9	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,2-Dichlorobenzene	4.4	U	4.4	0.62	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,3-Dichlorobenzene	4.4	U	4.4	0.84	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,4-Dichlorobenzene	4.4	U	4.4	0.72	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Dichlorodifluoromethane	4.4	U	4.4	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,1-Dichloroethane	4.4	U	4.4	0.73	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,2-Dichloroethane	4.4	U	4.4	0.72	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,1-Dichloroethene	4.4	U	4.4	0.66	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,2-Dichloropropane	4.4	U	4.4	0.65	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Diisopropyl ether	4.4	U	4.4	0.48	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Ethylbenzene	4.4	U	4.4	0.54	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Ethylene Dibromide	4.4	U	4.4	0.42	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Ethyl tert-butyl ether	4.4	U	4.4	0.49	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
2-Hexanone	22	U	22	4.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Isopropylbenzene	4.4	U	4.4	0.60	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Methyl acetate	4.4	U	4.4	4.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Methylcyclohexane	4.4	U	4.4	0.77	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Methylene Chloride	13	U	13	8.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Methyl Ethyl Ketone	22	U	22	3.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
methyl isobutyl ketone	22	U	22	3.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Methyl tert-butyl ether	4.4	U	4.4	0.88	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Naphthalene	4.4	U	4.4	0.88	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Styrene	4.4	U	4.4	0.67	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Tert-amyl methyl ether	4.4	U	4.4	0.39	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
tert-Butyl alcohol	4.4	U	4.4	3.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,1,2,2-Tetrachloroethane	4.4	U	4.4	0.63	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Tetrachloroethene	4.4	U	4.4	0.74	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-08 (7.0-8.0)
Date Collected: 08/21/13 09:20
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-7
Matrix: Solid
Percent Solids: 83.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	4.4	U	4.4	0.62	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
trans-1,2-Dichloroethene	4.4	U	4.4	0.67	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
trans-1,3-Dichloropropene	4.4	U	4.4	0.81	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,2,4-Trichlorobenzene	4.4	U	4.4	0.64	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,1,1-Trichloroethane	4.4	U	4.4	0.97	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,1,2-Trichloroethane	4.4	U	4.4	0.81	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Trichloroethene	4.4	U	4.4	0.42	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Trichlorofluoromethane	4.4	U	4.4	0.84	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.4	U	4.4	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Vinyl chloride	4.4	U	4.4	0.81	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1
Xylenes, Total	8.8	U	8.8	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/26/13 09:52*	*08/28/13 14:23*	*1*
Dibromofluoromethane	*105*		*79 - 123*	*08/26/13 09:52*	*08/28/13 14:23*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/26/13 09:52*	*08/28/13 14:23*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	390	U	390	69	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Phenol	390	U	390	41	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Bis(2-chloroethyl)ether	390	U	390	54	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2-Chlorophenol	390	U	390	48	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2-Methylphenol	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
bis (2-chloroisopropyl) ether	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Acetophenone	390	U	390	33	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
3 & 4 Methylphenol	390	U	390	51	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
N-Nitrosodi-n-propylamine	390	U	390	38	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Hexachloroethane	390	U	390	33	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Nitrobenzene	390	U	390	31	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Isophorone	390	U	390	39	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2-Nitrophenol	390	U	390	49	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2,4-Dimethylphenol	390	U	390	53	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Bis(2-chloroethoxy)methane	390	U	390	47	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2,4-Dichlorophenol	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Naphthalene	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
4-Chloroaniline	790	U	790	62	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Hexachlorobutadiene	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Caprolactam	390	U	390	79	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
4-Chloro-3-methylphenol	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2-Methylnaphthalene	390	U	390	45	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Hexachlorocyclopentadiene	390	U	390	49	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2,4,6-Trichlorophenol	390	U	390	35	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2,4,5-Trichlorophenol	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
1,1'-Biphenyl	880	U	880	880	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2-Chloronaphthalene	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2-Nitroaniline	2000	U	2000	54	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Dimethyl phthalate	390	U	390	41	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2,6-Dinitrotoluene	390	U	390	50	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Acenaphthylene	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1

Client Sample ID: SB02-08 (7.0-8.0)
Date Collected: 08/21/13 09:20
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-7
Matrix: Solid
Percent Solids: 83.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	2000	U	2000	55	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Acenaphthene	390	U	390	49	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2,4-Dinitrophenol	2000	U	2000	990	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
4-Nitrophenol	2000	U	2000	390	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Dibenzofuran	390	U	390	39	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
2,4-Dinitrotoluene	390	U	390	58	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Diethyl phthalate	390	U	390	44	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Fluorene	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
4-Chlorophenyl phenyl ether	390	U	390	53	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
4-Nitroaniline	2000	U	2000	58	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
N-Nitrosodiphenylamine	390	U *	390	39	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
4-Bromophenyl phenyl ether	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Hexachlorobenzene	390	U	390	47	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Atrazine	390	U	390	27	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Pentachlorophenol	2000	U	2000	390	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Phenanthrene	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Anthracene	390	U	390	30	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Carbazole	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Di-n-butyl phthalate	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Fluoranthene	**91**	**J**	390	38	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Pyrene	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Butyl benzyl phthalate	390	U	390	31	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
3,3'-Dichlorobenzidine	790	U	790	33	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Benzo[a]anthracene	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Chrysene	390	U	390	25	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Bis(2-ethylhexyl) phthalate	390	U	390	35	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Di-n-octyl phthalate	390	U	390	35	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Benzo[b]fluoranthene	390	U	390	45	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Benzo[k]fluoranthene	390	U	390	78	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Benzo[a]pyrene	390	U	390	62	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Indeno[1,2,3-cd]pyrene	390	U	390	33	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Dibenz(a,h)anthracene	390	U	390	47	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1
Benzo[g,h,i]perylene	390	U	390	26	ug/Kg	☼	08/26/13 21:27	08/30/13 12:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*46 - 130*	*08/26/13 21:27*	*08/30/13 12:48*	*1*
2-Fluorobiphenyl	*81*		*58 - 130*	*08/26/13 21:27*	*08/30/13 12:48*	*1*
Terphenyl-d14 (Surr)	*67*		*60 - 130*	*08/26/13 21:27*	*08/30/13 12:48*	*1*
Phenol-d5 (Surr)	*65*		*49 - 130*	*08/26/13 21:27*	*08/30/13 12:48*	*1*
2-Fluorophenol (Surr)	*68*		*40 - 130*	*08/26/13 21:27*	*08/30/13 12:48*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*58 - 130*	*08/26/13 21:27*	*08/30/13 12:48*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**200**	**J**	220	17	ug/Kg	☼	08/22/13 14:33	08/23/13 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*109*		*70 - 131*	*08/22/13 14:33*	*08/23/13 17:26*	*1*

Client Sample ID: SB02-08 (7.0-8.0)

Lab Sample ID: 680-93498-7

Date Collected: 08/21/13 09:20
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 83.6

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	4600	J	5900	1600	ug/Kg	☼	08/26/13 14:47	08/29/13 00:49	1
ORO C24-C40	3000	J	5900	1600	ug/Kg	☼	08/26/13 14:47	08/29/13 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*61*		*50 - 150*	*08/26/13 14:47*	*08/29/13 00:49*	*1*

Client Sample ID: SB02-09 (0.5-1.5)

Lab Sample ID: 680-93498-8

Date Collected: 08/21/13 10:00
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 52.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	49	U *	49	14	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Benzene	9.8	U	9.8	0.96	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Bromodichloromethane	9.8	U	9.8	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Bromoform	9.8	U	9.8	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Bromomethane	9.8	U	9.8	2.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Carbon disulfide	9.8	U	9.8	2.3	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Carbon tetrachloride	9.8	U	9.8	3.3	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Chlorobenzene	9.8	U	9.8	1.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Chloroethane	9.8	U	9.8	3.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Chloroform	9.8	U	9.8	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Chloromethane	9.8	U	9.8	2.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
cis-1,2-Dichloroethene	9.8	U	9.8	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
cis-1,3-Dichloropropene	9.8	U	9.8	2.3	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Cyclohexane	9.8	U	9.8	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Dibromochloromethane	9.8	U	9.8	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,2-Dibromo-3-Chloropropane	9.8	U	9.8	6.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,2-Dichlorobenzene	9.8	U	9.8	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,3-Dichlorobenzene	9.8	U	9.8	1.9	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,4-Dichlorobenzene	9.8	U	9.8	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Dichlorodifluoromethane	9.8	U	9.8	2.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,1-Dichloroethane	9.8	U	9.8	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,2-Dichloroethane	9.8	U	9.8	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,1-Dichloroethene	9.8	U	9.8	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,2-Dichloropropane	9.8	U	9.8	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Diisopropyl ether	9.8	U	9.8	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Ethylbenzene	9.8	U	9.8	1.2	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Ethylene Dibromide	9.8	U	9.8	0.94	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Ethyl tert-butyl ether	9.8	U	9.8	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
2-Hexanone	49	U	49	9.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Isopropylbenzene	9.8	U	9.8	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Methyl acetate	9.8	U	9.8	9.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Methylcyclohexane	9.8	U	9.8	1.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Methylene Chloride	29	U	29	20	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Methyl Ethyl Ketone	49	U	49	8.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
methyl isobutyl ketone	49	U	49	7.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Methyl tert-butyl ether	9.8	U	9.8	2.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Naphthalene	9.8	U	9.8	2.0	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Styrene	9.8	U	9.8	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1

Client Sample ID: SB02-09 (0.5-1.5)
Date Collected: 08/21/13 10:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-8
Matrix: Solid
Percent Solids: 52.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tert-amyl methyl ether	9.8	U	9.8	0.86	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
tert-Butyl alcohol	9.8	U	9.8	6.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,1,2,2-Tetrachloroethane	9.8	U	9.8	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Tetrachloroethene	9.8	U	9.8	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Toluene	9.8	U	9.8	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
trans-1,2-Dichloroethene	9.8	U	9.8	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
trans-1,3-Dichloropropene	9.8	U	9.8	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,2,4-Trichlorobenzene	9.8	U	9.8	1.4	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,1,1-Trichloroethane	9.8	U	9.8	2.1	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,1,2-Trichloroethane	9.8	U	9.8	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Trichloroethene	9.8	U	9.8	0.94	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Trichlorofluoromethane	9.8	U	9.8	1.9	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	9.8	U	9.8	3.9	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Vinyl chloride	9.8	U	9.8	1.8	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1
Xylenes, Total	20	U	20	3.7	ug/Kg	☼	08/26/13 09:52	08/28/13 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 122*	*08/26/13 09:52*	*08/28/13 14:46*	*1*
Dibromofluoromethane	*105*		*79 - 123*	*08/26/13 09:52*	*08/28/13 14:46*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*08/26/13 09:52*	*08/28/13 14:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	620	U	620	110	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Phenol	620	U	620	64	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Bis(2-chloroethyl)ether	620	U	620	85	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2-Chlorophenol	620	U	620	75	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2-Methylphenol	620	U	620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
bis (2-chloroisopropyl) ether	620	U	620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Acetophenone	**250**	**J**	620	53	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
3 & 4 Methylphenol	620	U	620	81	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
N-Nitrosodi-n-propylamine	620	U	620	60	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Hexachloroethane	620	U	620	53	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Nitrobenzene	620	U	620	49	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Isophorone	620	U	620	62	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2-Nitrophenol	620	U	620	77	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2,4-Dimethylphenol	620	U	620	83	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Bis(2-chloroethoxy)methane	620	U	620	74	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2,4-Dichlorophenol	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Naphthalene	**1400**		620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
4-Chloroaniline	1200	U	1200	98	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Hexachlorobutadiene	620	U	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Caprolactam	**230**	**J**	620	120	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
4-Chloro-3-methylphenol	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2-Methylnaphthalene	**1800**		620	72	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Hexachlorocyclopentadiene	620	U	620	77	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2,4,6-Trichlorophenol	620	U	620	55	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2,4,5-Trichlorophenol	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
1,1'-Biphenyl	1400	U	1400	1400	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2-Chloronaphthalene	620	U	620	66	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-09 (0.5-1.5)
Date Collected: 08/21/13 10:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-8
Matrix: Solid
Percent Solids: 52.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	3200	U	3200	85	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Dimethyl phthalate	620	U	620	64	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2,6-Dinitrotoluene	620	U	620	79	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Acenaphthylene	**70**	**J**	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
3-Nitroaniline	3200	U	3200	87	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Acenaphthene	620	U	620	77	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2,4-Dinitrophenol	3200	U	3200	1600	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
4-Nitrophenol	3200	U	3200	620	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Dibenzofuran	**550**	**J**	620	62	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
2,4-Dinitrotoluene	620	U	620	92	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Diethyl phthalate	620	U	620	70	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Fluorene	620	U	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
4-Chlorophenyl phenyl ether	620	U	620	83	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
4-Nitroaniline	3200	U	3200	92	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
4,6-Dinitro-2-methylphenol	3200	U	3200	320	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
N-Nitrosodiphenylamine	620	U *	620	62	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
4-Bromophenyl phenyl ether	620	U	620	68	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Hexachlorobenzene	620	U	620	74	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Atrazine	620	U	620	43	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Pentachlorophenol	3200	U	3200	620	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Phenanthrene	**1100**		620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Anthracene	**130**	**J**	620	47	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Carbazole	**98**	**J**	620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Di-n-butyl phthalate	620	U	620	57	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Fluoranthene	**710**		620	60	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Pyrene	**360**	**J**	620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Butyl benzyl phthalate	620	U	620	49	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
3,3'-Dichlorobenzidine	1200	U	1200	53	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Benzo[a]anthracene	**280**	**J**	620	51	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Chrysene	**560**	**J**	620	40	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Bis(2-ethylhexyl) phthalate	620	U	620	55	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Di-n-octyl phthalate	620	U	620	55	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Benzo[b]fluoranthene	**560**	**J**	620	72	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Benzo[k]fluoranthene	620	U	620	120	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Benzo[a]pyrene	**230**	**J**	620	98	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Indeno[1,2,3-cd]pyrene	**200**	**J**	620	53	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Dibenz(a,h)anthracene	**78**	**J**	620	74	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1
Benzo[g,h,i]perylene	**190**	**J**	620	41	ug/Kg	☼	08/26/13 21:27	08/30/13 13:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*58*		*46 - 130*	*08/26/13 21:27*	*08/30/13 13:12*	*1*
2-Fluorobiphenyl	*63*		*58 - 130*	*08/26/13 21:27*	*08/30/13 13:12*	*1*
Terphenyl-d14 (Surr)	*53*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 13:12*	*1*
Phenol-d5 (Surr)	*43*	*X*	*49 - 130*	*08/26/13 21:27*	*08/30/13 13:12*	*1*
2-Fluorophenol (Surr)	*38*	*X*	*40 - 130*	*08/26/13 21:27*	*08/30/13 13:12*	*1*
2,4,6-Tribromophenol (Surr)	*51*	*X*	*58 - 130*	*08/26/13 21:27*	*08/30/13 13:12*	*1*

Client Sample ID: SB02-09 (0.5-1.5)

Lab Sample ID: 680-93498-8

Date Collected: 08/21/13 10:00
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 52.6

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	5600		420	32	ug/Kg	☼	08/22/13 14:33	08/23/13 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*185*	*X*	*70 - 131*	*08/22/13 14:33*	*08/23/13 17:46*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	4600	J	9500	2700	ug/Kg	☼	08/26/13 14:47	08/29/13 01:04	1
ORO C24-C40	9500	U	9500	2700	ug/Kg	☼	08/26/13 14:47	08/29/13 01:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*67*		*50 - 150*	*08/26/13 14:47*	*08/29/13 01:04*	*1*

Client Sample ID: SB02-09 (4.5-5.5)

Lab Sample ID: 680-93498-9

Date Collected: 08/21/13 10:10
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 82.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	8.1	J *	20	5.7	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Benzene	3.9	U	3.9	0.38	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Bromodichloromethane	3.9	U	3.9	0.66	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Bromoform	3.9	U	3.9	0.49	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Bromomethane	3.9	U	3.9	1.1	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Carbon disulfide	3.9	U	3.9	0.94	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Carbon tetrachloride	3.9	U	3.9	1.3	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Chlorobenzene	3.9	U	3.9	0.41	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Chloroethane	3.9	U	3.9	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Chloroform	3.9	U	3.9	0.46	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Chloromethane	3.9	U	3.9	0.78	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
cis-1,2-Dichloroethene	3.9	U	3.9	0.59	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
cis-1,3-Dichloropropene	3.9	U	3.9	0.94	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Cyclohexane	3.9	U	3.9	0.73	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Dibromochloromethane	3.9	U	3.9	0.68	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,2-Dibromo-3-Chloropropane	3.9	U	3.9	2.6	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,2-Dichlorobenzene	3.9	U	3.9	0.55	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,3-Dichlorobenzene	3.9	U	3.9	0.74	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,4-Dichlorobenzene	3.9	U	3.9	0.64	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Dichlorodifluoromethane	3.9	U	3.9	1.0	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,1-Dichloroethane	3.9	U	3.9	0.65	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,2-Dichloroethane	3.9	U	3.9	0.64	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,1-Dichloroethene	3.9	U	3.9	0.59	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,2-Dichloropropane	3.9	U	3.9	0.58	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Diisopropyl ether	3.9	U	3.9	0.43	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Ethylbenzene	3.9	U	3.9	0.48	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Ethylene Dibromide	3.9	U	3.9	0.37	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Ethyl tert-butyl ether	3.9	U	3.9	0.44	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
2-Hexanone	20	U	20	3.9	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Isopropylbenzene	3.9	U	3.9	0.53	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Methyl acetate	3.9	U	3.9	3.6	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-09 (4.5-5.5)
Date Collected: 08/21/13 10:10
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-9
Matrix: Solid
Percent Solids: 82.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	3.9	U	3.9	0.68	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Methylene Chloride	12	U	12	7.8	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Methyl Ethyl Ketone	20	U	20	3.2	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
methyl isobutyl ketone	20	U	20	3.1	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Methyl tert-butyl ether	3.9	U	3.9	0.78	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Naphthalene	3.9	U	3.9	0.78	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Styrene	3.9	U	3.9	0.59	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Tert-amyl methyl ether	3.9	U	3.9	0.34	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
tert-Butyl alcohol	3.9	U	3.9	2.7	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,1,2,2-Tetrachloroethane	3.9	U	3.9	0.56	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Tetrachloroethene	3.9	U	3.9	0.66	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Toluene	3.9	U	3.9	0.55	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
trans-1,2-Dichloroethene	3.9	U	3.9	0.59	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
trans-1,3-Dichloropropene	3.9	U	3.9	0.72	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,2,4-Trichlorobenzene	3.9	U	3.9	0.57	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,1,1-Trichloroethane	3.9	U	3.9	0.86	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,1,2-Trichloroethane	3.9	U	3.9	0.72	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Trichloroethene	3.9	U	3.9	0.37	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Trichlorofluoromethane	3.9	U	3.9	0.74	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.9	U	3.9	1.6	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Vinyl chloride	3.9	U	3.9	0.72	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1
Xylenes, Total	7.8	U	7.8	1.5	ug/Kg	☼	08/26/13 09:52	08/28/13 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/26/13 09:52*	*08/28/13 15:09*	*1*
Dibromofluoromethane	*106*		*79 - 123*	*08/26/13 09:52*	*08/28/13 15:09*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 09:52*	*08/28/13 15:09*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	390	U	390	69	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Phenol	390	U	390	40	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Bis(2-chloroethyl)ether	390	U	390	54	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2-Chlorophenol	390	U	390	48	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2-Methylphenol	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
bis (2-chloroisopropyl) ether	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Acetophenone	390	U	390	33	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
3 & 4 Methylphenol	390	U	390	51	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
N-Nitrosodi-n-propylamine	390	U	390	38	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Hexachloroethane	390	U	390	33	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Nitrobenzene	390	U	390	31	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Isophorone	390	U	390	39	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2-Nitrophenol	390	U	390	49	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2,4-Dimethylphenol	390	U	390	52	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Bis(2-chloroethoxy)methane	390	U	390	46	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2,4-Dichlorophenol	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Naphthalene	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
4-Chloroaniline	790	U	790	62	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Hexachlorobutadiene	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Caprolactam	390	U	390	79	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-09 (4.5-5.5)
Date Collected: 08/21/13 10:10
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-9
Matrix: Solid
Percent Solids: 82.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2-Methylnaphthalene	390	U	390	45	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Hexachlorocyclopentadiene	390	U	390	49	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2,4,6-Trichlorophenol	390	U	390	35	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2,4,5-Trichlorophenol	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
1,1'-Biphenyl	880	U	880	880	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2-Chloronaphthalene	390	U	390	42	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2-Nitroaniline	2000	U	2000	54	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Dimethyl phthalate	390	U	390	40	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2,6-Dinitrotoluene	390	U	390	50	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Acenaphthylene	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
3-Nitroaniline	2000	U	2000	55	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Acenaphthene	390	U	390	49	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2,4-Dinitrophenol	2000	U	2000	990	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
4-Nitrophenol	2000	U	2000	390	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Dibenzofuran	390	U	390	39	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
2,4-Dinitrotoluene	390	U	390	58	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Diethyl phthalate	390	U	390	44	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Fluorene	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
4-Chlorophenyl phenyl ether	390	U	390	52	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
4-Nitroaniline	2000	U	2000	58	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
4,6-Dinitro-2-methylphenol	2000	U	2000	200	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
N-Nitrosodiphenylamine	390	U *	390	39	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
4-Bromophenyl phenyl ether	390	U	390	43	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Hexachlorobenzene	390	U	390	46	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Atrazine	390	U	390	27	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Pentachlorophenol	2000	U	2000	390	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Phenanthrene	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Anthracene	390	U	390	30	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Carbazole	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Di-n-butyl phthalate	390	U	390	36	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Fluoranthene	390	U	390	38	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Pyrene	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Butyl benzyl phthalate	390	U	390	31	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
3,3'-Dichlorobenzidine	790	U	790	33	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Benzo[a]anthracene	390	U	390	32	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Chrysene	390	U	390	25	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Bis(2-ethylhexyl) phthalate	390	U	390	35	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Di-n-octyl phthalate	390	U	390	35	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Benzo[b]fluoranthene	390	U	390	45	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Benzo[k]fluoranthene	390	U	390	77	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Benzo[a]pyrene	390	U	390	62	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Indeno[1,2,3-cd]pyrene	390	U	390	33	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Dibenz(a,h)anthracene	390	U	390	46	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1
Benzo[g,h,i]perylene	390	U	390	26	ug/Kg	☼	08/26/13 21:27	08/30/13 13:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*46 - 130*	*08/26/13 21:27*	*08/30/13 13:37*	*1*
2-Fluorobiphenyl	*85*		*58 - 130*	*08/26/13 21:27*	*08/30/13 13:37*	*1*
Terphenyl-d14 (Surr)	*74*		*60 - 130*	*08/26/13 21:27*	*08/30/13 13:37*	*1*

Client Sample ID: SB02-09 (4.5-5.5) — **Lab Sample ID: 680-93498-9**
Date Collected: 08/21/13 10:10 — **Matrix: Solid**
Date Received: 08/22/13 09:39 — **Percent Solids: 82.8**

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5 (Surr)	*69*		*49 - 130*	*08/26/13 21:27*	*08/30/13 13:37*	*1*
2-Fluorophenol (Surr)	*70*		*40 - 130*	*08/26/13 21:27*	*08/30/13 13:37*	*1*
2,4,6-Tribromophenol (Surr)	*90*		*58 - 130*	*08/26/13 21:27*	*08/30/13 13:37*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	210	U	210	16	ug/Kg	☼	08/22/13 14:33	08/23/13 18:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*106*		*70 - 131*	*08/22/13 14:33*	*08/23/13 18:06*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**5200**	**J**	6000	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 01:20	1
ORO C24-C40	**4800**	**J**	6000	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 01:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*69*		*50 - 150*	*08/26/13 14:47*	*08/29/13 01:20*	*1*

Client Sample ID: SB02-10 (0.5-1.5) — **Lab Sample ID: 680-93498-10**
Date Collected: 08/21/13 10:20 — **Matrix: Solid**
Date Received: 08/22/13 09:39 — **Percent Solids: 57.0**

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	34	U	34	9.9	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Benzene	6.8	U	6.8	0.66	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Bromodichloromethane	6.8	U	6.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Bromoform	6.8	U	6.8	0.85	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Bromomethane	6.8	U	6.8	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Carbon disulfide	6.8	U	6.8	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Carbon tetrachloride	6.8	U	6.8	2.3	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Chlorobenzene	6.8	U	6.8	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Chloroethane	6.8	U	6.8	2.6	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Chloroform	6.8	U	6.8	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Chloromethane	6.8	U	6.8	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
cis-1,2-Dichloroethene	6.8	U	6.8	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
cis-1,3-Dichloropropene	6.8	U	6.8	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Cyclohexane	6.8	U	6.8	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Dibromochloromethane	6.8	U	6.8	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,2-Dibromo-3-Chloropropane	6.8	U	6.8	4.5	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,2-Dichlorobenzene	6.8	U	6.8	0.96	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,3-Dichlorobenzene	6.8	U	6.8	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,4-Dichlorobenzene	6.8	U	6.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Dichlorodifluoromethane	6.8	U	6.8	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,1-Dichloroethane	6.8	U	6.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,2-Dichloroethane	6.8	U	6.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,1-Dichloroethene	6.8	U	6.8	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,2-Dichloropropane	6.8	U	6.8	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1

Client Sample ID: SB02-10 (0.5-1.5)
Date Collected: 08/21/13 10:20
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-10
Matrix: Solid
Percent Solids: 57.0

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diisopropyl ether	6.8	U	6.8	0.74	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Ethylbenzene	6.8	U	6.8	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Ethylene Dibromide	6.8	U	6.8	0.65	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Ethyl tert-butyl ether	6.8	U	6.8	0.76	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
2-Hexanone	34	U	34	6.8	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Isopropylbenzene	6.8	U	6.8	0.92	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Methyl acetate	6.8	U	6.8	6.2	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Methylcyclohexane	6.8	U	6.8	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Methylene Chloride	20	U	20	14	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Methyl Ethyl Ketone	34	U	34	5.5	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
methyl isobutyl ketone	34	U	34	5.4	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Methyl tert-butyl ether	6.8	U	6.8	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Naphthalene	6.8	U	6.8	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Styrene	6.8	U	6.8	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Tert-amyl methyl ether	6.8	U	6.8	0.60	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
tert-Butyl alcohol	6.8	U	6.8	4.6	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,1,2,2-Tetrachloroethane	6.8	U	6.8	0.97	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Tetrachloroethene	6.8	U	6.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Toluene	6.8	U	6.8	0.95	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
trans-1,2-Dichloroethene	6.8	U	6.8	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
trans-1,3-Dichloropropene	6.8	U	6.8	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,2,4-Trichlorobenzene	6.8	U	6.8	0.99	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,1,1-Trichloroethane	6.8	U	6.8	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,1,2-Trichloroethane	6.8	U	6.8	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Trichloroethene	6.8	U	6.8	0.65	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Trichlorofluoromethane	6.8	U	6.8	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	6.8	U	6.8	2.7	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Vinyl chloride	6.8	U	6.8	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1
Xylenes, Total	14	U	14	2.6	ug/Kg	☼	08/26/13 09:52	08/29/13 08:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*72 - 122*	*08/26/13 09:52*	*08/29/13 08:56*	*1*
Dibromofluoromethane	*105*		*79 - 123*	*08/26/13 09:52*	*08/29/13 08:56*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 09:52*	*08/29/13 08:56*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	580	U	580	100	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Phenol	580	U	580	60	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Bis(2-chloroethyl)ether	580	U	580	79	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2-Chlorophenol	580	U	580	70	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2-Methylphenol	580	U	580	47	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
bis (2-chloroisopropyl) ether	580	U	580	53	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Acetophenone	580	U	580	49	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
3 & 4 Methylphenol	580	U	580	75	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
N-Nitrosodi-n-propylamine	580	U	580	56	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Hexachloroethane	580	U	580	49	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Nitrobenzene	580	U	580	46	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Isophorone	580	U	580	58	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2-Nitrophenol	580	U	580	72	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-10 (0.5-1.5)
Date Collected: 08/21/13 10:20
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-10
Matrix: Solid
Percent Solids: 57.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	580	U	580	77	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Bis(2-chloroethoxy)methane	580	U	580	68	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2,4-Dichlorophenol	580	U	580	61	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Naphthalene	**69**	**J**	580	53	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
4-Chloroaniline	1200	U	1200	91	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Hexachlorobutadiene	580	U	580	63	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Caprolactam	580	U	580	120	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
4-Chloro-3-methylphenol	580	U	580	61	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2-Methylnaphthalene	**78**	**J**	580	67	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Hexachlorocyclopentadiene	580	U	580	72	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2,4,6-Trichlorophenol	580	U	580	51	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2,4,5-Trichlorophenol	580	U	580	61	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
1,1'-Biphenyl	1300	U	1300	1300	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2-Chloronaphthalene	580	U	580	61	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2-Nitroaniline	3000	U	3000	79	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Dimethyl phthalate	580	U	580	60	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2,6-Dinitrotoluene	580	U	580	74	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Acenaphthylene	580	U	580	63	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
3-Nitroaniline	3000	U	3000	81	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Acenaphthene	580	U	580	72	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2,4-Dinitrophenol	3000	U	3000	1500	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
4-Nitrophenol	3000	U	3000	580	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Dibenzofuran	580	U	580	58	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
2,4-Dinitrotoluene	580	U	580	86	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Diethyl phthalate	580	U	580	65	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Fluorene	580	U	580	63	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
4-Chlorophenyl phenyl ether	580	U	580	77	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
4-Nitroaniline	3000	U	3000	86	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
4,6-Dinitro-2-methylphenol	3000	U	3000	300	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
N-Nitrosodiphenylamine	580	U *	580	58	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
4-Bromophenyl phenyl ether	580	U	580	63	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Hexachlorobenzene	580	U	580	68	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Atrazine	580	U	580	40	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Pentachlorophenol	3000	U	3000	580	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Phenanthrene	580	U	580	47	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Anthracene	580	U	580	44	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Carbazole	580	U	580	53	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Di-n-butyl phthalate	580	U	580	53	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Fluoranthene	**140**	**J**	580	56	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Pyrene	580	U	580	47	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Butyl benzyl phthalate	580	U	580	46	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
3,3'-Dichlorobenzidine	1200	U	1200	49	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Benzo[a]anthracene	580	U	580	47	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Chrysene	580	U	580	37	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Bis(2-ethylhexyl) phthalate	580	U	580	51	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Di-n-octyl phthalate	580	U	580	51	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Benzo[b]fluoranthene	580	U	580	67	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Benzo[k]fluoranthene	580	U	580	110	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Benzo[a]pyrene	580	U	580	91	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1

Client Sample ID: SB02-10 (0.5-1.5)

Lab Sample ID: 680-93498-10
Date Collected: 08/21/13 10:20
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 57.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	580	U	580	49	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Dibenz(a,h)anthracene	580	U	580	68	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1
Benzo[g,h,i]perylene	580	U	580	39	ug/Kg	☼	08/26/13 21:27	08/30/13 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*68*		*46 - 130*	*08/26/13 21:27*	*08/30/13 14:01*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/26/13 21:27*	*08/30/13 14:01*	*1*
Terphenyl-d14 (Surr)	*55*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 14:01*	*1*
Phenol-d5 (Surr)	*59*		*49 - 130*	*08/26/13 21:27*	*08/30/13 14:01*	*1*
2-Fluorophenol (Surr)	*61*		*40 - 130*	*08/26/13 21:27*	*08/30/13 14:01*	*1*
2,4,6-Tribromophenol (Surr)	*71*		*58 - 130*	*08/26/13 21:27*	*08/30/13 14:01*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**660**		380	29	ug/Kg	☼	08/22/13 14:33	08/23/13 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*160*	*X*	*70 - 131*	*08/22/13 14:33*	*08/23/13 18:25*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**5400**	**J**	8700	2400	ug/Kg	☼	08/26/13 14:47	08/29/13 01:36	1
ORO C24-C40	8700	U	8700	2400	ug/Kg	☼	08/26/13 14:47	08/29/13 01:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*62*		*50 - 150*	*08/26/13 14:47*	*08/29/13 01:36*	*1*

Client Sample ID: SB02-10 (5.0-6.0)

Lab Sample ID: 680-93498-11
Date Collected: 08/21/13 10:30
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	24	U	24	7.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Benzene	4.8	U	4.8	0.47	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Bromodichloromethane	4.8	U	4.8	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Bromoform	4.8	U	4.8	0.60	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Bromomethane	4.8	U	4.8	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Carbon disulfide	4.8	U	4.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Carbon tetrachloride	4.8	U	4.8	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Chlorobenzene	4.8	U	4.8	0.50	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Chloroethane	4.8	U	4.8	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Chloroform	4.8	U	4.8	0.57	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Chloromethane	4.8	U	4.8	0.96	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
cis-1,2-Dichloroethene	4.8	U	4.8	0.73	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
cis-1,3-Dichloropropene	4.8	U	4.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Cyclohexane	4.8	U	4.8	0.90	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Dibromochloromethane	4.8	U	4.8	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,2-Dibromo-3-Chloropropane	4.8	U	4.8	3.2	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,2-Dichlorobenzene	4.8	U	4.8	0.68	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1

Client Sample ID: SB02-10 (5.0-6.0)
Date Collected: 08/21/13 10:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-11
Matrix: Solid
Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	4.8	U	4.8	0.91	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,4-Dichlorobenzene	4.8	U	4.8	0.79	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Dichlorodifluoromethane	4.8	U	4.8	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,1-Dichloroethane	4.8	U	4.8	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,2-Dichloroethane	4.8	U	4.8	0.79	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,1-Dichloroethene	4.8	U	4.8	0.72	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,2-Dichloropropane	4.8	U	4.8	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Diisopropyl ether	4.8	U	4.8	0.53	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Ethylbenzene	4.8	U	4.8	0.58	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Ethylene Dibromide	4.8	U	4.8	0.46	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Ethyl tert-butyl ether	4.8	U	4.8	0.54	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
2-Hexanone	24	U	24	4.8	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Isopropylbenzene	4.8	U	4.8	0.65	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Methyl acetate	4.8	U	4.8	4.4	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Methylcyclohexane	4.8	U	4.8	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Methylene Chloride	14	U	14	9.6	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Methyl Ethyl Ketone	24	U	24	3.9	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
methyl isobutyl ketone	24	U	24	3.8	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Methyl tert-butyl ether	4.8	U	4.8	0.96	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Naphthalene	4.8	U	4.8	0.96	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Styrene	4.8	U	4.8	0.73	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Tert-amyl methyl ether	4.8	U	4.8	0.42	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
tert-Butyl alcohol	4.8	U	4.8	3.3	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,1,2,2-Tetrachloroethane	4.8	U	4.8	0.69	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Tetrachloroethene	4.8	U	4.8	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Toluene	4.8	U	4.8	0.67	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
trans-1,2-Dichloroethene	4.8	U	4.8	0.73	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
trans-1,3-Dichloropropene	4.8	U	4.8	0.88	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,2,4-Trichlorobenzene	4.8	U	4.8	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,1,1-Trichloroethane	4.8	U	4.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,1,2-Trichloroethane	4.8	U	4.8	0.88	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Trichloroethene	4.8	U	4.8	0.46	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Trichlorofluoromethane	4.8	U	4.8	0.91	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.8	U	4.8	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Vinyl chloride	4.8	U	4.8	0.88	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1
Xylenes, Total	9.6	U	9.6	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 09:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/26/13 09:52*	*08/29/13 09:21*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/26/13 09:52*	*08/29/13 09:21*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 09:52*	*08/29/13 09:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Phenol	400	U	400	41	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-10 (5.0-6.0)
Date Collected: 08/21/13 10:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-11
Matrix: Solid
Percent Solids: 81.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetophenone	400	U	400	34	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Isophorone	400	U	400	40	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
1,1'-Biphenyl	890	U	890	890	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2-Nitroaniline	2100	U	2100	54	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Fluorene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
4-Nitroaniline	2100	U	2100	59	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
N-Nitrosodiphenylamine	400	U *	400	40	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Atrazine	400	U	400	28	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Anthracene	400	U	400	30	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Carbazole	400	U	400	36	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Pyrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1

Client Sample ID: SB02-10 (5.0-6.0)
Date Collected: 08/21/13 10:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-11
Matrix: Solid
Percent Solids: 81.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Chrysene	400	U	400	25	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/26/13 21:27	09/01/13 02:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*77*		*46 - 130*	*08/26/13 21:27*	*09/01/13 02:58*	*1*
2-Fluorobiphenyl	*80*		*58 - 130*	*08/26/13 21:27*	*09/01/13 02:58*	*1*
Terphenyl-d14 (Surr)	*88*		*60 - 130*	*08/26/13 21:27*	*09/01/13 02:58*	*1*
Phenol-d5 (Surr)	*76*		*49 - 130*	*08/26/13 21:27*	*09/01/13 02:58*	*1*
2-Fluorophenol (Surr)	*85*		*40 - 130*	*08/26/13 21:27*	*09/01/13 02:58*	*1*
2,4,6-Tribromophenol (Surr)	*107*		*58 - 130*	*08/26/13 21:27*	*09/01/13 02:58*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	240	U	240	18	ug/Kg	☼	08/22/13 14:33	08/24/13 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*83*		*70 - 131*	*08/22/13 14:33*	*08/24/13 14:39*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**3300**	**J**	6100	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 01:51	1
ORO C24-C40	6100	U	6100	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 01:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*81*		*50 - 150*	*08/26/13 14:47*	*08/29/13 01:51*	*1*

Client Sample ID: SB03-01 (0.5-1.5)
Date Collected: 08/21/13 12:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-12
Matrix: Solid
Percent Solids: 74.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**23**	**J**	27	8.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Benzene	5.5	U	5.5	0.54	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Bromodichloromethane	5.5	U	5.5	0.92	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Bromoform	5.5	U	5.5	0.69	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Bromomethane	5.5	U	5.5	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Carbon disulfide	5.5	U	5.5	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Carbon tetrachloride	5.5	U	5.5	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Chlorobenzene	5.5	U	5.5	0.57	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Chloroethane	5.5	U	5.5	2.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Chloroform	5.5	U	5.5	0.65	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-01 (0.5-1.5)
Date Collected: 08/21/13 12:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-12
Matrix: Solid
Percent Solids: 74.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	5.5	U	5.5	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
cis-1,2-Dichloroethene	5.5	U	5.5	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
cis-1,3-Dichloropropene	5.5	U	5.5	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Cyclohexane	5.5	U	5.5	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Dibromochloromethane	5.5	U	5.5	0.95	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,2-Dibromo-3-Chloropropane	5.5	U	5.5	3.6	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,2-Dichlorobenzene	5.5	U	5.5	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,3-Dichlorobenzene	5.5	U	5.5	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,4-Dichlorobenzene	5.5	U	5.5	0.90	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Dichlorodifluoromethane	5.5	U	5.5	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,1-Dichloroethane	5.5	U	5.5	0.91	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,2-Dichloroethane	5.5	U	5.5	0.90	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,1-Dichloroethene	5.5	U	5.5	0.82	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,2-Dichloropropane	5.5	U	5.5	0.81	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Diisopropyl ether	5.5	U	5.5	0.60	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Ethylbenzene	5.5	U	5.5	0.67	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Ethylene Dibromide	5.5	U	5.5	0.53	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Ethyl tert-butyl ether	5.5	U	5.5	0.61	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
2-Hexanone	27	U	27	5.5	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Isopropylbenzene	5.5	U	5.5	0.74	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Methyl acetate	5.5	U	5.5	5.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Methylcyclohexane	5.5	U	5.5	0.95	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Methylene Chloride	16	U	16	11	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Methyl Ethyl Ketone	27	U	27	4.5	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
methyl isobutyl ketone	27	U	27	4.4	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Methyl tert-butyl ether	5.5	U	5.5	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Naphthalene	5.5	U	5.5	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Styrene	5.5	U	5.5	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Tert-amyl methyl ether	5.5	U	5.5	0.48	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
tert-Butyl alcohol	5.5	U	5.5	3.7	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,1,2,2-Tetrachloroethane	5.5	U	5.5	0.79	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Tetrachloroethene	5.5	U	5.5	0.92	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Toluene	5.5	U	5.5	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
trans-1,2-Dichloroethene	5.5	U	5.5	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
trans-1,3-Dichloropropene	5.5	U	5.5	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,2,4-Trichlorobenzene	5.5	U	5.5	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,1,1-Trichloroethane	5.5	U	5.5	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,1,2-Trichloroethane	5.5	U	5.5	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Trichloroethene	5.5	U	5.5	0.53	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Trichlorofluoromethane	5.5	U	5.5	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.5	U	5.5	2.2	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Vinyl chloride	5.5	U	5.5	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1
Xylenes, Total	11	U	11	2.1	ug/Kg	☼	08/26/13 09:52	08/29/13 09:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 122*	*08/26/13 09:52*	*08/29/13 09:43*	*1*
Dibromofluoromethane	*102*		*79 - 123*	*08/26/13 09:52*	*08/29/13 09:43*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/26/13 09:52*	*08/29/13 09:43*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-01 (0.5-1.5)
Date Collected: 08/21/13 12:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-12
Matrix: Solid
Percent Solids: 74.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	440	U	440	77	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Phenol	440	U	440	45	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Bis(2-chloroethyl)ether	440	U	440	60	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2-Chlorophenol	440	U	440	53	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2-Methylphenol	440	U	440	36	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
bis (2-chloroisopropyl) ether	440	U	440	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Acetophenone	**62**	**J**	440	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
3 & 4 Methylphenol	440	U	440	57	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
N-Nitrosodi-n-propylamine	440	U	440	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Hexachloroethane	440	U	440	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Nitrobenzene	440	U	440	35	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Isophorone	440	U	440	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2-Nitrophenol	440	U	440	55	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2,4-Dimethylphenol	440	U	440	59	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Bis(2-chloroethoxy)methane	440	U	440	52	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2,4-Dichlorophenol	440	U	440	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Naphthalene	**470**		440	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
4-Chloroaniline	880	U	880	69	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Hexachlorobutadiene	440	U	440	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Caprolactam	440	U	440	88	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
4-Chloro-3-methylphenol	440	U	440	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2-Methylnaphthalene	**970**		440	51	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Hexachlorocyclopentadiene	440	U	440	55	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2,4,6-Trichlorophenol	440	U	440	39	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2,4,5-Trichlorophenol	440	U	440	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
1,1'-Biphenyl	990	U	990	990	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2-Chloronaphthalene	440	U	440	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2-Nitroaniline	2300	U	2300	60	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Dimethyl phthalate	440	U	440	45	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2,6-Dinitrotoluene	440	U	440	56	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Acenaphthylene	440	U	440	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
3-Nitroaniline	2300	U	2300	61	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Acenaphthene	440	U	440	55	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2,4-Dinitrophenol	2300	U	2300	1100	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
4-Nitrophenol	2300	U	2300	440	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Dibenzofuran	**160**	**J**	440	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
2,4-Dinitrotoluene	440	U	440	65	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Diethyl phthalate	440	U	440	49	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Fluorene	440	U	440	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
4-Chlorophenyl phenyl ether	440	U	440	59	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
4-Nitroaniline	2300	U	2300	65	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
4,6-Dinitro-2-methylphenol	2300	U	2300	230	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
N-Nitrosodiphenylamine	440	U *	440	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
4-Bromophenyl phenyl ether	440	U	440	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Hexachlorobenzene	440	U	440	52	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Atrazine	440	U	440	31	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Pentachlorophenol	2300	U	2300	440	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Phenanthrene	**350**	**J**	440	36	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Anthracene	440	U	440	33	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1

Client Sample ID: SB03-01 (0.5-1.5)

Lab Sample ID: 680-93498-12

Date Collected: 08/21/13 12:30
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 74.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	440	U	440	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Di-n-butyl phthalate	440	U	440	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Fluoranthene	**220**	**J**	440	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Pyrene	**93**	**J**	440	36	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Butyl benzyl phthalate	440	U	440	35	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
3,3'-Dichlorobenzidine	880	U	880	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Benzo[a]anthracene	**43**	**J**	440	36	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Chrysene	**83**	**J**	440	28	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Bis(2-ethylhexyl) phthalate	440	U	440	39	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Di-n-octyl phthalate	440	U	440	39	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Benzo[b]fluoranthene	440	U	440	51	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Benzo[k]fluoranthene	440	U	440	87	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Benzo[a]pyrene	440	U	440	69	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Indeno[1,2,3-cd]pyrene	440	U	440	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Dibenz(a,h)anthracene	440	U	440	52	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1
Benzo[g,h,i]perylene	440	U	440	29	ug/Kg	☼	08/26/13 21:27	08/30/13 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*60*		*46 - 130*	*08/26/13 21:27*	*08/30/13 15:01*	*1*
2-Fluorobiphenyl	*72*		*58 - 130*	*08/26/13 21:27*	*08/30/13 15:01*	*1*
Terphenyl-d14 (Surr)	*58*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 15:01*	*1*
Phenol-d5 (Surr)	*53*		*49 - 130*	*08/26/13 21:27*	*08/30/13 15:01*	*1*
2-Fluorophenol (Surr)	*52*		*40 - 130*	*08/26/13 21:27*	*08/30/13 15:01*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*58 - 130*	*08/26/13 21:27*	*08/30/13 15:01*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	280	U	280	21	ug/Kg	☼	08/22/13 14:33	08/28/13 17:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*102*		*70 - 131*	*08/22/13 14:33*	*08/28/13 17:20*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**27000**		6700	1900	ug/Kg	☼	08/26/13 14:47	08/29/13 02:07	1
ORO C24-C40	**4500**	**J**	6700	1900	ug/Kg	☼	08/26/13 14:47	08/29/13 02:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*73*		*50 - 150*	*08/26/13 14:47*	*08/29/13 02:07*	*1*

Client Sample ID: SB03-01 (5.0-6.0)

Lab Sample ID: 680-93498-13

Date Collected: 08/21/13 12:40
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 80.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**23**		23	6.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Benzene	4.7	U	4.7	0.46	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Bromodichloromethane	4.7	U	4.7	0.79	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Bromoform	4.7	U	4.7	0.59	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-01 (5.0-6.0)
Date Collected: 08/21/13 12:40
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-13
Matrix: Solid
Percent Solids: 80.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	4.7	U	4.7	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Carbon disulfide	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Carbon tetrachloride	4.7	U	4.7	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Chlorobenzene	4.7	U	4.7	0.49	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Chloroethane	4.7	U	4.7	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Chloroform	4.7	U	4.7	0.55	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Chloromethane	4.7	U	4.7	0.94	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
cis-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
cis-1,3-Dichloropropene	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Cyclohexane	4.7	U	4.7	0.88	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Dibromochloromethane	4.7	U	4.7	0.82	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,2-Dibromo-3-Chloropropane	4.7	U	4.7	3.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,2-Dichlorobenzene	4.7	U	4.7	0.67	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,3-Dichlorobenzene	4.7	U	4.7	0.89	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,4-Dichlorobenzene	4.7	U	4.7	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Dichlorodifluoromethane	4.7	U	4.7	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,1-Dichloroethane	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,2-Dichloroethane	4.7	U	4.7	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,1-Dichloroethene	4.7	U	4.7	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,2-Dichloropropane	4.7	U	4.7	0.69	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Diisopropyl ether	4.7	U	4.7	0.52	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Ethylbenzene	4.7	U	4.7	0.57	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Ethylene Dibromide	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Ethyl tert-butyl ether	4.7	U	4.7	0.52	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
2-Hexanone	23	U	23	4.7	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Isopropylbenzene	4.7	U	4.7	0.64	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Methyl acetate	4.7	U	4.7	4.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Methylcyclohexane	4.7	U	4.7	0.82	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Methylene Chloride	14	U	14	9.4	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Methyl Ethyl Ketone	23	U	23	3.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
methyl isobutyl ketone	23	U	23	3.7	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Methyl tert-butyl ether	4.7	U	4.7	0.94	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Naphthalene	4.7	U	4.7	0.94	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Styrene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Tert-amyl methyl ether	4.7	U	4.7	0.41	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
tert-Butyl alcohol	4.7	U	4.7	3.2	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,1,2,2-Tetrachloroethane	4.7	U	4.7	0.67	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Tetrachloroethene	4.7	U	4.7	0.79	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Toluene	4.7	U	4.7	0.66	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
trans-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
trans-1,3-Dichloropropene	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,2,4-Trichlorobenzene	4.7	U	4.7	0.68	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,1,1-Trichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,1,2-Trichloroethane	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Trichloroethene	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Trichlorofluoromethane	4.7	U	4.7	0.89	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7	U	4.7	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Vinyl chloride	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1
Xylenes, Total	9.4	U	9.4	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:08	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-01 (5.0-6.0)
Date Collected: 08/21/13 12:40
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-13
Matrix: Solid
Percent Solids: 80.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		72 - 122	08/26/13 09:52	08/29/13 10:08	1
Dibromofluoromethane	105		79 - 123	08/26/13 09:52	08/29/13 10:08	1
Toluene-d8 (Surr)	98		80 - 120	08/26/13 09:52	08/29/13 10:08	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	410	U	410	71	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Phenol	410	U	410	42	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Bis(2-chloroethyl)ether	410	U	410	55	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2-Chlorophenol	410	U	410	49	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2-Methylphenol	410	U	410	33	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
bis (2-chloroisopropyl) ether	410	U	410	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Acetophenone	410	U	410	34	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
3 & 4 Methylphenol	410	U	410	53	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
N-Nitrosodi-n-propylamine	410	U	410	39	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Hexachloroethane	410	U	410	34	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Nitrobenzene	410	U	410	32	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Isophorone	410	U	410	41	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2-Nitrophenol	410	U	410	50	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2,4-Dimethylphenol	410	U	410	54	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Bis(2-chloroethoxy)methane	410	U	410	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2,4-Dichlorophenol	410	U	410	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Naphthalene	410	U	410	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
4-Chloroaniline	810	U	810	64	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Hexachlorobutadiene	410	U	410	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Caprolactam	410	U	410	81	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
4-Chloro-3-methylphenol	410	U	410	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2-Methylnaphthalene	410	U	410	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Hexachlorocyclopentadiene	410	U	410	50	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2,4,6-Trichlorophenol	410	U	410	36	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2,4,5-Trichlorophenol	410	U	410	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
1,1'-Biphenyl	910	U	910	910	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2-Chloronaphthalene	410	U	410	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Dimethyl phthalate	410	U	410	42	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2,6-Dinitrotoluene	410	U	410	52	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Acenaphthylene	410	U	410	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
3-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Acenaphthene	410	U	410	50	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
4-Nitrophenol	2100	U	2100	410	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Dibenzofuran	410	U	410	41	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
2,4-Dinitrotoluene	410	U	410	60	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Diethyl phthalate	410	U	410	46	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Fluorene	410	U	410	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
4-Chlorophenyl phenyl ether	410	U	410	54	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
N-Nitrosodiphenylamine	410	U *	410	41	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
4-Bromophenyl phenyl ether	410	U	410	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-01 (5.0-6.0)
Date Collected: 08/21/13 12:40
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-13
Matrix: Solid
Percent Solids: 80.3

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	410	U	410	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Atrazine	410	U	410	28	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Pentachlorophenol	2100	U	2100	410	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Phenanthrene	410	U	410	33	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Anthracene	410	U	410	31	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Carbazole	410	U	410	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Di-n-butyl phthalate	410	U	410	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Fluoranthene	410	U	410	39	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Pyrene	410	U	410	33	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Butyl benzyl phthalate	410	U	410	32	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
3,3'-Dichlorobenzidine	810	U	810	34	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Benzo[a]anthracene	410	U	410	33	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Chrysene	410	U	410	26	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Bis(2-ethylhexyl) phthalate	410	U	410	36	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Di-n-octyl phthalate	410	U	410	36	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Benzo[b]fluoranthene	410	U	410	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Benzo[k]fluoranthene	410	U	410	80	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Benzo[a]pyrene	410	U	410	64	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Indeno[1,2,3-cd]pyrene	410	U	410	34	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Dibenz(a,h)anthracene	410	U	410	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1
Benzo[g,h,i]perylene	410	U	410	27	ug/Kg	☼	08/26/13 21:27	08/30/13 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*67*		*46 - 130*	*08/26/13 21:27*	*08/30/13 15:26*	*1*
2-Fluorobiphenyl	*83*		*58 - 130*	*08/26/13 21:27*	*08/30/13 15:26*	*1*
Terphenyl-d14 (Surr)	*69*		*60 - 130*	*08/26/13 21:27*	*08/30/13 15:26*	*1*
Phenol-d5 (Surr)	*68*		*49 - 130*	*08/26/13 21:27*	*08/30/13 15:26*	*1*
2-Fluorophenol (Surr)	*68*		*40 - 130*	*08/26/13 21:27*	*08/30/13 15:26*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*58 - 130*	*08/26/13 21:27*	*08/30/13 15:26*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	240	U	240	18	ug/Kg	☼	08/22/13 14:33	08/24/13 15:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*89*		*70 - 131*	*08/22/13 14:33*	*08/24/13 15:18*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**11000**		6200	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 02:23	1
ORO C24-C40	**1700**	**J**	6200	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 02:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*73*		*50 - 150*	*08/26/13 14:47*	*08/29/13 02:23*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-02 (0.0-1.0)
Date Collected: 08/21/13 12:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-14
Matrix: Solid
Percent Solids: 67.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	J	29	8.4	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Benzene	5.7	U	5.7	0.56	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Bromodichloromethane	5.7	U	5.7	0.96	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Bromoform	5.7	U	5.7	0.72	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Bromomethane	5.7	U	5.7	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Carbon disulfide	5.7	U	5.7	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Carbon tetrachloride	5.7	U	5.7	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Chlorobenzene	5.7	U	5.7	0.60	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Chloroethane	5.7	U	5.7	2.2	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Chloroform	5.7	U	5.7	0.68	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Chloromethane	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
cis-1,2-Dichloroethene	5.7	U	5.7	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
cis-1,3-Dichloropropene	5.7	U	5.7	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Cyclohexane	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Dibromochloromethane	5.7	U	5.7	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,2-Dibromo-3-Chloropropane	5.7	U	5.7	3.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,2-Dichlorobenzene	5.7	U	5.7	0.81	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,3-Dichlorobenzene	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,4-Dichlorobenzene	5.7	U	5.7	0.94	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Dichlorodifluoromethane	5.7	U	5.7	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,1-Dichloroethane	5.7	U	5.7	0.95	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,2-Dichloroethane	5.7	U	5.7	0.94	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,1-Dichloroethene	5.7	U	5.7	0.86	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,2-Dichloropropane	5.7	U	5.7	0.85	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Diisopropyl ether	5.7	U	5.7	0.63	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Ethylbenzene	5.7	U	5.7	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Ethylene Dibromide	5.7	U	5.7	0.55	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Ethyl tert-butyl ether	5.7	U	5.7	0.64	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
2-Hexanone	29	U	29	5.7	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Isopropylbenzene	5.7	U	5.7	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Methyl acetate	5.7	U	5.7	5.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Methylcyclohexane	5.7	U	5.7	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Methylene Chloride	17	U	17	11	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Methyl Ethyl Ketone	29	U	29	4.7	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
methyl isobutyl ketone	29	U	29	4.6	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Methyl tert-butyl ether	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Naphthalene	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Styrene	5.7	U	5.7	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Tert-amyl methyl ether	5.7	U	5.7	0.50	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
tert-Butyl alcohol	5.7	U	5.7	3.9	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,1,2,2-Tetrachloroethane	5.7	U	5.7	0.82	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Tetrachloroethene	5.7	U	5.7	0.96	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Toluene	5.7	U	5.7	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
trans-1,2-Dichloroethene	5.7	U	5.7	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
trans-1,3-Dichloropropene	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,2,4-Trichlorobenzene	5.7	U	5.7	0.84	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,1,1-Trichloroethane	5.7	U	5.7	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,1,2-Trichloroethane	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Trichloroethene	5.7	U	5.7	0.55	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-02 (0.0-1.0)
Date Collected: 08/21/13 12:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-14
Matrix: Solid
Percent Solids: 67.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.7	U	5.7	2.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Vinyl chloride	5.7	U	5.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1
Xylenes, Total	11	U	11	2.2	ug/Kg	☼	08/26/13 09:52	08/29/13 10:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 122*	*08/26/13 09:52*	*08/29/13 10:32*	*1*
Dibromofluoromethane	*105*		*79 - 123*	*08/26/13 09:52*	*08/29/13 10:32*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/13 09:52*	*08/29/13 10:32*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	480	U	480	85	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Phenol	480	U	480	50	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Bis(2-chloroethyl)ether	480	U	480	66	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2-Chlorophenol	480	U	480	59	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2-Methylphenol	480	U	480	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
bis (2-chloroisopropyl) ether	480	U	480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Acetophenone	480	U	480	41	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
3 & 4 Methylphenol	480	U	480	63	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
N-Nitrosodi-n-propylamine	480	U	480	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Hexachloroethane	480	U	480	41	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Nitrobenzene	480	U	480	38	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Isophorone	480	U	480	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2-Nitrophenol	480	U	480	60	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2,4-Dimethylphenol	480	U	480	65	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Bis(2-chloroethoxy)methane	480	U	480	57	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2,4-Dichlorophenol	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Naphthalene	**420**	**J**	480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
4-Chloroaniline	970	U	970	76	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Hexachlorobutadiene	480	U	480	53	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Caprolactam	480	U	480	97	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
4-Chloro-3-methylphenol	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2-Methylnaphthalene	**270**	**J**	480	56	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Hexachlorocyclopentadiene	480	U	480	60	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2,4,6-Trichlorophenol	480	U	480	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2,4,5-Trichlorophenol	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
1,1'-Biphenyl	1100	U	1100	1100	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2-Chloronaphthalene	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2-Nitroaniline	2500	U	2500	66	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Dimethyl phthalate	480	U	480	50	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2,6-Dinitrotoluene	480	U	480	62	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Acenaphthylene	480	U	480	53	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
3-Nitroaniline	2500	U	2500	68	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Acenaphthene	480	U	480	60	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2,4-Dinitrophenol	2500	U	2500	1200	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
4-Nitrophenol	2500	U	2500	480	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Dibenzofuran	**67**	**J**	480	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
2,4-Dinitrotoluene	480	U	480	72	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Diethyl phthalate	480	U	480	54	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1

Client Sample ID: SB03-02 (0.0-1.0)
Date Collected: 08/21/13 12:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-14
Matrix: Solid
Percent Solids: 67.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	480	U	480	53	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
4-Chlorophenyl phenyl ether	480	U	480	65	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
4-Nitroaniline	2500	U	2500	72	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
4,6-Dinitro-2-methylphenol	2500	U	2500	250	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
N-Nitrosodiphenylamine	480	U *	480	48	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
4-Bromophenyl phenyl ether	480	U	480	53	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Hexachlorobenzene	480	U	480	57	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Atrazine	480	U	480	34	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Pentachlorophenol	2500	U	2500	480	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Phenanthrene	**150**	**J**	480	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Anthracene	**49**	**J**	480	37	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Carbazole	480	U	480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Di-n-butyl phthalate	480	U	480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Fluoranthene	**160**	**J**	480	47	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Pyrene	**56**	**J**	480	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Butyl benzyl phthalate	480	U	480	38	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
3,3'-Dichlorobenzidine	970	U	970	41	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Benzo[a]anthracene	**50**	**J**	480	40	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Chrysene	**70**	**J**	480	31	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Bis(2-ethylhexyl) phthalate	480	U	480	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Di-n-octyl phthalate	480	U	480	43	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Benzo[b]fluoranthene	480	U	480	56	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Benzo[k]fluoranthene	480	U	480	96	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Benzo[a]pyrene	480	U	480	76	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Indeno[1,2,3-cd]pyrene	480	U	480	41	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Dibenz(a,h)anthracene	480	U	480	57	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1
Benzo[g,h,i]perylene	480	U	480	32	ug/Kg	☼	08/26/13 21:27	08/30/13 15:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*57*		*46 - 130*	*08/26/13 21:27*	*08/30/13 15:50*	*1*
2-Fluorobiphenyl	*68*		*58 - 130*	*08/26/13 21:27*	*08/30/13 15:50*	*1*
Terphenyl-d14 (Surr)	*54*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 15:50*	*1*
Phenol-d5 (Surr)	*51*		*49 - 130*	*08/26/13 21:27*	*08/30/13 15:50*	*1*
2-Fluorophenol (Surr)	*53*		*40 - 130*	*08/26/13 21:27*	*08/30/13 15:50*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*58 - 130*	*08/26/13 21:27*	*08/30/13 15:50*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**1100**		310	23	ug/Kg	☼	08/22/13 15:07	08/24/13 15:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*128*		*70 - 131*	*08/22/13 15:07*	*08/24/13 15:38*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**26000**		7200	2000	ug/Kg	☼	08/26/13 14:47	08/29/13 02:38	1
ORO C24-C40	**3600**	**J**	7200	2000	ug/Kg	☼	08/26/13 14:47	08/29/13 02:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*67*		*50 - 150*	*08/26/13 14:47*	*08/29/13 02:38*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-02 (3.0-4.0)
Date Collected: 08/21/13 13:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-15
Matrix: Solid
Percent Solids: 76.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.6	J	23	6.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Benzene	4.7	U	4.7	0.46	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Bromodichloromethane	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Bromoform	4.7	U	4.7	0.59	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Bromomethane	4.7	U	4.7	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Carbon disulfide	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Carbon tetrachloride	4.7	U	4.7	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Chlorobenzene	4.7	U	4.7	0.49	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Chloroethane	4.7	U	4.7	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Chloroform	4.7	U	4.7	0.55	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Chloromethane	4.7	U	4.7	0.93	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
cis-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
cis-1,3-Dichloropropene	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Cyclohexane	4.7	U	4.7	0.88	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Dibromochloromethane	4.7	U	4.7	0.81	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,2-Dibromo-3-Chloropropane	4.7	U	4.7	3.1	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,2-Dichlorobenzene	4.7	U	4.7	0.66	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,3-Dichlorobenzene	4.7	U	4.7	0.89	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,4-Dichlorobenzene	4.7	U	4.7	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Dichlorodifluoromethane	4.7	U	4.7	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,1-Dichloroethane	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,2-Dichloroethane	4.7	U	4.7	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,1-Dichloroethene	4.7	U	4.7	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,2-Dichloropropane	4.7	U	4.7	0.69	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Diisopropyl ether	4.7	U	4.7	0.51	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Ethylbenzene	4.7	U	4.7	0.57	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Ethylene Dibromide	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Ethyl tert-butyl ether	4.7	U	4.7	0.52	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
2-Hexanone	23	U	23	4.7	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Isopropylbenzene	4.7	U	4.7	0.64	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Methyl acetate	4.7	U	4.7	4.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Methylcyclohexane	4.7	U	4.7	0.81	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Methylene Chloride	14	U	14	9.3	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Methyl Ethyl Ketone	23	U	23	3.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
methyl isobutyl ketone	23	U	23	3.7	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Methyl tert-butyl ether	4.7	U	4.7	0.93	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Naphthalene	4.7	U	4.7	0.93	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Styrene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Tert-amyl methyl ether	4.7	U	4.7	0.41	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
tert-Butyl alcohol	4.7	U	4.7	3.2	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,1,2,2-Tetrachloroethane	4.7	U	4.7	0.67	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Tetrachloroethene	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Toluene	4.7	U	4.7	0.65	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
trans-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
trans-1,3-Dichloropropene	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,2,4-Trichlorobenzene	4.7	U	4.7	0.68	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,1,1-Trichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,1,2-Trichloroethane	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Trichloroethene	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1

Client Sample ID: SB03-02 (3.0-4.0)
Date Collected: 08/21/13 13:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-15
Matrix: Solid
Percent Solids: 76.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**1.3**	**J**	4.7	0.89	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7	U	4.7	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Vinyl chloride	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1
Xylenes, Total	9.3	U	9.3	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 10:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 122*	*08/26/13 09:52*	*08/29/13 10:56*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/26/13 09:52*	*08/29/13 10:56*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 09:52*	*08/29/13 10:56*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	430	U	430	75	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Phenol	430	U	430	44	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Bis(2-chloroethyl)ether	430	U	430	58	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2-Chlorophenol	430	U	430	52	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2-Methylphenol	430	U	430	35	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
bis (2-chloroisopropyl) ether	430	U	430	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Acetophenone	430	U	430	36	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
3 & 4 Methylphenol	430	U	430	56	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
N-Nitrosodi-n-propylamine	430	U	430	41	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Hexachloroethane	430	U	430	36	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Nitrobenzene	430	U	430	34	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Isophorone	430	U	430	43	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2-Nitrophenol	430	U	430	53	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2,4-Dimethylphenol	430	U	430	57	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Bis(2-chloroethoxy)methane	430	U	430	50	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2,4-Dichlorophenol	430	U	430	45	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Naphthalene	**120**	**J**	430	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
4-Chloroaniline	850	U	850	67	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Hexachlorobutadiene	430	U	430	47	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Caprolactam	**440**		430	85	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
4-Chloro-3-methylphenol	430	U	430	45	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2-Methylnaphthalene	**70**	**J**	430	49	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Hexachlorocyclopentadiene	430	U	430	53	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2,4,6-Trichlorophenol	430	U	430	38	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2,4,5-Trichlorophenol	430	U	430	45	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
1,1'-Biphenyl	960	U	960	960	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2-Chloronaphthalene	430	U	430	45	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2-Nitroaniline	2200	U	2200	58	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Dimethyl phthalate	430	U	430	44	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2,6-Dinitrotoluene	430	U	430	54	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Acenaphthylene	430	U	430	47	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
3-Nitroaniline	2200	U	2200	59	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Acenaphthene	**120**	**J**	430	53	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
4-Nitrophenol	2200	U	2200	430	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Dibenzofuran	430	U	430	43	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
2,4-Dinitrotoluene	430	U	430	63	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Diethyl phthalate	430	U	430	48	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1

Client Sample ID: SB03-02 (3.0-4.0)
Date Collected: 08/21/13 13:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-15
Matrix: Solid
Percent Solids: 76.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**260**	**J**	430	47	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
4-Chlorophenyl phenyl ether	430	U	430	57	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
4-Nitroaniline	2200	U	2200	63	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
N-Nitrosodiphenylamine	430	U *	430	43	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
4-Bromophenyl phenyl ether	430	U	430	47	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Hexachlorobenzene	430	U	430	50	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Atrazine	430	U	430	30	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Pentachlorophenol	2200	U	2200	430	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Phenanthrene	430	U	430	35	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Anthracene	430	U	430	32	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Carbazole	430	U	430	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Di-n-butyl phthalate	430	U	430	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Fluoranthene	**120**	**J**	430	41	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Pyrene	430	U	430	35	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Butyl benzyl phthalate	430	U	430	34	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
3,3'-Dichlorobenzidine	850	U	850	36	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Benzo[a]anthracene	430	U	430	35	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Chrysene	430	U	430	27	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Bis(2-ethylhexyl) phthalate	430	U	430	38	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Di-n-octyl phthalate	430	U	430	38	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Benzo[b]fluoranthene	430	U	430	49	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Benzo[k]fluoranthene	430	U	430	84	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Benzo[a]pyrene	430	U	430	67	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Indeno[1,2,3-cd]pyrene	430	U	430	36	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Dibenz(a,h)anthracene	430	U	430	50	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1
Benzo[g,h,i]perylene	430	U	430	28	ug/Kg	☼	08/26/13 21:27	08/30/13 16:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*62*		*46 - 130*	*08/26/13 21:27*	*08/30/13 16:15*	*1*
2-Fluorobiphenyl	*81*		*58 - 130*	*08/26/13 21:27*	*08/30/13 16:15*	*1*
Terphenyl-d14 (Surr)	*68*		*60 - 130*	*08/26/13 21:27*	*08/30/13 16:15*	*1*
Phenol-d5 (Surr)	*64*		*49 - 130*	*08/26/13 21:27*	*08/30/13 16:15*	*1*
2-Fluorophenol (Surr)	*63*		*40 - 130*	*08/26/13 21:27*	*08/30/13 16:15*	*1*
2,4,6-Tribromophenol (Surr)	*83*		*58 - 130*	*08/26/13 21:27*	*08/30/13 16:15*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**380**		240	18	ug/Kg	☼	08/22/13 15:07	08/28/13 18:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*88*		*70 - 131*	*08/22/13 15:07*	*08/28/13 18:00*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**7200**		6500	1800	ug/Kg	☼	08/26/13 14:47	08/29/13 02:54	1
ORO C24-C40	**2800**	**J**	6500	1800	ug/Kg	☼	08/26/13 14:47	08/29/13 02:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*50 - 150*	*08/26/13 14:47*	*08/29/13 02:54*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-03 (0.5-1.5)
Date Collected: 08/21/13 13:20
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-16
Matrix: Solid
Percent Solids: 68.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	29	J	35	10	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Benzene	6.9	U	6.9	0.68	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Bromodichloromethane	6.9	U	6.9	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Bromoform	6.9	U	6.9	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Bromomethane	6.9	U	6.9	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Carbon disulfide	6.9	U	6.9	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Carbon tetrachloride	6.9	U	6.9	2.4	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Chlorobenzene	6.9	U	6.9	0.72	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Chloroethane	6.9	U	6.9	2.6	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Chloroform	6.9	U	6.9	0.82	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Chloromethane	6.9	U	6.9	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
cis-1,2-Dichloroethene	6.9	U	6.9	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
cis-1,3-Dichloropropene	6.9	U	6.9	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Cyclohexane	6.9	U	6.9	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Dibromochloromethane	6.9	U	6.9	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,2-Dibromo-3-Chloropropane	6.9	U	6.9	4.6	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,2-Dichlorobenzene	6.9	U	6.9	0.98	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,3-Dichlorobenzene	6.9	U	6.9	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,4-Dichlorobenzene	6.9	U	6.9	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Dichlorodifluoromethane	6.9	U	6.9	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,1-Dichloroethane	6.9	U	6.9	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,2-Dichloroethane	6.9	U	6.9	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,1-Dichloroethene	6.9	U	6.9	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,2-Dichloropropane	6.9	U	6.9	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Diisopropyl ether	6.9	U	6.9	0.76	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Ethylbenzene	6.9	U	6.9	0.84	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Ethylene Dibromide	6.9	U	6.9	0.66	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Ethyl tert-butyl ether	6.9	U	6.9	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
2-Hexanone	35	U	35	6.9	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Isopropylbenzene	6.9	U	6.9	0.94	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Methyl acetate	6.9	U	6.9	6.4	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Methylcyclohexane	6.9	U	6.9	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Methylene Chloride	21	U	21	14	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Methyl Ethyl Ketone	35	U	35	5.7	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
methyl isobutyl ketone	35	U	35	5.5	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Methyl tert-butyl ether	6.9	U	6.9	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Naphthalene	6.9	U	6.9	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Styrene	6.9	U	6.9	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Tert-amyl methyl ether	6.9	U	6.9	0.61	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
tert-Butyl alcohol	6.9	U	6.9	4.7	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,1,2,2-Tetrachloroethane	6.9	U	6.9	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Tetrachloroethene	6.9	U	6.9	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Toluene	6.9	U	6.9	0.97	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
trans-1,2-Dichloroethene	6.9	U	6.9	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
trans-1,3-Dichloropropene	6.9	U	6.9	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,2,4-Trichlorobenzene	6.9	U	6.9	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,1,1-Trichloroethane	6.9	U	6.9	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,1,2-Trichloroethane	6.9	U	6.9	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Trichloroethene	6.9	U	6.9	0.66	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1

Client Sample ID: SB03-03 (0.5-1.5)
Date Collected: 08/21/13 13:20
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-16
Matrix: Solid
Percent Solids: 68.0

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	6.9	U	6.9	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	6.9	U	6.9	2.8	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Vinyl chloride	6.9	U	6.9	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1
Xylenes, Total	14	U	14	2.6	ug/Kg	☼	08/26/13 09:52	08/29/13 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 122*	*08/26/13 09:52*	*08/29/13 13:27*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/26/13 09:52*	*08/29/13 13:27*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 09:52*	*08/29/13 13:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	480	U	480	84	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Phenol	480	U	480	50	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Bis(2-chloroethyl)ether	480	U	480	66	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2-Chlorophenol	480	U	480	58	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2-Methylphenol	480	U	480	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
bis (2-chloroisopropyl) ether	480	U	480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Acetophenone	**53**	**J**	480	41	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
3 & 4 Methylphenol	480	U	480	63	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
N-Nitrosodi-n-propylamine	480	U	480	47	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Hexachloroethane	480	U	480	41	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Nitrobenzene	480	U	480	38	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Isophorone	480	U	480	48	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2-Nitrophenol	480	U	480	60	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2,4-Dimethylphenol	480	U	480	64	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Bis(2-chloroethoxy)methane	480	U	480	57	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2,4-Dichlorophenol	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Naphthalene	**560**		480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
4-Chloroaniline	960	U	960	76	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Hexachlorobutadiene	480	U	480	52	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Caprolactam	480	U	480	96	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
4-Chloro-3-methylphenol	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2-Methylnaphthalene	**960**		480	55	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Hexachlorocyclopentadiene	480	U	480	60	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2,4,6-Trichlorophenol	480	U	480	42	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2,4,5-Trichlorophenol	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
1,1'-Biphenyl	1100	U	1100	1100	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2-Chloronaphthalene	480	U	480	51	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2-Nitroaniline	2500	U	2500	66	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Dimethyl phthalate	480	U	480	50	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2,6-Dinitrotoluene	480	U	480	61	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Acenaphthylene	480	U	480	52	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
3-Nitroaniline	2500	U	2500	67	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Acenaphthene	480	U	480	60	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2,4-Dinitrophenol	2500	U	2500	1200	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
4-Nitrophenol	2500	U	2500	480	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Dibenzofuran	**100**	**J**	480	48	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
2,4-Dinitrotoluene	480	U	480	71	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Diethyl phthalate	480	U	480	54	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1

Client Sample ID: SB03-03 (0.5-1.5)
Date Collected: 08/21/13 13:20
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-16
Matrix: Solid
Percent Solids: 68.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	480	U	480	52	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
4-Chlorophenyl phenyl ether	480	U	480	64	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
4-Nitroaniline	2500	U	2500	71	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
4,6-Dinitro-2-methylphenol	2500	U	2500	250	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
N-Nitrosodiphenylamine	480	U *	480	48	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
4-Bromophenyl phenyl ether	480	U	480	52	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Hexachlorobenzene	480	U	480	57	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Atrazine	480	U	480	34	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Pentachlorophenol	2500	U	2500	480	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Phenanthrene	**190**	**J**	480	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Anthracene	480	U	480	36	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Carbazole	480	U	480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Di-n-butyl phthalate	480	U	480	44	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Fluoranthene	**150**	**J**	480	47	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Pyrene	480	U	480	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Butyl benzyl phthalate	480	U	480	38	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
3,3'-Dichlorobenzidine	960	U	960	41	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Benzo[a]anthracene	480	U	480	39	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Chrysene	**41**	**J**	480	31	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Bis(2-ethylhexyl) phthalate	480	U	480	42	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Di-n-octyl phthalate	480	U	480	42	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Benzo[b]fluoranthene	480	U	480	55	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Benzo[k]fluoranthene	480	U	480	95	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Benzo[a]pyrene	480	U	480	76	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Indeno[1,2,3-cd]pyrene	480	U	480	41	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Dibenz(a,h)anthracene	480	U	480	57	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1
Benzo[g,h,i]perylene	480	U	480	32	ug/Kg	☼	08/26/13 21:27	08/30/13 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*64*		*46 - 130*	*08/26/13 21:27*	*08/30/13 16:39*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/26/13 21:27*	*08/30/13 16:39*	*1*
Terphenyl-d14 (Surr)	*58*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 16:39*	*1*
Phenol-d5 (Surr)	*57*		*49 - 130*	*08/26/13 21:27*	*08/30/13 16:39*	*1*
2-Fluorophenol (Surr)	*59*		*40 - 130*	*08/26/13 21:27*	*08/30/13 16:39*	*1*
2,4,6-Tribromophenol (Surr)	*74*		*58 - 130*	*08/26/13 21:27*	*08/30/13 16:39*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**270**	**J**	320	24	ug/Kg	☼	08/22/13 15:07	08/24/13 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*119*		*70 - 131*	*08/22/13 15:07*	*08/24/13 16:18*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**60000**		7300	2100	ug/Kg	☼	08/26/13 14:47	08/29/13 03:10	1
ORO C24-C40	**71000**		7300	2100	ug/Kg	☼	08/26/13 14:47	08/29/13 03:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*77*		*50 - 150*	*08/26/13 14:47*	*08/29/13 03:10*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-03 (3.0-4.0)
Date Collected: 08/21/13 13:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-17
Matrix: Solid
Percent Solids: 80.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	12	J	21	6.1	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Benzene	4.2	U	4.2	0.41	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Bromodichloromethane	4.2	U	4.2	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Bromoform	4.2	U	4.2	0.53	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Bromomethane	4.2	U	4.2	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Carbon disulfide	4.2	U	4.2	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Carbon tetrachloride	4.2	U	4.2	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Chlorobenzene	4.2	U	4.2	0.44	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Chloroethane	4.2	U	4.2	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Chloroform	4.2	U	4.2	0.49	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Chloromethane	4.2	U	4.2	0.84	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
cis-1,2-Dichloroethene	4.2	U	4.2	0.64	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
cis-1,3-Dichloropropene	4.2	U	4.2	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Cyclohexane	4.2	U	4.2	0.79	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Dibromochloromethane	4.2	U	4.2	0.73	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,2-Dibromo-3-Chloropropane	4.2	U	4.2	2.8	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,2-Dichlorobenzene	4.2	U	4.2	0.60	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,3-Dichlorobenzene	4.2	U	4.2	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,4-Dichlorobenzene	4.2	U	4.2	0.69	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Dichlorodifluoromethane	4.2	U	4.2	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,1-Dichloroethane	4.2	U	4.2	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,2-Dichloroethane	4.2	U	4.2	0.69	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,1-Dichloroethene	4.2	U	4.2	0.63	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,2-Dichloropropane	4.2	U	4.2	0.62	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Diisopropyl ether	4.2	U	4.2	0.46	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Ethylbenzene	4.2	U	4.2	0.51	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Ethylene Dibromide	4.2	U	4.2	0.40	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Ethyl tert-butyl ether	4.2	U	4.2	0.47	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
2-Hexanone	21	U	21	4.2	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Isopropylbenzene	4.2	U	4.2	0.57	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Methyl acetate	4.2	U	4.2	3.9	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Methylcyclohexane	4.2	U	4.2	0.73	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Methylene Chloride	13	U	13	8.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Methyl Ethyl Ketone	21	U	21	3.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
methyl isobutyl ketone	21	U	21	3.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Methyl tert-butyl ether	4.2	U	4.2	0.84	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Naphthalene	4.2	U	4.2	0.84	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Styrene	4.2	U	4.2	0.64	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Tert-amyl methyl ether	4.2	U	4.2	0.37	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
tert-Butyl alcohol	4.2	U	4.2	2.9	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,1,2,2-Tetrachloroethane	4.2	U	4.2	0.60	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Tetrachloroethene	4.2	U	4.2	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Toluene	4.2	U	4.2	0.59	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
trans-1,2-Dichloroethene	4.2	U	4.2	0.64	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
trans-1,3-Dichloropropene	4.2	U	4.2	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,2,4-Trichlorobenzene	4.2	U	4.2	0.61	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,1,1-Trichloroethane	4.2	U	4.2	0.92	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,1,2-Trichloroethane	4.2	U	4.2	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Trichloroethene	4.2	U	4.2	0.40	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1

Client Sample ID: SB03-03 (3.0-4.0)
Date Collected: 08/21/13 13:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-17
Matrix: Solid
Percent Solids: 80.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	2.4	J	4.2	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.2	U	4.2	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Vinyl chloride	4.2	U	4.2	0.77	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1
Xylenes, Total	8.4	U	8.4	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 11:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 122*	*08/26/13 09:52*	*08/29/13 11:21*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/26/13 09:52*	*08/29/13 11:21*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/13 09:52*	*08/29/13 11:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	71	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Phenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
bis (2-chloroisopropyl) ether	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
3 & 4 Methylphenol	400	U	400	53	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Isophorone	400	U	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2,4-Dimethylphenol	400	U	400	54	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Bis(2-chloroethoxy)methane	400	U	400	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Naphthalene	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
4-Chloroaniline	810	U	810	64	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Caprolactam	400	U	400	81	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2-Methylnaphthalene	400	U	400	47	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
1,1'-Biphenyl	910	U	910	910	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Dimethyl phthalate	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1

Client Sample ID: SB03-03 (3.0-4.0)
Date Collected: 08/21/13 13:30
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-17
Matrix: Solid
Percent Solids: 80.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
4-Chlorophenyl phenyl ether	400	U	400	54	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
N-Nitrosodiphenylamine	400	U *	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Hexachlorobenzene	400	U	400	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Atrazine	400	U	400	28	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Anthracene	400	U	400	31	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Carbazole	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Di-n-butyl phthalate	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Pyrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
3,3'-Dichlorobenzidine	810	U	810	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Chrysene	400	U	400	26	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Benzo[b]fluoranthene	400	U	400	47	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Benzo[k]fluoranthene	400	U	400	80	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Benzo[a]pyrene	400	U	400	64	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Dibenz(a,h)anthracene	400	U	400	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/26/13 21:27	08/30/13 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*65*		*46 - 130*	*08/26/13 21:27*	*08/30/13 17:04*	*1*
2-Fluorobiphenyl	*79*		*58 - 130*	*08/26/13 21:27*	*08/30/13 17:04*	*1*
Terphenyl-d14 (Surr)	*67*		*60 - 130*	*08/26/13 21:27*	*08/30/13 17:04*	*1*
Phenol-d5 (Surr)	*62*		*49 - 130*	*08/26/13 21:27*	*08/30/13 17:04*	*1*
2-Fluorophenol (Surr)	*65*		*40 - 130*	*08/26/13 21:27*	*08/30/13 17:04*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*58 - 130*	*08/26/13 21:27*	*08/30/13 17:04*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**1100**		240	18	ug/Kg	☼	08/22/13 15:07	08/28/13 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*106*		*70 - 131*	*08/22/13 15:07*	*08/28/13 18:20*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**5500**	**J**	6100	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 03:25	1
ORO C24-C40	**2500**	**J**	6100	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 03:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*59*		*50 - 150*	*08/26/13 14:47*	*08/29/13 03:25*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-04 (0.5-1.5)
Date Collected: 08/21/13 13:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-18
Matrix: Solid
Percent Solids: 53.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	54		45	13	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Benzene	9.1	U	9.1	0.89	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Bromodichloromethane	9.1	U	9.1	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Bromoform	9.1	U	9.1	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Bromomethane	9.1	U	9.1	2.5	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Carbon disulfide	9.1	U	9.1	2.2	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Carbon tetrachloride	9.1	U	9.1	3.1	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Chlorobenzene	9.1	U	9.1	0.94	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Chloroethane	9.1	U	9.1	3.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Chloroform	9.1	U	9.1	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Chloromethane	9.1	U	9.1	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
cis-1,2-Dichloroethene	9.1	U	9.1	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
cis-1,3-Dichloropropene	9.1	U	9.1	2.2	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Cyclohexane	9.1	U	9.1	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Dibromochloromethane	9.1	U	9.1	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,2-Dibromo-3-Chloropropane	9.1	U	9.1	6.0	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,2-Dichlorobenzene	9.1	U	9.1	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,3-Dichlorobenzene	9.1	U	9.1	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,4-Dichlorobenzene	9.1	U	9.1	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Dichlorodifluoromethane	9.1	U	9.1	2.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,1-Dichloroethane	9.1	U	9.1	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,2-Dichloroethane	9.1	U	9.1	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,1-Dichloroethene	9.1	U	9.1	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,2-Dichloropropane	9.1	U	9.1	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Diisopropyl ether	9.1	U	9.1	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Ethylbenzene	9.1	U	9.1	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Ethylene Dibromide	9.1	U	9.1	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Ethyl tert-butyl ether	9.1	U	9.1	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
2-Hexanone	45	U	45	9.1	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Isopropylbenzene	9.1	U	9.1	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Methyl acetate	9.1	U	9.1	8.3	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Methylcyclohexane	9.1	U	9.1	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Methylene Chloride	27	U	27	18	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Methyl Ethyl Ketone	45	U	45	7.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
methyl isobutyl ketone	45	U	45	7.2	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Methyl tert-butyl ether	9.1	U	9.1	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Naphthalene	9.1	U	9.1	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Styrene	9.1	U	9.1	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Tert-amyl methyl ether	9.1	U	9.1	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
tert-Butyl alcohol	9.1	U	9.1	6.2	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,1,2,2-Tetrachloroethane	9.1	U	9.1	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Tetrachloroethene	9.1	U	9.1	1.5	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Toluene	9.1	U	9.1	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
trans-1,2-Dichloroethene	9.1	U	9.1	1.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
trans-1,3-Dichloropropene	9.1	U	9.1	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,2,4-Trichlorobenzene	9.1	U	9.1	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,1,1-Trichloroethane	9.1	U	9.1	2.0	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,1,2-Trichloroethane	9.1	U	9.1	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Trichloroethene	9.1	U	9.1	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1

Client Sample ID: SB03-04 (0.5-1.5)
Date Collected: 08/21/13 13:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-18
Matrix: Solid
Percent Solids: 53.9

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**4.7**	**J**	9.1	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	9.1	U	9.1	3.6	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Vinyl chloride	9.1	U	9.1	1.7	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1
Xylenes, Total	18	U	18	3.4	ug/Kg	☼	08/26/13 09:52	08/29/13 11:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*72 - 122*	*08/26/13 09:52*	*08/29/13 11:47*	*1*
Dibromofluoromethane	*103*		*79 - 123*	*08/26/13 09:52*	*08/29/13 11:47*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*	*08/26/13 09:52*	*08/29/13 11:47*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	**190**	**J**	600	110	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Phenol	600	U	600	62	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Bis(2-chloroethyl)ether	600	U	600	82	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2-Chlorophenol	600	U	600	73	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2-Methylphenol	600	U	600	49	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
bis (2-chloroisopropyl) ether	600	U	600	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Acetophenone	**110**	**J**	600	51	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
3 & 4 Methylphenol	600	U	600	79	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
N-Nitrosodi-n-propylamine	600	U	600	58	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Hexachloroethane	600	U	600	51	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Nitrobenzene	600	U	600	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Isophorone	600	U	600	60	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2-Nitrophenol	600	U	600	75	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2,4-Dimethylphenol	600	U	600	80	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Bis(2-chloroethoxy)methane	600	U	600	71	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2,4-Dichlorophenol	600	U	600	64	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Naphthalene	**900**		600	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
4-Chloroaniline	1200	U	1200	95	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Hexachlorobutadiene	600	U	600	66	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Caprolactam	600	U	600	120	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
4-Chloro-3-methylphenol	600	U	600	64	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2-Methylnaphthalene	**1900**		600	69	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Hexachlorocyclopentadiene	600	U	600	75	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2,4,6-Trichlorophenol	600	U	600	53	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2,4,5-Trichlorophenol	600	U	600	64	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
1,1'-Biphenyl	1400	U	1400	1400	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2-Chloronaphthalene	600	U	600	64	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2-Nitroaniline	3100	U	3100	82	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Dimethyl phthalate	600	U	600	62	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2,6-Dinitrotoluene	600	U	600	77	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Acenaphthylene	600	U	600	66	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
3-Nitroaniline	3100	U	3100	84	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Acenaphthene	600	U	600	75	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2,4-Dinitrophenol	3100	U	3100	1500	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
4-Nitrophenol	3100	U	3100	600	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Dibenzofuran	**250**	**J**	600	60	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
2,4-Dinitrotoluene	600	U	600	90	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Diethyl phthalate	600	U	600	68	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1

Client Sample ID: SB03-04 (0.5-1.5)
Date Collected: 08/21/13 13:50
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-18
Matrix: Solid
Percent Solids: 53.9

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**90**	**J**	600	66	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
4-Chlorophenyl phenyl ether	600	U	600	80	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
4-Nitroaniline	3100	U	3100	90	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
4,6-Dinitro-2-methylphenol	3100	U	3100	310	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
N-Nitrosodiphenylamine	600	U *	600	60	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
4-Bromophenyl phenyl ether	600	U	600	66	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Hexachlorobenzene	600	U	600	71	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Atrazine	600	U	600	42	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Pentachlorophenol	3100	U	3100	600	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Phenanthrene	**570**	**J**	600	49	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Anthracene	**72**	**J**	600	46	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Carbazole	600	U	600	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Di-n-butyl phthalate	600	U	600	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Fluoranthene	**310**	**J**	600	58	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Pyrene	**140**	**J**	600	49	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Butyl benzyl phthalate	600	U	600	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
3,3'-Dichlorobenzidine	1200	U	1200	51	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Benzo[a]anthracene	**65**	**J**	600	49	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Chrysene	**150**	**J**	600	38	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Bis(2-ethylhexyl) phthalate	600	U	600	53	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Di-n-octyl phthalate	600	U	600	53	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Benzo[b]fluoranthene	**160**	**J**	600	69	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Benzo[k]fluoranthene	600	U	600	120	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Benzo[a]pyrene	600	U	600	95	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Indeno[1,2,3-cd]pyrene	**77**	**J**	600	51	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Dibenz(a,h)anthracene	600	U	600	71	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1
Benzo[g,h,i]perylene	**83**	**J**	600	40	ug/Kg	☼	08/26/13 21:27	08/30/13 17:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*55*		*46 - 130*	*08/26/13 21:27*	*08/30/13 17:29*	*1*
2-Fluorobiphenyl	*68*		*58 - 130*	*08/26/13 21:27*	*08/30/13 17:29*	*1*
Terphenyl-d14 (Surr)	*55*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 17:29*	*1*
Phenol-d5 (Surr)	*52*		*49 - 130*	*08/26/13 21:27*	*08/30/13 17:29*	*1*
2-Fluorophenol (Surr)	*52*		*40 - 130*	*08/26/13 21:27*	*08/30/13 17:29*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*58 - 130*	*08/26/13 21:27*	*08/30/13 17:29*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**9300**		560	42	ug/Kg	☼	08/22/13 15:07	08/24/13 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*249*	*X*	*70 - 131*	*08/22/13 15:07*	*08/24/13 16:58*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**8500**	**J**	8900	2500	ug/Kg	☼	08/26/13 14:47	08/29/13 03:41	1
ORO C24-C40	**4900**	**J**	8900	2500	ug/Kg	☼	08/26/13 14:47	08/29/13 03:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*50*		*50 - 150*	*08/26/13 14:47*	*08/29/13 03:41*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-04 (4.0-5.0)
Date Collected: 08/21/13 14:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-19
Matrix: Solid
Percent Solids: 80.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	17	J	24	6.9	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Benzene	4.8	U	4.8	0.47	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Bromodichloromethane	4.8	U	4.8	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Bromoform	4.8	U	4.8	0.60	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Bromomethane	4.8	U	4.8	1.3	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Carbon disulfide	4.8	U	4.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Carbon tetrachloride	4.8	U	4.8	1.6	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Chlorobenzene	4.8	U	4.8	0.49	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Chloroethane	4.8	U	4.8	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Chloroform	4.8	U	4.8	0.56	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Chloromethane	4.8	U	4.8	0.95	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
cis-1,2-Dichloroethene	4.8	U	4.8	0.72	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
cis-1,3-Dichloropropene	4.8	U	4.8	1.1	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Cyclohexane	4.8	U	4.8	0.89	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Dibromochloromethane	4.8	U	4.8	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,2-Dibromo-3-Chloropropane	4.8	U	4.8	3.1	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,2-Dichlorobenzene	4.8	U	4.8	0.67	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,3-Dichlorobenzene	4.8	U	4.8	0.90	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,4-Dichlorobenzene	4.8	U	4.8	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Dichlorodifluoromethane	4.8	U	4.8	1.2	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,1-Dichloroethane	4.8	U	4.8	0.79	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,2-Dichloroethane	4.8	U	4.8	0.78	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,1-Dichloroethene	4.8	U	4.8	0.71	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,2-Dichloropropane	4.8	U	4.8	0.70	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Diisopropyl ether	4.8	U	4.8	0.52	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Ethylbenzene	4.8	U	4.8	0.58	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Ethylene Dibromide	4.8	U	4.8	0.46	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Ethyl tert-butyl ether	4.8	U	4.8	0.53	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
2-Hexanone	24	U	24	4.8	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Isopropylbenzene	4.8	U	4.8	0.65	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Methyl acetate	4.8	U	4.8	4.4	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Methylcyclohexane	4.8	U	4.8	0.83	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Methylene Chloride	14	U	14	9.5	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Methyl Ethyl Ketone	24	U	24	3.9	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
methyl isobutyl ketone	24	U	24	3.8	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Methyl tert-butyl ether	4.8	U	4.8	0.95	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Naphthalene	4.8	U	4.8	0.95	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Styrene	4.8	U	4.8	0.72	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Tert-amyl methyl ether	4.8	U	4.8	0.42	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
tert-Butyl alcohol	4.8	U	4.8	3.2	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,1,2,2-Tetrachloroethane	4.8	U	4.8	0.68	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Tetrachloroethene	4.8	U	4.8	0.80	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Toluene	4.8	U	4.8	0.67	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
trans-1,2-Dichloroethene	4.8	U	4.8	0.72	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
trans-1,3-Dichloropropene	4.8	U	4.8	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,2,4-Trichlorobenzene	4.8	U	4.8	0.69	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,1,1-Trichloroethane	4.8	U	4.8	1.0	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,1,2-Trichloroethane	4.8	U	4.8	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Trichloroethene	4.8	U	4.8	0.46	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1

Client Sample ID: SB03-04 (4.0-5.0)
Date Collected: 08/21/13 14:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-19
Matrix: Solid
Percent Solids: 80.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.8	U	4.8	0.90	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.8	U	4.8	1.9	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Vinyl chloride	4.8	U	4.8	0.87	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1
Xylenes, Total	9.5	U	9.5	1.8	ug/Kg	☼	08/26/13 09:52	08/29/13 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*72 - 122*	*08/26/13 09:52*	*08/29/13 12:13*	*1*
Dibromofluoromethane	*104*		*79 - 123*	*08/26/13 09:52*	*08/29/13 12:13*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/26/13 09:52*	*08/29/13 12:13*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	71	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Phenol	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
bis (2-chloroisopropyl) ether	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
3 & 4 Methylphenol	400	U	400	53	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Isophorone	400	U	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2,4-Dimethylphenol	400	U	400	54	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Bis(2-chloroethoxy)methane	400	U	400	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Naphthalene	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
4-Chloroaniline	810	U	810	63	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Caprolactam	400	U	400	81	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
1,1'-Biphenyl	900	U	900	900	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Dimethyl phthalate	400	U	400	42	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1

Client Sample ID: SB03-04 (4.0-5.0)
Date Collected: 08/21/13 14:00
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-19
Matrix: Solid
Percent Solids: 80.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
4-Chlorophenyl phenyl ether	400	U	400	54	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
N-Nitrosodiphenylamine	400	U *	400	40	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Hexachlorobenzene	400	U	400	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Atrazine	400	U	400	28	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Anthracene	400	U	400	31	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Carbazole	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Di-n-butyl phthalate	400	U	400	37	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Fluoranthene	**95**	**J**	400	39	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Pyrene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
3,3'-Dichlorobenzidine	810	U	810	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Chrysene	400	U	400	26	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Dibenz(a,h)anthracene	400	U	400	48	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/26/13 21:27	08/30/13 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*51*		*46 - 130*	*08/26/13 21:27*	*08/30/13 17:53*	*1*
2-Fluorobiphenyl	*60*		*58 - 130*	*08/26/13 21:27*	*08/30/13 17:53*	*1*
Terphenyl-d14 (Surr)	*54*	*X*	*60 - 130*	*08/26/13 21:27*	*08/30/13 17:53*	*1*
Phenol-d5 (Surr)	*49*		*49 - 130*	*08/26/13 21:27*	*08/30/13 17:53*	*1*
2-Fluorophenol (Surr)	*48*		*40 - 130*	*08/26/13 21:27*	*08/30/13 17:53*	*1*
2,4,6-Tribromophenol (Surr)	*62*		*58 - 130*	*08/26/13 21:27*	*08/30/13 17:53*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**2100**		230	18	ug/Kg	☼	08/22/13 15:07	08/24/13 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*69*	*X*	*70 - 131*	*08/22/13 15:07*	*08/24/13 17:17*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4800**	**J**	6100	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 03:57	1
ORO C24-C40	6100	U	6100	1700	ug/Kg	☼	08/26/13 14:47	08/29/13 03:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*67*		*50 - 150*	*08/26/13 14:47*	*08/29/13 03:57*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: PZ02-04 (082113) (DRO-SGT)
Date Collected: 08/21/13 09:35
Date Received: 08/22/13 09:39

Lab Sample ID: 680-93498-20
Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	320	B	97	27	ug/L		08/28/13 07:23	08/28/13 17:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*50 - 150*	*08/28/13 07:23*	*08/28/13 17:56*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-189997/4
Matrix: Solid
Analysis Batch: 189997

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg			08/28/13 08:15	1
Benzene	5.0	U	5.0	0.49	ug/Kg			08/28/13 08:15	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg			08/28/13 08:15	1
Bromoform	5.0	U	5.0	0.63	ug/Kg			08/28/13 08:15	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg			08/28/13 08:15	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg			08/28/13 08:15	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg			08/28/13 08:15	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg			08/28/13 08:15	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg			08/28/13 08:15	1
Chloroform	5.0	U	5.0	0.59	ug/Kg			08/28/13 08:15	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			08/28/13 08:15	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/28/13 08:15	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg			08/28/13 08:15	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg			08/28/13 08:15	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg			08/28/13 08:15	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg			08/28/13 08:15	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg			08/28/13 08:15	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg			08/28/13 08:15	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg			08/28/13 08:15	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg			08/28/13 08:15	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg			08/28/13 08:15	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg			08/28/13 08:15	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg			08/28/13 08:15	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg			08/28/13 08:15	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg			08/28/13 08:15	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg			08/28/13 08:15	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg			08/28/13 08:15	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg			08/28/13 08:15	1
2-Hexanone	25	U	25	5.0	ug/Kg			08/28/13 08:15	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg			08/28/13 08:15	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg			08/28/13 08:15	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg			08/28/13 08:15	1
Methylene Chloride	15	U	15	10	ug/Kg			08/28/13 08:15	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg			08/28/13 08:15	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg			08/28/13 08:15	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			08/28/13 08:15	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg			08/28/13 08:15	1
Styrene	5.0	U	5.0	0.76	ug/Kg			08/28/13 08:15	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg			08/28/13 08:15	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg			08/28/13 08:15	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg			08/28/13 08:15	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg			08/28/13 08:15	1
Toluene	5.0	U	5.0	0.70	ug/Kg			08/28/13 08:15	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/28/13 08:15	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg			08/28/13 08:15	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg			08/28/13 08:15	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg			08/28/13 08:15	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg			08/28/13 08:15	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-189997/4
Matrix: Solid
Analysis Batch: 189997

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	5.0	U	5.0	0.48	ug/Kg			08/28/13 08:15	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg			08/28/13 08:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg			08/28/13 08:15	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg			08/28/13 08:15	1
Xylenes, Total	10	U	10	1.9	ug/Kg			08/28/13 08:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*		*08/28/13 08:15*	*1*
Dibromofluoromethane	*101*		*79 - 123*		*08/28/13 08:15*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/28/13 08:15*	*1*

Lab Sample ID: LCS 400-189997/1000
Matrix: Solid
Analysis Batch: 189997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	287		ug/Kg		144	43 - 150
Benzene	50.0	48.4		ug/Kg		97	74 - 119
Bromodichloromethane	50.0	51.0		ug/Kg		102	68 - 128
Bromoform	50.0	49.2		ug/Kg		98	54 - 125
Bromomethane	50.0	44.1		ug/Kg		88	25 - 150
Carbon disulfide	50.0	49.7		ug/Kg		99	26 - 150
Carbon tetrachloride	50.0	48.9		ug/Kg		98	70 - 128
Chlorobenzene	50.0	47.2		ug/Kg		94	80 - 116
Chloroethane	50.0	53.0		ug/Kg		106	22 - 150
Chloroform	50.0	48.9		ug/Kg		98	74 - 119
Chloromethane	50.0	54.0		ug/Kg		108	36 - 147
cis-1,2-Dichloroethene	50.0	50.2		ug/Kg		100	68 - 126
cis-1,3-Dichloropropene	50.0	51.1		ug/Kg		102	68 - 125
Cyclohexane	50.0	50.3		ug/Kg		101	62 - 126
Dibromochloromethane	50.0	49.6		ug/Kg		99	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	50.9		ug/Kg		102	57 - 123
1,2-Dichlorobenzene	50.0	47.2		ug/Kg		94	76 - 120
1,3-Dichlorobenzene	50.0	47.6		ug/Kg		95	78 - 118
1,4-Dichlorobenzene	50.0	47.8		ug/Kg		96	77 - 118
Dichlorodifluoromethane	50.0	47.5		ug/Kg		95	44 - 145
1,1-Dichloroethane	50.0	49.6		ug/Kg		99	61 - 128
1,2-Dichloroethane	50.0	51.2		ug/Kg		102	70 - 125
1,1-Dichloroethene	50.0	54.1		ug/Kg		108	62 - 130
1,2-Dichloropropane	50.0	49.1		ug/Kg		98	64 - 129
Diisopropyl ether	50.0	50.3		ug/Kg		101	46 - 144
Ethylbenzene	50.0	47.3		ug/Kg		95	78 - 120
Ethylene Dibromide	50.0	50.5		ug/Kg		101	78 - 119
Ethyl tert-butyl ether	50.0	52.2		ug/Kg		104	60 - 128
2-Hexanone	200	224		ug/Kg		112	54 - 140
Isopropylbenzene	50.0	48.8		ug/Kg		98	78 - 119
Methyl acetate	250	293		ug/Kg		117	52 - 139
Methylcyclohexane	50.0	49.7		ug/Kg		99	65 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-189997/1000
Matrix: Solid
Analysis Batch: 189997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	48.9		ug/Kg		98	45 - 150
Methyl Ethyl Ketone	200	237		ug/Kg		119	62 - 126
methyl isobutyl ketone	200	230		ug/Kg		115	56 - 137
Methyl tert-butyl ether	50.0	51.4		ug/Kg		103	69 - 124
Naphthalene	50.0	51.2		ug/Kg		102	64 - 126
Styrene	50.0	49.5		ug/Kg		99	66 - 132
Tert-amyl methyl ether	50.0	52.0		ug/Kg		104	65 - 124
tert-Butyl alcohol	500	432		ug/Kg		86	12 - 150
1,1,2,2-Tetrachloroethane	50.0	50.6		ug/Kg		101	67 - 120
Tetrachloroethene	50.0	48.2		ug/Kg		96	74 - 126
Toluene	50.0	46.5		ug/Kg		93	76 - 120
trans-1,2-Dichloroethene	50.0	48.9		ug/Kg		98	65 - 130
trans-1,3-Dichloropropene	50.0	49.7		ug/Kg		99	65 - 126
1,2,4-Trichlorobenzene	50.0	49.2		ug/Kg		98	72 - 126
1,1,1-Trichloroethane	50.0	50.2		ug/Kg		100	72 - 121
1,1,2-Trichloroethane	50.0	49.7		ug/Kg		99	75 - 118
Trichloroethene	50.0	50.2		ug/Kg		100	76 - 122
Trichlorofluoromethane	50.0	59.3		ug/Kg		119	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.3		ug/Kg		105	74 - 123
Vinyl chloride	50.0	54.8		ug/Kg		110	52 - 134
Xylenes, Total	100	96.9		ug/Kg		97	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*72 - 122*
Dibromofluoromethane	*102*		*79 - 123*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCSD 400-189997/5
Matrix: Solid
Analysis Batch: 189997

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	307	*	ug/Kg		154	43 - 150	7	30
Benzene	50.0	51.6		ug/Kg		103	74 - 119	6	30
Bromodichloromethane	50.0	53.1		ug/Kg		106	68 - 128	4	30
Bromoform	50.0	52.2		ug/Kg		104	54 - 125	6	30
Bromomethane	50.0	37.0		ug/Kg		74	25 - 150	18	30
Carbon disulfide	50.0	52.2		ug/Kg		104	26 - 150	5	30
Carbon tetrachloride	50.0	51.3		ug/Kg		103	70 - 128	5	30
Chlorobenzene	50.0	50.5		ug/Kg		101	80 - 116	7	30
Chloroethane	50.0	42.4		ug/Kg		85	22 - 150	22	30
Chloroform	50.0	51.6		ug/Kg		103	74 - 119	5	30
Chloromethane	50.0	50.4		ug/Kg		101	36 - 147	7	30
cis-1,2-Dichloroethene	50.0	53.1		ug/Kg		106	68 - 126	6	30
cis-1,3-Dichloropropene	50.0	53.7		ug/Kg		107	68 - 125	5	30
Cyclohexane	50.0	52.6		ug/Kg		105	62 - 126	4	30
Dibromochloromethane	50.0	52.1		ug/Kg		104	65 - 131	5	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-189997/5
Matrix: Solid
Analysis Batch: 189997

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane			50.0	54.1		ug/Kg		108	57 - 123	6	30
1,2-Dichlorobenzene			50.0	51.8		ug/Kg		104	76 - 120	9	30
1,3-Dichlorobenzene			50.0	51.5		ug/Kg		103	78 - 118	8	30
1,4-Dichlorobenzene			50.0	52.0		ug/Kg		104	77 - 118	8	30
Dichlorodifluoromethane			50.0	44.0		ug/Kg		88	44 - 145	8	30
1,1-Dichloroethane			50.0	53.0		ug/Kg		106	61 - 128	7	30
1,2-Dichloroethane			50.0	54.4		ug/Kg		109	70 - 125	6	30
1,1-Dichloroethene			50.0	56.1		ug/Kg		112	62 - 130	3	30
1,2-Dichloropropane			50.0	53.1		ug/Kg		106	64 - 129	8	30
Diisopropyl ether			50.0	53.7		ug/Kg		107	46 - 144	6	30
Ethylbenzene			50.0	51.3		ug/Kg		103	78 - 120	8	30
Ethylene Dibromide			50.0	54.5		ug/Kg		109	78 - 119	8	30
Ethyl tert-butyl ether			50.0	54.6		ug/Kg		109	60 - 128	4	30
2-Hexanone			200	237		ug/Kg		119	54 - 140	5	30
Isopropylbenzene			50.0	52.4		ug/Kg		105	78 - 119	7	30
Methyl acetate			250	297		ug/Kg		119	52 - 139	1	30
Methylcyclohexane			50.0	52.6		ug/Kg		105	65 - 126	6	30
Methylene Chloride			50.0	52.2		ug/Kg		104	45 - 150	7	30
Methyl Ethyl Ketone			200	243		ug/Kg		122	62 - 126	3	30
methyl isobutyl ketone			200	235		ug/Kg		118	56 - 137	2	30
Methyl tert-butyl ether			50.0	52.6		ug/Kg		105	69 - 124	2	30
Naphthalene			50.0	55.4		ug/Kg		111	64 - 126	8	30
Styrene			50.0	53.8		ug/Kg		108	66 - 132	8	30
Tert-amyl methyl ether			50.0	54.0		ug/Kg		108	65 - 124	4	30
tert-Butyl alcohol			500	523		ug/Kg		105	12 - 150	19	30
1,1,2,2-Tetrachloroethane			50.0	52.8		ug/Kg		106	67 - 120	4	30
Tetrachloroethene			50.0	50.7		ug/Kg		101	74 - 126	5	30
Toluene			50.0	50.3		ug/Kg		101	76 - 120	8	30
trans-1,2-Dichloroethene			50.0	51.6		ug/Kg		103	65 - 130	5	30
trans-1,3-Dichloropropene			50.0	53.5		ug/Kg		107	65 - 126	7	30
1,2,4-Trichlorobenzene			50.0	52.3		ug/Kg		105	72 - 126	6	30
1,1,1-Trichloroethane			50.0	52.7		ug/Kg		105	72 - 121	5	30
1,1,2-Trichloroethane			50.0	53.8		ug/Kg		108	75 - 118	8	30
Trichloroethene			50.0	53.6		ug/Kg		107	76 - 122	7	30
Trichlorofluoromethane			50.0	53.4		ug/Kg		107	65 - 132	10	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne			50.0	53.4		ug/Kg		107	74 - 123	2	30
Vinyl chloride			50.0	51.0		ug/Kg		102	52 - 134	7	30
Xylenes, Total			100	105		ug/Kg		105	70 - 120	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*72 - 122*
Dibromofluoromethane	*102*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190083/4
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/28/13 16:58	1
Benzene	1.0	U	1.0	0.34	ug/L			08/28/13 16:58	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/28/13 16:58	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/28/13 16:58	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/28/13 16:58	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/28/13 16:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 16:58	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/28/13 16:58	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/28/13 16:58	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/28/13 16:58	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/28/13 16:58	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/28/13 16:58	1
2-Hexanone	25	U	25	3.1	ug/L			08/28/13 16:58	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/28/13 16:58	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/28/13 16:58	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/28/13 16:58	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/28/13 16:58	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/28/13 16:58	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/28/13 16:58	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/28/13 16:58	1
Styrene	1.0	U	1.0	1.0	ug/L			08/28/13 16:58	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/28/13 16:58	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/28/13 16:58	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/28/13 16:58	1
Toluene	1.0	U	1.0	0.70	ug/L			08/28/13 16:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/28/13 16:58	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/28/13 16:58	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/28/13 16:58	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190083/4
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/28/13 16:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/28/13 16:58	1
Xylenes, Total	10	U	10	1.6	ug/L			08/28/13 16:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/28/13 16:58*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*08/28/13 16:58*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/28/13 16:58*	*1*

Lab Sample ID: LCS 400-190083/1000
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	273		ug/L		136	24 - 150
Benzene	50.0	50.0		ug/L		100	79 - 120
Bromodichloromethane	50.0	51.1		ug/L		102	75 - 127
Bromoform	50.0	51.1		ug/L		102	65 - 121
Carbon disulfide	50.0	50.1		ug/L		100	41 - 140
Carbon tetrachloride	50.0	50.6		ug/L		101	46 - 141
Chlorobenzene	50.0	49.3		ug/L		99	85 - 120
Chloroethane	50.0	37.6		ug/L		75	37 - 150
Chloroform	50.0	50.5		ug/L		101	73 - 122
Chloromethane	50.0	50.2		ug/L		100	49 - 141
cis-1,2-Dichloroethene	50.0	51.7		ug/L		103	78 - 122
cis-1,3-Dichloropropene	50.0	52.1		ug/L		104	70 - 122
Cyclohexane	50.0	49.6		ug/L		99	69 - 123
Dibromochloromethane	50.0	51.0		ug/L		102	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	50.6		ug/L		101	52 - 124
1,2-Dichlorobenzene	50.0	49.8		ug/L		100	80 - 121
1,3-Dichlorobenzene	50.0	50.2		ug/L		100	77 - 124
1,4-Dichlorobenzene	50.0	50.7		ug/L		101	79 - 119
Dichlorodifluoromethane	50.0	44.8		ug/L		90	27 - 144
1,1-Dichloroethane	50.0	51.5		ug/L		103	75 - 126
1,2-Dichloroethane	50.0	53.0		ug/L		106	69 - 128
1,1-Dichloroethene	50.0	47.9		ug/L		96	50 - 134
1,2-Dichloropropane	50.0	50.8		ug/L		102	77 - 126
Diisopropyl ether	50.0	51.7		ug/L		103	69 - 143
Ethylbenzene	50.0	49.5		ug/L		99	82 - 120
Ethylene Dibromide	50.0	52.9		ug/L		106	82 - 119
Ethyl tert-butyl ether	50.0	51.6		ug/L		103	58 - 142
2-Hexanone	200	224		ug/L		112	60 - 150
Isopropylbenzene	50.0	50.8		ug/L		102	76 - 118
Methyl acetate	250	286		ug/L		114	58 - 150
Methylcyclohexane	50.0	50.3		ug/L		101	72 - 121
Methylene Chloride	50.0	52.0		ug/L		104	70 - 130
Methyl Ethyl Ketone	200	229		ug/L		114	62 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190083/1000
Matrix: Water
Analysis Batch: 190083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
methyl isobutyl ketone	200	227		ug/L		114	63 - 150
Methyl tert-butyl ether	50.0	51.0		ug/L		102	70 - 124
Naphthalene	50.0	53.6		ug/L		107	45 - 131
Styrene	50.0	51.8		ug/L		104	79 - 124
Tert-amyl methyl ether	50.0	50.9		ug/L		102	65 - 125
tert-Butyl alcohol	500	580		ug/L		116	44 - 150
1,1,2,2-Tetrachloroethane	50.0	51.4		ug/L		103	68 - 132
Tetrachloroethene	50.0	49.5		ug/L		99	76 - 124
Toluene	50.0	48.5		ug/L		97	81 - 120
trans-1,2-Dichloroethene	50.0	50.9		ug/L		102	70 - 126
trans-1,3-Dichloropropene	50.0	50.6		ug/L		101	64 - 120
1,2,4-Trichlorobenzene	50.0	51.4		ug/L		103	69 - 128
1,1,1-Trichloroethane	50.0	51.0		ug/L		102	66 - 130
1,1,2-Trichloroethane	50.0	51.3		ug/L		103	81 - 117
Trichloroethene	50.0	51.8		ug/L		104	77 - 119
Trichlorofluoromethane	50.0	53.5		ug/L		107	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.3		ug/L		99	45 - 138
Vinyl chloride	50.0	50.7		ug/L		101	60 - 128
Xylenes, Total	100	102		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*78 - 118*
Dibromofluoromethane	*101*		*81 - 121*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: MB 400-190126/4
Matrix: Solid
Analysis Batch: 190126

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg			08/29/13 07:42	1
Benzene	5.0	U	5.0	0.49	ug/Kg			08/29/13 07:42	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg			08/29/13 07:42	1
Bromoform	5.0	U	5.0	0.63	ug/Kg			08/29/13 07:42	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg			08/29/13 07:42	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg			08/29/13 07:42	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg			08/29/13 07:42	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg			08/29/13 07:42	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg			08/29/13 07:42	1
Chloroform	5.0	U	5.0	0.59	ug/Kg			08/29/13 07:42	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			08/29/13 07:42	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/29/13 07:42	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg			08/29/13 07:42	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg			08/29/13 07:42	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg			08/29/13 07:42	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg			08/29/13 07:42	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg			08/29/13 07:42	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190126/4
Matrix: Solid
Analysis Batch: 190126

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg			08/29/13 07:42	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg			08/29/13 07:42	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg			08/29/13 07:42	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg			08/29/13 07:42	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg			08/29/13 07:42	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg			08/29/13 07:42	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg			08/29/13 07:42	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg			08/29/13 07:42	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg			08/29/13 07:42	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg			08/29/13 07:42	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg			08/29/13 07:42	1
2-Hexanone	25	U	25	5.0	ug/Kg			08/29/13 07:42	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg			08/29/13 07:42	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg			08/29/13 07:42	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg			08/29/13 07:42	1
Methylene Chloride	15	U	15	10	ug/Kg			08/29/13 07:42	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg			08/29/13 07:42	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg			08/29/13 07:42	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			08/29/13 07:42	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg			08/29/13 07:42	1
Styrene	5.0	U	5.0	0.76	ug/Kg			08/29/13 07:42	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg			08/29/13 07:42	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg			08/29/13 07:42	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg			08/29/13 07:42	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg			08/29/13 07:42	1
Toluene	5.0	U	5.0	0.70	ug/Kg			08/29/13 07:42	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/29/13 07:42	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg			08/29/13 07:42	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg			08/29/13 07:42	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg			08/29/13 07:42	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg			08/29/13 07:42	1
Trichloroethene	5.0	U	5.0	0.48	ug/Kg			08/29/13 07:42	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg			08/29/13 07:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg			08/29/13 07:42	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg			08/29/13 07:42	1
Xylenes, Total	10	U	10	1.9	ug/Kg			08/29/13 07:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*		*08/29/13 07:42*	*1*
Dibromofluoromethane	*103*		*79 - 123*		*08/29/13 07:42*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/29/13 07:42*	*1*

Lab Sample ID: LCS 400-190126/1000
Matrix: Solid
Analysis Batch: 190126

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	247		ug/Kg		124	43 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190126/1000
Matrix: Solid
Analysis Batch: 190126

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.4		ug/Kg		101	74 - 119
Bromodichloromethane	50.0	52.2		ug/Kg		104	68 - 128
Bromoform	50.0	58.3		ug/Kg		117	54 - 125
Bromomethane	50.0	35.2		ug/Kg		70	25 - 150
Carbon disulfide	50.0	53.0		ug/Kg		106	26 - 150
Carbon tetrachloride	50.0	54.1		ug/Kg		108	70 - 128
Chlorobenzene	50.0	50.0		ug/Kg		100	80 - 116
Chloroethane	50.0	46.7		ug/Kg		93	22 - 150
Chloroform	50.0	50.0		ug/Kg		100	74 - 119
Chloromethane	50.0	48.5		ug/Kg		97	36 - 147
cis-1,2-Dichloroethene	50.0	50.7		ug/Kg		101	68 - 126
cis-1,3-Dichloropropene	50.0	54.4		ug/Kg		109	68 - 125
Cyclohexane	50.0	53.0		ug/Kg		106	62 - 126
Dibromochloromethane	50.0	54.7		ug/Kg		109	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	52.9		ug/Kg		106	57 - 123
1,2-Dichlorobenzene	50.0	49.5		ug/Kg		99	76 - 120
1,3-Dichlorobenzene	50.0	49.9		ug/Kg		100	78 - 118
1,4-Dichlorobenzene	50.0	50.5		ug/Kg		101	77 - 118
Dichlorodifluoromethane	50.0	43.8		ug/Kg		88	44 - 145
1,1-Dichloroethane	50.0	51.9		ug/Kg		104	61 - 128
1,2-Dichloroethane	50.0	48.7		ug/Kg		97	70 - 125
1,1-Dichloroethene	50.0	51.4		ug/Kg		103	62 - 130
1,2-Dichloropropane	50.0	50.5		ug/Kg		101	64 - 129
Diisopropyl ether	50.0	52.0		ug/Kg		104	46 - 144
Ethylbenzene	50.0	49.8		ug/Kg		100	78 - 120
Ethylene Dibromide	50.0	52.7		ug/Kg		105	78 - 119
Ethyl tert-butyl ether	50.0	59.2		ug/Kg		118	60 - 128
2-Hexanone	200	205		ug/Kg		103	54 - 140
Isopropylbenzene	50.0	50.5		ug/Kg		101	78 - 119
Methyl acetate	250	262		ug/Kg		105	52 - 139
Methylcyclohexane	50.0	51.0		ug/Kg		102	65 - 126
Methylene Chloride	50.0	52.7		ug/Kg		105	45 - 150
Methyl Ethyl Ketone	200	221		ug/Kg		111	62 - 126
methyl isobutyl ketone	200	199		ug/Kg		100	56 - 137
Methyl tert-butyl ether	50.0	54.7		ug/Kg		109	69 - 124
Naphthalene	50.0	50.5		ug/Kg		101	64 - 126
Styrene	50.0	52.6		ug/Kg		105	66 - 132
Tert-amyl methyl ether	50.0	57.6		ug/Kg		115	65 - 124
tert-Butyl alcohol	500	488		ug/Kg		98	12 - 150
1,1,2,2-Tetrachloroethane	50.0	49.8		ug/Kg		100	67 - 120
Tetrachloroethene	50.0	52.4		ug/Kg		105	74 - 126
Toluene	50.0	50.5		ug/Kg		101	76 - 120
trans-1,2-Dichloroethene	50.0	52.7		ug/Kg		105	65 - 130
trans-1,3-Dichloropropene	50.0	56.8		ug/Kg		114	65 - 126
1,2,4-Trichlorobenzene	50.0	50.5		ug/Kg		101	72 - 126
1,1,1-Trichloroethane	50.0	52.5		ug/Kg		105	72 - 121
1,1,2-Trichloroethane	50.0	52.1		ug/Kg		104	75 - 118
Trichloroethene	50.0	52.5		ug/Kg		105	76 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190126/1000
Matrix: Solid
Analysis Batch: 190126

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	52.9		ug/Kg		106	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	51.2		ug/Kg		102	74 - 123
Vinyl chloride	50.0	52.1		ug/Kg		104	52 - 134
Xylenes, Total	100	101		ug/Kg		101	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*72 - 122*
Dibromofluoromethane	*102*		*79 - 123*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 400-190126/5
Matrix: Solid
Analysis Batch: 190126

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	215		ug/Kg		107	43 - 150	14	30
Benzene	50.0	47.4		ug/Kg		95	74 - 119	6	30
Bromodichloromethane	50.0	50.3		ug/Kg		101	68 - 128	4	30
Bromoform	50.0	53.6		ug/Kg		107	54 - 125	8	30
Bromomethane	50.0	43.0		ug/Kg		86	25 - 150	20	30
Carbon disulfide	50.0	50.3		ug/Kg		101	26 - 150	5	30
Carbon tetrachloride	50.0	51.0		ug/Kg		102	70 - 128	6	30
Chlorobenzene	50.0	46.0		ug/Kg		92	80 - 116	8	30
Chloroethane	50.0	47.3		ug/Kg		95	22 - 150	1	30
Chloroform	50.0	47.7		ug/Kg		95	74 - 119	5	30
Chloromethane	50.0	46.1		ug/Kg		92	36 - 147	5	30
cis-1,2-Dichloroethene	50.0	48.0		ug/Kg		96	68 - 126	5	30
cis-1,3-Dichloropropene	50.0	52.2		ug/Kg		104	68 - 125	4	30
Cyclohexane	50.0	49.7		ug/Kg		99	62 - 126	6	30
Dibromochloromethane	50.0	51.6		ug/Kg		103	65 - 131	6	30
1,2-Dibromo-3-Chloropropane	50.0	47.6		ug/Kg		95	57 - 123	11	30
1,2-Dichlorobenzene	50.0	45.6		ug/Kg		91	76 - 120	8	30
1,3-Dichlorobenzene	50.0	45.0		ug/Kg		90	78 - 118	10	30
1,4-Dichlorobenzene	50.0	45.5		ug/Kg		91	77 - 118	11	30
Dichlorodifluoromethane	50.0	40.4		ug/Kg		81	44 - 145	8	30
1,1-Dichloroethane	50.0	49.3		ug/Kg		99	61 - 128	5	30
1,2-Dichloroethane	50.0	46.8		ug/Kg		94	70 - 125	4	30
1,1-Dichloroethene	50.0	47.3		ug/Kg		95	62 - 130	8	30
1,2-Dichloropropane	50.0	49.5		ug/Kg		99	64 - 129	2	30
Diisopropyl ether	50.0	49.0		ug/Kg		98	46 - 144	6	30
Ethylbenzene	50.0	46.4		ug/Kg		93	78 - 120	7	30
Ethylene Dibromide	50.0	48.5		ug/Kg		97	78 - 119	8	30
Ethyl tert-butyl ether	50.0	54.9		ug/Kg		110	60 - 128	8	30
2-Hexanone	200	187		ug/Kg		94	54 - 140	9	30
Isopropylbenzene	50.0	46.4		ug/Kg		93	78 - 119	8	30
Methyl acetate	250	243		ug/Kg		97	52 - 139	8	30
Methylcyclohexane	50.0	48.9		ug/Kg		98	65 - 126	4	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-190126/5
Matrix: Solid
Analysis Batch: 190126

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Chloride			50.0	49.4		ug/Kg		99	45 - 150	7	30
Methyl Ethyl Ketone			200	202		ug/Kg		101	62 - 126	9	30
methyl isobutyl ketone			200	189		ug/Kg		95	56 - 137	5	30
Methyl tert-butyl ether			50.0	51.9		ug/Kg		104	69 - 124	5	30
Naphthalene			50.0	46.0		ug/Kg		92	64 - 126	9	30
Styrene			50.0	48.7		ug/Kg		97	66 - 132	8	30
Tert-amyl methyl ether			50.0	54.0		ug/Kg		108	65 - 124	7	30
tert-Butyl alcohol			500	436		ug/Kg		87	12 - 150	11	30
1,1,2,2-Tetrachloroethane			50.0	46.2		ug/Kg		92	67 - 120	8	30
Tetrachloroethene			50.0	48.5		ug/Kg		97	74 - 126	8	30
Toluene			50.0	46.7		ug/Kg		93	76 - 120	8	30
trans-1,2-Dichloroethene			50.0	49.0		ug/Kg		98	65 - 130	7	30
trans-1,3-Dichloropropene			50.0	53.4		ug/Kg		107	65 - 126	6	30
1,2,4-Trichlorobenzene			50.0	44.7		ug/Kg		89	72 - 126	12	30
1,1,1-Trichloroethane			50.0	50.4		ug/Kg		101	72 - 121	4	30
1,1,2-Trichloroethane			50.0	48.3		ug/Kg		97	75 - 118	8	30
Trichloroethene			50.0	50.2		ug/Kg		100	76 - 122	4	30
Trichlorofluoromethane			50.0	50.6		ug/Kg		101	65 - 132	5	30
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	48.9		ug/Kg		98	74 - 123	5	30
Vinyl chloride			50.0	49.0		ug/Kg		98	52 - 134	6	30
Xylenes, Total			100	93.1		ug/Kg		93	70 - 120	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*72 - 122*
Dibromofluoromethane	*102*		*79 - 123*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-290552/3-A
Matrix: Water
Analysis Batch: 290916

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290552

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	10	U	10	1.1	ug/L		08/23/13 15:49	08/26/13 17:45	1
Acetophenone	10	U	10	0.57	ug/L		08/23/13 15:49	08/26/13 17:45	1
Bis(2-chloroethyl)ether	10	U	10	1.1	ug/L		08/23/13 15:49	08/26/13 17:45	1
bis (2-chloroisopropyl) ether	10	U	10	0.78	ug/L		08/23/13 15:49	08/26/13 17:45	1
Bis(2-chloroethoxy)methane	10	U	10	0.94	ug/L		08/23/13 15:49	08/26/13 17:45	1
Caprolactam	10	U	10	0.79	ug/L		08/23/13 15:49	08/26/13 17:45	1
4-Chloroaniline	20	U	20	2.2	ug/L		08/23/13 15:49	08/26/13 17:45	1
4-Chloro-3-methylphenol	10	U	10	1.0	ug/L		08/23/13 15:49	08/26/13 17:45	1
2-Chlorophenol	10	U	10	0.87	ug/L		08/23/13 15:49	08/26/13 17:45	1
1,1'-Biphenyl	10	U	10	0.58	ug/L		08/23/13 15:49	08/26/13 17:45	1
2-Chloronaphthalene	10	U	10	0.80	ug/L		08/23/13 15:49	08/26/13 17:45	1
2,4-Dichlorophenol	10	U	10	1.1	ug/L		08/23/13 15:49	08/26/13 17:45	1
Acenaphthylene	10	U	10	0.85	ug/L		08/23/13 15:49	08/26/13 17:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290552/3-A
Matrix: Water
Analysis Batch: 290916

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290552

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	10	U	10	4.0	ug/L		08/23/13 15:49	08/26/13 17:45	1
Acenaphthene	10	U	10	0.76	ug/L		08/23/13 15:49	08/26/13 17:45	1
Dimethyl phthalate	10	U	10	0.99	ug/L		08/23/13 15:49	08/26/13 17:45	1
2,4-Dinitrophenol	50	U	50	10	ug/L		08/23/13 15:49	08/26/13 17:45	1
Dibenzofuran	10	U	10	0.79	ug/L		08/23/13 15:49	08/26/13 17:45	1
2,4-Dinitrotoluene	10	U	10	1.2	ug/L		08/23/13 15:49	08/26/13 17:45	1
2,6-Dinitrotoluene	10	U	10	1.1	ug/L		08/23/13 15:49	08/26/13 17:45	1
Diethyl phthalate	10	U	10	0.88	ug/L		08/23/13 15:49	08/26/13 17:45	1
4-Chlorophenyl phenyl ether	10	U	10	0.84	ug/L		08/23/13 15:49	08/26/13 17:45	1
Fluorene	10	U	10	0.96	ug/L		08/23/13 15:49	08/26/13 17:45	1
4,6-Dinitro-2-methylphenol	50	U	50	10	ug/L		08/23/13 15:49	08/26/13 17:45	1
4-Bromophenyl phenyl ether	10	U	10	0.77	ug/L		08/23/13 15:49	08/26/13 17:45	1
Hexachlorobenzene	10	U	10	0.79	ug/L		08/23/13 15:49	08/26/13 17:45	1
Hexachlorobutadiene	10	U	10	0.62	ug/L		08/23/13 15:49	08/26/13 17:45	1
Atrazine	10	U	10	1.2	ug/L		08/23/13 15:49	08/26/13 17:45	1
Hexachlorocyclopentadiene	10	U	10	2.5	ug/L		08/23/13 15:49	08/26/13 17:45	1
Hexachloroethane	10	U	10	0.76	ug/L		08/23/13 15:49	08/26/13 17:45	1
Anthracene	10	U	10	0.69	ug/L		08/23/13 15:49	08/26/13 17:45	1
Isophorone	10	U	10	0.90	ug/L		08/23/13 15:49	08/26/13 17:45	1
2-Methylnaphthalene	10	U	10	0.78	ug/L		08/23/13 15:49	08/26/13 17:45	1
Carbazole	10	U	10	0.71	ug/L		08/23/13 15:49	08/26/13 17:45	1
2-Methylphenol	10	U	10	0.89	ug/L		08/23/13 15:49	08/26/13 17:45	1
Di-n-butyl phthalate	10	U	10	0.83	ug/L		08/23/13 15:49	08/26/13 17:45	1
3 & 4 Methylphenol	10	U	10	1.3	ug/L		08/23/13 15:49	08/26/13 17:45	1
Fluoranthene	10	U	10	0.74	ug/L		08/23/13 15:49	08/26/13 17:45	1
Naphthalene	10	U	10	0.70	ug/L		08/23/13 15:49	08/26/13 17:45	1
2-Nitroaniline	50	U	50	1.3	ug/L		08/23/13 15:49	08/26/13 17:45	1
Butyl benzyl phthalate	10	U	10	1.2	ug/L		08/23/13 15:49	08/26/13 17:45	1
3,3'-Dichlorobenzidine	60	U	60	30	ug/L		08/23/13 15:49	08/26/13 17:45	1
3-Nitroaniline	50	U	50	5.0	ug/L		08/23/13 15:49	08/26/13 17:45	1
4-Nitroaniline	50	U	50	5.0	ug/L		08/23/13 15:49	08/26/13 17:45	1
Benzo[a]anthracene	10	U	10	0.55	ug/L		08/23/13 15:49	08/26/13 17:45	1
Chrysene	10	U	10	0.51	ug/L		08/23/13 15:49	08/26/13 17:45	1
Nitrobenzene	10	U	10	0.73	ug/L		08/23/13 15:49	08/26/13 17:45	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.6	ug/L		08/23/13 15:49	08/26/13 17:45	1
2-Nitrophenol	10	U	10	0.76	ug/L		08/23/13 15:49	08/26/13 17:45	1
Di-n-octyl phthalate	10	U	10	1.4	ug/L		08/23/13 15:49	08/26/13 17:45	1
4-Nitrophenol	50	U	50	1.9	ug/L		08/23/13 15:49	08/26/13 17:45	1
Benzo[b]fluoranthene	10	U	10	2.6	ug/L		08/23/13 15:49	08/26/13 17:45	1
Benzo[k]fluoranthene	10	U	10	1.2	ug/L		08/23/13 15:49	08/26/13 17:45	1
N-Nitrosodi-n-propylamine	10	U	10	0.72	ug/L		08/23/13 15:49	08/26/13 17:45	1
Benzo[a]pyrene	10	U	10	0.71	ug/L		08/23/13 15:49	08/26/13 17:45	1
N-Nitrosodiphenylamine	10	U	10	0.92	ug/L		08/23/13 15:49	08/26/13 17:45	1
Indeno[1,2,3-cd]pyrene	10	U	10	1.0	ug/L		08/23/13 15:49	08/26/13 17:45	1
Pentachlorophenol	50	U	50	2.0	ug/L		08/23/13 15:49	08/26/13 17:45	1
Dibenz(a,h)anthracene	10	U	10	1.0	ug/L		08/23/13 15:49	08/26/13 17:45	1
Phenanthrene	10	U	10	0.77	ug/L		08/23/13 15:49	08/26/13 17:45	1
Benzo[g,h,i]perylene	10	U	10	0.87	ug/L		08/23/13 15:49	08/26/13 17:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290552/3-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 290916 — **Prep Batch: 290552**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	10	U	10	0.83	ug/L		08/23/13 15:49	08/26/13 17:45	1
Pyrene	10	U	10	0.63	ug/L		08/23/13 15:49	08/26/13 17:45	1
2,4,5-Trichlorophenol	10	U	10	1.2	ug/L		08/23/13 15:49	08/26/13 17:45	1
2,4,6-Trichlorophenol	10	U	10	0.85	ug/L		08/23/13 15:49	08/26/13 17:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*81*		*39 - 130*	*08/23/13 15:49*	*08/26/13 17:45*	*1*
2-Fluorobiphenyl	*78*		*38 - 130*	*08/23/13 15:49*	*08/26/13 17:45*	*1*
Terphenyl-d14 (Surr)	*86*		*10 - 143*	*08/23/13 15:49*	*08/26/13 17:45*	*1*
Phenol-d5 (Surr)	*70*		*25 - 130*	*08/23/13 15:49*	*08/26/13 17:45*	*1*
2-Fluorophenol (Surr)	*74*		*25 - 130*	*08/23/13 15:49*	*08/26/13 17:45*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*31 - 141*	*08/23/13 15:49*	*08/26/13 17:45*	*1*

Lab Sample ID: LCS 680-290552/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 290916 — **Prep Batch: 290552**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	100	124		ug/L		124	59 - 142
Acetophenone	100	85.4		ug/L		85	54 - 130
Bis(2-chloroethyl)ether	100	81.0		ug/L		81	56 - 130
bis (2-chloroisopropyl) ether	100	76.8		ug/L		77	55 - 130
Bis(2-chloroethoxy)methane	100	93.6		ug/L		94	64 - 130
Caprolactam	100	72.6		ug/L		73	34 - 130
4-Chloroaniline	100	50.4		ug/L		50	42 - 130
4-Chloro-3-methylphenol	100	96.7		ug/L		97	60 - 130
2-Chlorophenol	100	80.4		ug/L		80	57 - 130
1,1'-Biphenyl	100	85.9		ug/L		86	54 - 130
2-Chloronaphthalene	100	88.0		ug/L		88	53 - 130
2,4-Dichlorophenol	100	93.2		ug/L		93	54 - 130
Acenaphthylene	100	91.8		ug/L		92	60 - 130
2,4-Dimethylphenol	100	84.4		ug/L		84	40 - 130
Acenaphthene	100	79.4		ug/L		79	55 - 130
Dimethyl phthalate	100	98.3		ug/L		98	69 - 130
2,4-Dinitrophenol	100	107		ug/L		107	20 - 165
Dibenzofuran	100	89.4		ug/L		89	58 - 130
2,4-Dinitrotoluene	100	93.1		ug/L		93	63 - 130
2,6-Dinitrotoluene	100	91.4		ug/L		91	65 - 130
Diethyl phthalate	100	97.3		ug/L		97	70 - 130
4-Chlorophenyl phenyl ether	100	98.7		ug/L		99	57 - 130
Fluorene	100	95.3		ug/L		95	61 - 130
4,6-Dinitro-2-methylphenol	100	104		ug/L		104	45 - 134
4-Bromophenyl phenyl ether	100	98.8		ug/L		99	61 - 130
Hexachlorobenzene	100	88.5		ug/L		88	52 - 130
Hexachlorobutadiene	100	77.4		ug/L		77	36 - 130
Atrazine	100	105		ug/L		105	66 - 130
Hexachlorocyclopentadiene	100	43.8		ug/L		44	10 - 130
Hexachloroethane	100	62.4		ug/L		62	39 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290552/4-A
Matrix: Water
Analysis Batch: 290916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290552

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	100	88.5		ug/L		88	61 - 130
Isophorone	100	86.9		ug/L		87	59 - 130
2-Methylnaphthalene	100	81.1		ug/L		81	52 - 130
Carbazole	100	98.8		ug/L		99	67 - 130
2-Methylphenol	100	83.1		ug/L		83	55 - 130
Di-n-butyl phthalate	100	96.1		ug/L		96	66 - 130
3 & 4 Methylphenol	100	85.8		ug/L		86	35 - 130
Fluoranthene	100	91.6		ug/L		92	56 - 130
Naphthalene	100	80.4		ug/L		80	50 - 130
2-Nitroaniline	100	97.8		ug/L		98	60 - 130
Butyl benzyl phthalate	100	90.1		ug/L		90	66 - 130
3,3'-Dichlorobenzidine	100	52.8	J	ug/L		53	27 - 130
3-Nitroaniline	100	83.4		ug/L		83	54 - 130
4-Nitroaniline	100	93.8		ug/L		94	54 - 130
Benzo[a]anthracene	100	83.0		ug/L		83	58 - 130
Chrysene	100	86.8		ug/L		87	59 - 130
Nitrobenzene	100	86.2		ug/L		86	56 - 130
Bis(2-ethylhexyl) phthalate	100	84.9		ug/L		85	62 - 130
2-Nitrophenol	100	92.0		ug/L		92	54 - 130
Di-n-octyl phthalate	100	86.3		ug/L		86	64 - 130
4-Nitrophenol	100	85.9		ug/L		86	38 - 130
Benzo[b]fluoranthene	100	80.7		ug/L		81	51 - 130
Benzo[k]fluoranthene	100	79.4		ug/L		79	53 - 130
N-Nitrosodi-n-propylamine	100	88.4		ug/L		88	64 - 130
Benzo[a]pyrene	100	76.5		ug/L		77	61 - 130
N-Nitrosodiphenylamine	100	101		ug/L		101	68 - 130
Indeno[1,2,3-cd]pyrene	100	77.1		ug/L		77	47 - 130
Pentachlorophenol	100	112		ug/L		112	42 - 138
Dibenz(a,h)anthracene	100	78.2		ug/L		78	55 - 130
Phenanthrene	100	92.9		ug/L		93	62 - 130
Benzo[g,h,i]perylene	100	78.0		ug/L		78	54 - 130
Phenol	100	73.5		ug/L		73	29 - 130
Pyrene	100	84.4		ug/L		84	60 - 130
2,4,5-Trichlorophenol	100	105		ug/L		105	61 - 130
2,4,6-Trichlorophenol	100	105		ug/L		105	57 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*89*		*39 - 130*
2-Fluorobiphenyl	*90*		*38 - 130*
Terphenyl-d14 (Surr)	*92*		*10 - 143*
Phenol-d5 (Surr)	*74*		*25 - 130*
2-Fluorophenol (Surr)	*74*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*98*		*31 - 141*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93498-1 MS
Matrix: Water
Analysis Batch: 290916

Client Sample ID: PZ02-04 (082113)
Prep Type: Total/NA
Prep Batch: 290552

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	9.9	U ^	99.2	62.0	^	ug/L		62	59 - 142
Acetophenone	9.9	U	99.2	63.6		ug/L		64	54 - 130
Bis(2-chloroethyl)ether	9.9	U	99.2	57.1		ug/L		58	56 - 130
bis (2-chloroisopropyl) ether	9.9	U	99.2	55.4		ug/L		56	55 - 130
Bis(2-chloroethoxy)methane	9.9	U	99.2	64.2		ug/L		65	64 - 130
Caprolactam	9.9	U	99.2	53.5		ug/L		54	34 - 130
4-Chloroaniline	20	U	99.2	6.04	J F	ug/L		6	42 - 130
4-Chloro-3-methylphenol	9.9	U	99.2	68.4		ug/L		69	60 - 130
2-Chlorophenol	9.9	U	99.2	63.3		ug/L		64	57 - 130
1,1'-Biphenyl	9.9	U	99.2	62.5		ug/L		63	54 - 130
2-Chloronaphthalene	9.9	U	99.2	61.4		ug/L		62	53 - 130
2,4-Dichlorophenol	9.9	U	99.2	70.6		ug/L		71	54 - 130
Acenaphthylene	9.9	U	99.2	69.8		ug/L		70	60 - 130
2,4-Dimethylphenol	9.9	U	99.2	72.3		ug/L		73	40 - 130
Acenaphthene	9.9	U	99.2	61.6		ug/L		62	55 - 130
Dimethyl phthalate	9.9	U	99.2	73.8		ug/L		74	69 - 130
2,4-Dinitrophenol	50	U	99.2	80.4		ug/L		81	20 - 165
Dibenzofuran	9.9	U	99.2	68.7		ug/L		69	58 - 130
2,4-Dinitrotoluene	9.9	U	99.2	71.0		ug/L		72	63 - 130
2,6-Dinitrotoluene	9.9	U	99.2	70.2		ug/L		71	65 - 130
Diethyl phthalate	9.9	U	99.2	72.1		ug/L		73	70 - 130
4-Chlorophenyl phenyl ether	9.9	U	99.2	72.9		ug/L		73	57 - 130
Fluorene	9.9	U	99.2	72.7		ug/L		73	61 - 130
4,6-Dinitro-2-methylphenol	50	U	99.2	81.3		ug/L		82	45 - 134
4-Bromophenyl phenyl ether	9.9	U	99.2	74.7		ug/L		75	61 - 130
Hexachlorobenzene	9.9	U	99.2	58.3		ug/L		59	52 - 130
Hexachlorobutadiene	9.9	U	99.2	54.6		ug/L		55	36 - 130
Atrazine	9.9	U	99.2	20.9	F	ug/L		21	66 - 130
Hexachlorocyclopentadiene	9.9	U	99.2	32.7		ug/L		33	10 - 130
Hexachloroethane	9.9	U	99.2	44.4		ug/L		45	39 - 130
Anthracene	9.9	U	99.2	66.9		ug/L		67	61 - 130
Isophorone	9.9	U	99.2	62.9		ug/L		63	59 - 130
2-Methylnaphthalene	9.9	U	99.2	57.2		ug/L		58	52 - 130
Carbazole	9.9	U	99.2	60.7	F	ug/L		61	67 - 130
2-Methylphenol	9.9	U	99.2	63.0		ug/L		63	55 - 130
Di-n-butyl phthalate	9.9	U	99.2	69.9		ug/L		70	66 - 130
3 & 4 Methylphenol	9.9	U	99.2	66.8		ug/L		67	35 - 130
Fluoranthene	9.9	U	99.2	68.7		ug/L		69	56 - 130
Naphthalene	9.9	U	99.2	57.8		ug/L		58	50 - 130
2-Nitroaniline	50	U	99.2	66.7		ug/L		67	60 - 130
Butyl benzyl phthalate	9.9	U	99.2	67.8		ug/L		68	66 - 130
3,3'-Dichlorobenzidine	60	U	99.2	60	U F	ug/L		0	27 - 130
3-Nitroaniline	50	U	99.2	6.89	J F	ug/L		7	54 - 130
4-Nitroaniline	50	U	99.2	31.3	J F	ug/L		32	54 - 130
Benzo[a]anthracene	9.9	U	99.2	53.0	F	ug/L		53	58 - 130
Chrysene	9.9	U	99.2	54.6	F	ug/L		55	59 - 130
Nitrobenzene	9.9	U	99.2	61.7		ug/L		62	56 - 130
Bis(2-ethylhexyl) phthalate	9.9	U	99.2	51.4	F	ug/L		52	62 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93498-1 MS
Matrix: Water
Analysis Batch: 290916

Client Sample ID: PZ02-04 (082113)
Prep Type: Total/NA
Prep Batch: 290552

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Nitrophenol	9.9	U	99.2	69.3		ug/L		70	54 - 130
Di-n-octyl phthalate	9.9	U	99.2	51.6	F	ug/L		52	64 - 130
4-Nitrophenol	50	U	99.2	58.8		ug/L		59	38 - 130
Benzo[b]fluoranthene	9.9	U	99.2	65.2		ug/L		66	51 - 130
Benzo[k]fluoranthene	9.9	U	99.2	63.6		ug/L		64	53 - 130
N-Nitrosodi-n-propylamine	9.9	U	99.2	65.0		ug/L		65	64 - 130
Benzo[a]pyrene	9.9	U	99.2	55.0	F	ug/L		55	61 - 130
N-Nitrosodiphenylamine	9.9	U	99.2	26.6	F	ug/L		27	68 - 130
Indeno[1,2,3-cd]pyrene	9.9	U	99.2	42.4	F	ug/L		43	47 - 130
Pentachlorophenol	50	U	99.2	87.4		ug/L		88	42 - 138
Dibenz(a,h)anthracene	9.9	U	99.2	58.1		ug/L		59	55 - 130
Phenanthrene	9.9	U	99.2	72.5		ug/L		73	62 - 130
Benzo[g,h,i]perylene	9.9	U	99.2	52.2	F	ug/L		53	54 - 130
Phenol	9.9	U	99.2	53.8		ug/L		54	29 - 130
Pyrene	9.9	U	99.2	63.9		ug/L		64	60 - 130
2,4,5-Trichlorophenol	9.9	U	99.2	77.5		ug/L		78	61 - 130
2,4,6-Trichlorophenol	9.9	U	99.2	79.9		ug/L		81	57 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*63*		*39 - 130*
2-Fluorobiphenyl	*64*		*38 - 130*
Terphenyl-d14 (Surr)	*30*		*10 - 143*
Phenol-d5 (Surr)	*52*		*25 - 130*
2-Fluorophenol (Surr)	*56*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*75*		*31 - 141*

Lab Sample ID: 680-93498-1 MSD
Matrix: Water
Analysis Batch: 291040

Client Sample ID: PZ02-04 (082113)
Prep Type: Total/NA
Prep Batch: 290552

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzaldehyde	9.9	U ^	95.5	67.4	^	ug/L		71	59 - 142	8	50
Acetophenone	9.9	U	95.5	65.4		ug/L		68	54 - 130	3	50
Bis(2-chloroethyl)ether	9.9	U	95.5	65.1		ug/L		68	56 - 130	13	50
bis (2-chloroisopropyl) ether	9.9	U	95.5	55.0		ug/L		58	55 - 130	1	50
Bis(2-chloroethoxy)methane	9.9	U	95.5	48.6	F	ug/L		51	64 - 130	28	50
Caprolactam	9.9	U	95.5	53.8		ug/L		56	34 - 130	1	50
4-Chloroaniline	20	U	95.5	3.11	J F	ug/L		3	42 - 130	64	50
4-Chloro-3-methylphenol	9.9	U	95.5	74.5		ug/L		78	60 - 130	8	50
2-Chlorophenol	9.9	U	95.5	67.6		ug/L		71	57 - 130	7	50
1,1'-Biphenyl	9.9	U	95.5	65.2		ug/L		68	54 - 130	4	50
2-Chloronaphthalene	9.9	U	95.5	62.4		ug/L		65	53 - 130	2	50
2,4-Dichlorophenol	9.9	U	95.5	77.1		ug/L		81	54 - 130	9	50
Acenaphthylene	9.9	U	95.5	63.2		ug/L		66	60 - 130	10	50
2,4-Dimethylphenol	9.9	U	95.5	74.3		ug/L		78	40 - 130	3	50
Acenaphthene	9.9	U	95.5	61.1		ug/L		64	55 - 130	1	50
Dimethyl phthalate	9.9	U	95.5	77.8		ug/L		82	69 - 130	5	50
2,4-Dinitrophenol	50	U	95.5	48	U F	ug/L		0	20 - 165	NC	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93498-1 MSD
Matrix: Water
Analysis Batch: 291040

Client Sample ID: PZ02-04 (082113)
Prep Type: Total/NA
Prep Batch: 290552

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dibenzofuran	9.9	U	95.5	71.6		ug/L		75	58 - 130	4	50
2,4-Dinitrotoluene	9.9	U	95.5	75.5		ug/L		79	63 - 130	6	50
2,6-Dinitrotoluene	9.9	U	95.5	76.5		ug/L		80	65 - 130	9	50
Diethyl phthalate	9.9	U	95.5	77.5		ug/L		81	70 - 130	7	50
4-Chlorophenyl phenyl ether	9.9	U	95.5	74.8		ug/L		78	57 - 130	3	50
Fluorene	9.9	U	95.5	74.4		ug/L		78	61 - 130	2	50
4,6-Dinitro-2-methylphenol	50	U	95.5	91.2		ug/L		96	45 - 134	12	50
4-Bromophenyl phenyl ether	9.9	U	95.5	9.5	U F	ug/L		0	61 - 130	NC	50
Hexachlorobenzene	9.9	U	95.5	67.2		ug/L		70	52 - 130	14	50
Hexachlorobutadiene	9.9	U	95.5	56.2		ug/L		59	36 - 130	3	50
Atrazine	9.9	U	95.5	18.2	F	ug/L		19	66 - 130	14	50
Hexachlorocyclopentadiene	9.9	U	95.5	31.2		ug/L		33	10 - 130	5	50
Hexachloroethane	9.9	U	95.5	43.9		ug/L		46	39 - 130	1	50
Anthracene	9.9	U	95.5	65.1		ug/L		68	61 - 130	3	50
Isophorone	9.9	U	95.5	65.9		ug/L		69	59 - 130	5	50
2-Methylnaphthalene	9.9	U	95.5	60.4		ug/L		63	52 - 130	5	50
Carbazole	9.9	U	95.5	52.6	F	ug/L		55	67 - 130	14	50
2-Methylphenol	9.9	U	95.5	68.9		ug/L		72	55 - 130	9	50
Di-n-butyl phthalate	9.9	U	95.5	72.0		ug/L		75	66 - 130	3	50
3 & 4 Methylphenol	9.9	U	95.5	74.2		ug/L		78	35 - 130	11	50
Fluoranthene	9.9	U	95.5	66.9		ug/L		70	56 - 130	3	50
Naphthalene	9.9	U	95.5	58.1		ug/L		61	50 - 130	1	50
2-Nitroaniline	50	U	95.5	66.5		ug/L		70	60 - 130	0	50
Butyl benzyl phthalate	9.9	U	95.5	62.6		ug/L		66	66 - 130	8	50
3,3'-Dichlorobenzidine	60	U	95.5	57	U F	ug/L		0	27 - 130	NC	50
3-Nitroaniline	50	U	95.5	5.43	J F	ug/L		6	54 - 130	24	50
4-Nitroaniline	50	U	95.5	25.1	J F	ug/L		26	54 - 130	22	50
Benzo[a]anthracene	9.9	U	95.5	56.0		ug/L		59	58 - 130	6	50
Chrysene	9.9	U	95.5	58.5		ug/L		61	59 - 130	7	50
Nitrobenzene	9.9	U	95.5	61.2		ug/L		64	56 - 130	1	50
Bis(2-ethylhexyl) phthalate	9.9	U	95.5	54.3	F	ug/L		57	62 - 130	6	50
2-Nitrophenol	9.9	U	95.5	67.4		ug/L		71	54 - 130	3	50
Di-n-octyl phthalate	9.9	U	95.5	55.8	F	ug/L		58	64 - 130	8	50
4-Nitrophenol	50	U	95.5	64.9		ug/L		68	38 - 130	10	50
Benzo[b]fluoranthene	9.9	U	95.5	52.5		ug/L		55	51 - 130	22	50
Benzo[k]fluoranthene	9.9	U	95.5	53.3		ug/L		56	53 - 130	18	50
N-Nitrosodi-n-propylamine	9.9	U	95.5	72.5		ug/L		76	64 - 130	11	50
Benzo[a]pyrene	9.9	U	95.5	44.4	F	ug/L		46	61 - 130	21	50
N-Nitrosodiphenylamine	9.9	U	95.5	30.2	F	ug/L		32	68 - 130	13	50
Indeno[1,2,3-cd]pyrene	9.9	U	95.5	50.1		ug/L		53	47 - 130	17	50
Pentachlorophenol	50	U	95.5	94.8		ug/L		99	42 - 138	8	50
Dibenz(a,h)anthracene	9.9	U	95.5	50.2	F	ug/L		53	55 - 130	15	50
Phenanthrene	9.9	U	95.5	71.4		ug/L		75	62 - 130	2	50
Benzo[g,h,i]perylene	9.9	U	95.5	49.6	F	ug/L		52	54 - 130	5	50
Phenol	9.9	U	95.5	57.3		ug/L		60	29 - 130	6	50
Pyrene	9.9	U	95.5	59.3		ug/L		62	60 - 130	7	50
2,4,5-Trichlorophenol	9.9	U	95.5	82.3		ug/L		86	61 - 130	6	50
2,4,6-Trichlorophenol	9.9	U	95.5	85.2		ug/L		89	57 - 130	6	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93498-1 MSD
Matrix: Water
Analysis Batch: 291040

Client Sample ID: PZ02-04 (082113)
Prep Type: Total/NA
Prep Batch: 290552

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*74*		*39 - 130*
2-Fluorobiphenyl	*76*		*38 - 130*
Terphenyl-d14 (Surr)	*36*		*10 - 143*
Phenol-d5 (Surr)	*64*		*25 - 130*
2-Fluorophenol (Surr)	*64*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*93*		*31 - 141*

Lab Sample ID: MB 680-290873/21-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290873

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	57	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Acetophenone	330	U	330	28	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Bis(2-chloroethyl)ether	330	U	330	44	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Bis(2-chloroethoxy)methane	330	U	330	38	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Caprolactam	330	U	330	65	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
4-Chloroaniline	650	U	650	51	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2-Chlorophenol	330	U	330	39	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
1,1'-Biphenyl	730	U	730	730	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Acenaphthylene	330	U	330	36	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2,4-Dimethylphenol	330	U	330	43	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Acenaphthene	330	U	330	40	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Dimethyl phthalate	330	U	330	34	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2,4-Dinitrophenol	1700	U	1700	820	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Dibenzofuran	330	U	330	33	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2,4-Dinitrotoluene	330	U	330	48	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2,6-Dinitrotoluene	330	U	330	41	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Diethyl phthalate	330	U	330	37	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
4-Chlorophenyl phenyl ether	330	U	330	43	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Fluorene	330	U	330	36	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Hexachlorobenzene	330	U	330	38	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Atrazine	330	U	330	23	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Hexachlorocyclopentadiene	330	U	330	40	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Hexachloroethane	330	U	330	28	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Anthracene	330	U	330	25	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Isophorone	330	U	330	33	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2-Methylnaphthalene	330	U	330	37	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Carbazole	330	U	330	30	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2-Methylphenol	330	U	330	27	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		08/26/13 21:27	08/30/13 10:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290873/21-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290873

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	330	U	330	42	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Fluoranthene	330	U	330	32	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Naphthalene	330	U	330	30	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2-Nitroaniline	1700	U	1700	44	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
3,3'-Dichlorobenzidine	650	U	650	28	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
3-Nitroaniline	1700	U	1700	45	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
4-Nitroaniline	1700	U	1700	48	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Chrysene	330	U	330	21	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Nitrobenzene	330	U	330	26	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2-Nitrophenol	330	U	330	40	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Benzo[b]fluoranthene	330	U	330	37	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Benzo[k]fluoranthene	330	U	330	64	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Benzo[a]pyrene	330	U	330	51	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Dibenz(a,h)anthracene	330	U	330	38	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Phenanthrene	330	U	330	27	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Phenol	330	U	330	34	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
Pyrene	330	U	330	27	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		08/26/13 21:27	08/30/13 10:45	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		08/26/13 21:27	08/30/13 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*78*		*46 - 130*	*08/26/13 21:27*	*08/30/13 10:45*	*1*
2-Fluorobiphenyl	*63*		*58 - 130*	*08/26/13 21:27*	*08/30/13 10:45*	*1*
Terphenyl-d14 (Surr)	*82*		*60 - 130*	*08/26/13 21:27*	*08/30/13 10:45*	*1*
Phenol-d5 (Surr)	*96*		*49 - 130*	*08/26/13 21:27*	*08/30/13 10:45*	*1*
2-Fluorophenol (Surr)	*103*		*40 - 130*	*08/26/13 21:27*	*08/30/13 10:45*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*58 - 130*	*08/26/13 21:27*	*08/30/13 10:45*	*1*

Lab Sample ID: LCS 680-290873/22-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3300	741		ug/Kg		22	10 - 130
Acetophenone	3300	2250		ug/Kg		68	42 - 130
Bis(2-chloroethyl)ether	3300	2280		ug/Kg		69	42 - 130
bis (2-chloroisopropyl) ether	3300	2380		ug/Kg		72	44 - 130
Bis(2-chloroethoxy)methane	3300	2880		ug/Kg		87	56 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290873/22-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Caprolactam	3300	3370		ug/Kg		102	52 - 130
4-Chloroaniline	3300	2400		ug/Kg		73	36 - 130
4-Chloro-3-methylphenol	3300	3210		ug/Kg		97	52 - 130
2-Chlorophenol	3300	2590		ug/Kg		78	51 - 130
1,1'-Biphenyl	3300	2870		ug/Kg		87	57 - 130
2-Chloronaphthalene	3300	2690		ug/Kg		82	55 - 130
2,4-Dichlorophenol	3300	2860		ug/Kg		87	53 - 130
Acenaphthylene	3300	3120		ug/Kg		94	58 - 130
2,4-Dimethylphenol	3300	2940		ug/Kg		89	47 - 130
Acenaphthene	3300	2640		ug/Kg		80	58 - 130
Dimethyl phthalate	3300	3150		ug/Kg		95	63 - 130
2,4-Dinitrophenol	3300	2780		ug/Kg		84	10 - 154
Dibenzofuran	3300	2750		ug/Kg		83	56 - 130
2,4-Dinitrotoluene	3300	2930		ug/Kg		89	55 - 130
2,6-Dinitrotoluene	3300	3130		ug/Kg		95	57 - 130
Diethyl phthalate	3300	3020		ug/Kg		92	62 - 130
4-Chlorophenyl phenyl ether	3300	2880		ug/Kg		87	61 - 130
Fluorene	3300	2720		ug/Kg		82	58 - 130
4,6-Dinitro-2-methylphenol	3300	1920		ug/Kg		58	14 - 137
4-Bromophenyl phenyl ether	3300	2720		ug/Kg		82	65 - 130
Hexachlorobenzene	3300	2610		ug/Kg		79	59 - 130
Hexachlorobutadiene	3300	2770		ug/Kg		84	47 - 130
Atrazine	3300	2540		ug/Kg		77	54 - 141
Hexachlorocyclopentadiene	3300	2730		ug/Kg		83	35 - 130
Hexachloroethane	3300	2350		ug/Kg		71	44 - 130
Anthracene	3300	2940		ug/Kg		89	60 - 130
Isophorone	3300	2570		ug/Kg		78	48 - 130
2-Methylnaphthalene	3300	2560		ug/Kg		77	55 - 130
Carbazole	3300	2660		ug/Kg		81	60 - 130
2-Methylphenol	3300	2800		ug/Kg		85	49 - 130
Di-n-butyl phthalate	3300	3010		ug/Kg		91	65 - 130
3 & 4 Methylphenol	3300	2910		ug/Kg		88	50 - 130
Fluoranthene	3300	3090		ug/Kg		93	62 - 130
Naphthalene	3300	2650		ug/Kg		80	54 - 130
2-Nitroaniline	3300	2990		ug/Kg		91	52 - 130
Butyl benzyl phthalate	3300	2870		ug/Kg		87	65 - 134
3,3'-Dichlorobenzidine	3300	3030		ug/Kg		92	45 - 130
3-Nitroaniline	3300	2810		ug/Kg		85	42 - 130
4-Nitroaniline	3300	2790		ug/Kg		85	49 - 130
Benzo[a]anthracene	3300	3130		ug/Kg		95	62 - 130
Chrysene	3300	3200		ug/Kg		97	62 - 130
Nitrobenzene	3300	2530		ug/Kg		77	43 - 130
Bis(2-ethylhexyl) phthalate	3300	3510		ug/Kg		106	62 - 132
2-Nitrophenol	3300	2770		ug/Kg		84	45 - 130
Di-n-octyl phthalate	3300	4310		ug/Kg		131	59 - 146
4-Nitrophenol	3300	2680		ug/Kg		81	30 - 130
Benzo[b]fluoranthene	3300	3030		ug/Kg		92	53 - 130
Benzo[k]fluoranthene	3300	3010		ug/Kg		91	57 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290873/22-A
Matrix: Solid
Analysis Batch: 291613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Nitrosodi-n-propylamine	3300	2750		ug/Kg		83	48 - 130
Benzo[a]pyrene	3300	3040		ug/Kg		92	68 - 131
N-Nitrosodiphenylamine	3300	2020	*	ug/Kg		61	62 - 130
Indeno[1,2,3-cd]pyrene	3300	2210		ug/Kg		67	52 - 130
Pentachlorophenol	3300	2970		ug/Kg		90	38 - 131
Dibenz(a,h)anthracene	3300	3060		ug/Kg		93	56 - 130
Phenanthrene	3300	3080		ug/Kg		93	61 - 130
Benzo[g,h,i]perylene	3300	3060		ug/Kg		93	54 - 130
Phenol	3300	2590		ug/Kg		78	46 - 130
Pyrene	3300	2490		ug/Kg		75	59 - 130
2,4,5-Trichlorophenol	3300	3320		ug/Kg		100	60 - 130
2,4,6-Trichlorophenol	3300	3200		ug/Kg		97	53 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*76*		*46 - 130*
2-Fluorobiphenyl	*89*		*58 - 130*
Terphenyl-d14 (Surr)	*80*		*60 - 130*
Phenol-d5 (Surr)	*75*		*49 - 130*
2-Fluorophenol (Surr)	*110*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*111*		*58 - 130*

Lab Sample ID: MB 680-292846/7-A
Matrix: Solid
Analysis Batch: 293167

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	57	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Acetophenone	330	U	330	28	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Bis(2-chloroethyl)ether	330	U	330	44	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Bis(2-chloroethoxy)methane	330	U	330	39	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Caprolactam	330	U	330	65	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
4-Chloroaniline	650	U	650	51	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2-Chlorophenol	330	U	330	40	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
1,1'-Biphenyl	730	U	730	730	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Acenaphthylene	330	U	330	36	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2,4-Dimethylphenol	330	U	330	44	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Acenaphthene	330	U	330	41	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Dimethyl phthalate	330	U	330	34	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2,4-Dinitrophenol	1700	U	1700	820	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Dibenzofuran	330	U	330	33	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2,4-Dinitrotoluene	330	U	330	48	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2,6-Dinitrotoluene	330	U	330	42	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Diethyl phthalate	330	U	330	37	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
4-Chlorophenyl phenyl ether	330	U	330	44	ug/Kg		09/09/13 19:28	09/11/13 17:09	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-292846/7-A
Matrix: Solid
Analysis Batch: 293167

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	330	U	330	36	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
4-Bromophenyl phenyl ether	51.1	J	330	36	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Hexachlorobenzene	330	U	330	39	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Atrazine	330	U	330	23	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Hexachlorocyclopentadiene	330	U	330	41	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Hexachloroethane	330	U	330	28	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Anthracene	330	U	330	25	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Isophorone	330	U	330	33	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2-Methylnaphthalene	330	U	330	38	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Carbazole	330	U	330	30	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2-Methylphenol	330	U	330	27	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
3 & 4 Methylphenol	330	U	330	43	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Fluoranthene	330	U	330	32	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Naphthalene	330	U	330	30	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2-Nitroaniline	1700	U	1700	44	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
3,3'-Dichlorobenzidine	650	U	650	28	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
3-Nitroaniline	1700	U	1700	45	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
4-Nitroaniline	1700	U	1700	48	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Chrysene	330	U	330	21	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Nitrobenzene	330	U	330	26	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2-Nitrophenol	330	U	330	41	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Benzo[b]fluoranthene	330	U	330	38	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Benzo[k]fluoranthene	330	U	330	64	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Benzo[a]pyrene	330	U	330	51	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Dibenz(a,h)anthracene	330	U	330	39	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Phenanthrene	330	U	330	27	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Phenol	330	U	330	34	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
Pyrene	330	U	330	27	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		09/09/13 19:28	09/11/13 17:09	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		09/09/13 19:28	09/11/13 17:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*53*		*46 - 130*	*09/09/13 19:28*	*09/11/13 17:09*	*1*
2-Fluorobiphenyl	*52*	*X*	*58 - 130*	*09/09/13 19:28*	*09/11/13 17:09*	*1*
Terphenyl-d14 (Surr)	*56*	*X*	*60 - 130*	*09/09/13 19:28*	*09/11/13 17:09*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-292846/7-A
Matrix: Solid
Analysis Batch: 293167

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292846

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5 (Surr)	*52*		*49 - 130*	*09/09/13 19:28*	*09/11/13 17:09*	*1*
2-Fluorophenol (Surr)	*50*		*40 - 130*	*09/09/13 19:28*	*09/11/13 17:09*	*1*
2,4,6-Tribromophenol (Surr)	*50*	*X*	*58 - 130*	*09/09/13 19:28*	*09/11/13 17:09*	*1*

Lab Sample ID: LCS 680-292846/8-A
Matrix: Solid
Analysis Batch: 293167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292846

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3290	678		ug/Kg		21	10 - 130
Acetophenone	3290	1510		ug/Kg		46	42 - 130
Bis(2-chloroethyl)ether	3290	1730		ug/Kg		53	42 - 130
bis (2-chloroisopropyl) ether	3290	1830		ug/Kg		56	44 - 130
Bis(2-chloroethoxy)methane	3290	1770	*	ug/Kg		54	56 - 130
Caprolactam	3290	2000		ug/Kg		61	52 - 130
4-Chloroaniline	3290	1050	*	ug/Kg		32	36 - 130
4-Chloro-3-methylphenol	3290	1790		ug/Kg		55	52 - 130
2-Chlorophenol	3290	1680		ug/Kg		51	51 - 130
1,1'-Biphenyl	3290	1570	*	ug/Kg		48	57 - 130
2-Chloronaphthalene	3290	1630	*	ug/Kg		50	55 - 130
2,4-Dichlorophenol	3290	1720	*	ug/Kg		52	53 - 130
Acenaphthylene	3290	1750	*	ug/Kg		53	58 - 130
2,4-Dimethylphenol	3290	1730		ug/Kg		52	47 - 130
Acenaphthene	3290	1660	*	ug/Kg		50	58 - 130
Dimethyl phthalate	3290	1790	*	ug/Kg		54	63 - 130
2,4-Dinitrophenol	3290	1550	J	ug/Kg		47	10 - 154
Dibenzofuran	3290	1670	*	ug/Kg		51	56 - 130
2,4-Dinitrotoluene	3290	1790	*	ug/Kg		54	55 - 130
2,6-Dinitrotoluene	3290	1660	*	ug/Kg		50	57 - 130
Diethyl phthalate	3290	1830	*	ug/Kg		56	62 - 130
4-Chlorophenyl phenyl ether	3290	1710	*	ug/Kg		52	61 - 130
Fluorene	3290	1740	*	ug/Kg		53	58 - 130
4,6-Dinitro-2-methylphenol	3290	1860		ug/Kg		57	14 - 137
4-Bromophenyl phenyl ether	3290	1790	*	ug/Kg		54	65 - 130
Hexachlorobenzene	3290	1740	*	ug/Kg		53	59 - 130
Hexachlorobutadiene	3290	1560		ug/Kg		47	47 - 130
Atrazine	3290	1790		ug/Kg		54	54 - 141
Hexachlorocyclopentadiene	3290	1310		ug/Kg		40	35 - 130
Hexachloroethane	3290	1540		ug/Kg		47	44 - 130
Anthracene	3290	1780	*	ug/Kg		54	60 - 130
Isophorone	3290	1570		ug/Kg		48	48 - 130
2-Methylnaphthalene	3290	1510	*	ug/Kg		46	55 - 130
Carbazole	3290	2020		ug/Kg		61	60 - 130
2-Methylphenol	3290	1700		ug/Kg		52	49 - 130
Di-n-butyl phthalate	3290	2000	*	ug/Kg		61	65 - 130
3 & 4 Methylphenol	3290	1880		ug/Kg		57	50 - 130
Fluoranthene	3290	2000	*	ug/Kg		61	62 - 130
Naphthalene	3290	1550	*	ug/Kg		47	54 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-292846/8-A
Matrix: Solid
Analysis Batch: 293167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292846

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Nitroaniline	3290	1890		ug/Kg		57	52 - 130
Butyl benzyl phthalate	3290	2010	*	ug/Kg		61	65 - 134
3,3'-Dichlorobenzidine	3290	1550		ug/Kg		47	45 - 130
3-Nitroaniline	3290	1520	J	ug/Kg		46	42 - 130
4-Nitroaniline	3290	1970		ug/Kg		60	49 - 130
Benzo[a]anthracene	3290	2010	*	ug/Kg		61	62 - 130
Chrysene	3290	2000	*	ug/Kg		61	62 - 130
Nitrobenzene	3290	1600		ug/Kg		49	43 - 130
Bis(2-ethylhexyl) phthalate	3290	2050		ug/Kg		62	62 - 132
2-Nitrophenol	3290	1640		ug/Kg		50	45 - 130
Di-n-octyl phthalate	3290	2110		ug/Kg		64	59 - 146
4-Nitrophenol	3290	2110		ug/Kg		64	30 - 130
Benzo[b]fluoranthene	3290	1650	*	ug/Kg		50	53 - 130
Benzo[k]fluoranthene	3290	1760	*	ug/Kg		54	57 - 130
N-Nitrosodi-n-propylamine	3290	1750		ug/Kg		53	48 - 130
Benzo[a]pyrene	3290	1730	*	ug/Kg		53	68 - 131
N-Nitrosodiphenylamine	3290	1900	*	ug/Kg		58	62 - 130
Indeno[1,2,3-cd]pyrene	3290	2090		ug/Kg		64	52 - 130
Pentachlorophenol	3290	2130		ug/Kg		65	38 - 131
Dibenz(a,h)anthracene	3290	1800	*	ug/Kg		55	56 - 130
Phenanthrene	3290	1840	*	ug/Kg		56	61 - 130
Benzo[g,h,i]perylene	3290	1840		ug/Kg		56	54 - 130
Phenol	3290	1760		ug/Kg		54	46 - 130
Pyrene	3290	1790	*	ug/Kg		54	59 - 130
2,4,5-Trichlorophenol	3290	1840	*	ug/Kg		56	60 - 130
2,4,6-Trichlorophenol	3290	1730		ug/Kg		53	53 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*47*		*46 - 130*
2-Fluorobiphenyl	*49*	*X*	*58 - 130*
Terphenyl-d14 (Surr)	*52*	*X*	*60 - 130*
Phenol-d5 (Surr)	*53*		*49 - 130*
2-Fluorophenol (Surr)	*51*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*53*	*X*	*58 - 130*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 680-290531/7
Matrix: Solid
Analysis Batch: 290531

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/23/13 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*80*		*70 - 131*		*08/23/13 12:05*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCS 680-290531/5
Matrix: Solid
Analysis Batch: 290531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	784		ug/Kg		78	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*87*		*70 - 131*

Lab Sample ID: LCSD 680-290531/6
Matrix: Solid
Analysis Batch: 290531

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	879		ug/Kg		88	64 - 133	11	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*90*		*70 - 131*

Lab Sample ID: MB 680-290726/5
Matrix: Solid
Analysis Batch: 290726

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/24/13 13:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*90*		*70 - 131*		*08/24/13 13:39*	*1*

Lab Sample ID: LCS 680-290726/6
Matrix: Solid
Analysis Batch: 290726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	905		ug/Kg		91	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*91*		*70 - 131*

Lab Sample ID: LCSD 680-290726/7
Matrix: Solid
Analysis Batch: 290726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	1290		ug/Kg		129	64 - 133	35	50

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCSD 680-290726/7
Matrix: Solid
Analysis Batch: 290726

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	*87*		*70 - 131*

Lab Sample ID: MB 680-291184/5
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	12.8	J	50	11	ug/L			08/28/13 10:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	*92*		*70 - 130*		*08/28/13 10:51*	*1*

Lab Sample ID: LCS 680-291184/6
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			200	156		ug/L		78	70 - 148		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	*87*		*70 - 130*

Lab Sample ID: LCSD 680-291184/7
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			200	156		ug/L		78	70 - 148	0	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	*88*		*70 - 130*

Lab Sample ID: MB 680-291258/7
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/28/13 16:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	*99*		*70 - 131*		*08/28/13 16:41*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCS 680-291258/6
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	995		ug/Kg		99	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*90*		*70 - 131*

Lab Sample ID: LCSD 680-291258/8
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	954		ug/Kg		95	64 - 133	4	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*86*		*70 - 131*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 490-102687/1-A
Matrix: Solid
Analysis Batch: 103307

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 102687

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5000	U	5000	1400	ug/Kg		08/26/13 14:47	08/28/13 22:58	1
ORO C24-C40	5000	U	5000	1400	ug/Kg		08/26/13 14:47	08/28/13 22:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*79*		*50 - 150*	*08/26/13 14:47*	*08/28/13 22:58*	*1*

Lab Sample ID: LCS 490-102687/2-A
Matrix: Solid
Analysis Batch: 103307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102687

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			40000	37400		ug/Kg		94	54 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*95*		*50 - 150*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: 680-93498-5 MS
Matrix: Solid
Analysis Batch: 103307

Client Sample ID: SB02-07 (5.5-6.5)
Prep Type: Total/NA
Prep Batch: 102687

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	3100	J	48500	38900		ug/Kg	☼	80	10 - 142

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl (Surr)	*77*		*50 - 150*

Lab Sample ID: 680-93498-5 MSD
Matrix: Solid
Analysis Batch: 103307

Client Sample ID: SB02-07 (5.5-6.5)
Prep Type: Total/NA
Prep Batch: 102687

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	3100	J	48100	38200		ug/Kg	☼	79	10 - 142	2	47

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*78*		*50 - 150*

Lab Sample ID: MB 490-103111/1-A
Matrix: Water
Analysis Batch: 103307

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103111

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	36.2	J	100	28	ug/L		08/28/13 07:23	08/28/13 17:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*85*		*50 - 150*	*08/28/13 07:23*	*08/28/13 17:09*	*1*

Lab Sample ID: LCS 490-103111/2-A
Matrix: Water
Analysis Batch: 103307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103111

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	1000	542		ug/L		54	46 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*77*		*50 - 150*

GC/MS VOA

Prep Batch: 189784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	5035	
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	5035	
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	5035	
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	5035	
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	5035	
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	5035	
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	5035	
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	5035	
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	5035	

Analysis Batch: 189997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	8260B	189784
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	8260B	189784
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	8260B	189784
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	8260B	189784
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	8260B	189784
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	8260B	189784
LCS 400-189997/1000	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 400-189997/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 400-189997/4	Method Blank	Total/NA	Solid	8260B	

Analysis Batch: 190083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-1	PZ02-04 (082113)	Total/NA	Water	8260B	
680-93498-3	TB01 (0802113)	Total/NA	Water	8260B	
LCS 400-190083/1000	Lab Control Sample	Total/NA	Water	8260B	
MB 400-190083/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 190126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	8260B	189784
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	8260B	189784
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	8260B	189784
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	8260B	189784
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	8260B	189784
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	8260B	189784
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	8260B	189784
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	8260B	189784
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	8260B	189784
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	8260B	189784
LCS 400-190126/1000	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 400-190126/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 400-190126/4	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 290552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-1	PZ02-04 (082113)	Total/NA	Water	3520C	
680-93498-1 MS	PZ02-04 (082113)	Total/NA	Water	3520C	
680-93498-1 MSD	PZ02-04 (082113)	Total/NA	Water	3520C	
LCS 680-290552/4-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-290552/3-A	Method Blank	Total/NA	Water	3520C	

Prep Batch: 290873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	3546	
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	3546	
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	3546	
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	3546	
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	3546	
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	3546	
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	3546	
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	3546	
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	3546	
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	3546	
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	3546	
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	3546	
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	3546	
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	3546	
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	3546	
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	3546	
LCS 680-290873/22-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-290873/21-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 290916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-1	PZ02-04 (082113)	Total/NA	Water	8270D	290552
680-93498-1 MS	PZ02-04 (082113)	Total/NA	Water	8270D	290552
LCS 680-290552/4-A	Lab Control Sample	Total/NA	Water	8270D	290552
MB 680-290552/3-A	Method Blank	Total/NA	Water	8270D	290552

Analysis Batch: 291040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-1 MSD	PZ02-04 (082113)	Total/NA	Water	8270D	290552

Analysis Batch: 291613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	8270D	290873
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	8270D	290873
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	8270D	290873
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	8270D	290873
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	8270D	290873
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	8270D	290873
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	8270D	290873
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	8270D	290873
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	8270D	290873
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	8270D	290873
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	8270D	290873

GC/MS Semi VOA (Continued)

Analysis Batch: 291613 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	8270D	290873
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	8270D	290873
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	8270D	290873
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	8270D	290873
LCS 680-290873/22-A	Lab Control Sample	Total/NA	Solid	8270D	290873
MB 680-290873/21-A	Method Blank	Total/NA	Solid	8270D	290873

Analysis Batch: 291788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	8270D	290873

Prep Batch: 292846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-6 - RE	SB02-08 (0.5-1.5)	Total/NA	Solid	3546	
LCS 680-292846/8-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-292846/7-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 293167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-6 - RE	SB02-08 (0.5-1.5)	Total/NA	Solid	8270D	292846
LCS 680-292846/8-A	Lab Control Sample	Total/NA	Solid	8270D	292846
MB 680-292846/7-A	Method Blank	Total/NA	Solid	8270D	292846

GC VOA

Prep Batch: 290431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	5035	
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	5035	
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	5035	
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	5035	
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	5035	
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	5035	
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	5035	
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	5035	
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	5035	
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	5035	

Analysis Batch: 290531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	8015C	290431
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	8015C	290431
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	8015C	290431
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	8015C	290431

GC VOA (Continued)

Analysis Batch: 290531 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	8015C	290431
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	8015C	290431
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	8015C	290431
LCS 680-290531/5	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290531/6	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290531/7	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 290726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	8015C	290431
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	8015C	290431
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	8015C	290431
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	8015C	290431
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	8015C	290431
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	8015C	290431
LCS 680-290726/6	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290726/7	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290726/5	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 291184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-1	PZ02-04 (082113)	Total/NA	Water	8015C	
LCS 680-291184/6	Lab Control Sample	Total/NA	Water	8015C	
LCSD 680-291184/7	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 680-291184/5	Method Blank	Total/NA	Water	8015C	

Analysis Batch: 291258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	8015C	290431
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	8015C	290431
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	8015C	290431
LCS 680-291258/6	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-291258/8	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-291258/7	Method Blank	Total/NA	Solid	8015C	

GC Semi VOA

Prep Batch: 102687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	3550C	
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	3550C	
680-93498-5 MS	SB02-07 (5.5-6.5)	Total/NA	Solid	3550C	
680-93498-5 MSD	SB02-07 (5.5-6.5)	Total/NA	Solid	3550C	
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	3550C	
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	3550C	
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	3550C	
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	3550C	
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	3550C	
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	3550C	
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	3550C	

GC Semi VOA (Continued)

Prep Batch: 102687 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	3550C	
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	3550C	
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	3550C	
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	3550C	
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	3550C	
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	3550C	
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	3550C	
LCS 490-102687/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-102687/1-A	Method Blank	Total/NA	Solid	3550C	

Prep Batch: 103111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-1	PZ02-04 (082113)	Total/NA	Water	3510C	
680-93498-20	PZ02-04 (082113) (DRO-SGT)	Total/NA	Water	3510C	
LCS 490-103111/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 490-103111/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 103307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93498-1	PZ02-04 (082113)	Total/NA	Water	8015C	103111
680-93498-4	SB02-07 (0.5-1.5)	Total/NA	Solid	8015C	102687
680-93498-5	SB02-07 (5.5-6.5)	Total/NA	Solid	8015C	102687
680-93498-5 MS	SB02-07 (5.5-6.5)	Total/NA	Solid	8015C	102687
680-93498-5 MSD	SB02-07 (5.5-6.5)	Total/NA	Solid	8015C	102687
680-93498-6	SB02-08 (0.5-1.5)	Total/NA	Solid	8015C	102687
680-93498-7	SB02-08 (7.0-8.0)	Total/NA	Solid	8015C	102687
680-93498-8	SB02-09 (0.5-1.5)	Total/NA	Solid	8015C	102687
680-93498-9	SB02-09 (4.5-5.5)	Total/NA	Solid	8015C	102687
680-93498-10	SB02-10 (0.5-1.5)	Total/NA	Solid	8015C	102687
680-93498-11	SB02-10 (5.0-6.0)	Total/NA	Solid	8015C	102687
680-93498-12	SB03-01 (0.5-1.5)	Total/NA	Solid	8015C	102687
680-93498-13	SB03-01 (5.0-6.0)	Total/NA	Solid	8015C	102687
680-93498-14	SB03-02 (0.0-1.0)	Total/NA	Solid	8015C	102687
680-93498-15	SB03-02 (3.0-4.0)	Total/NA	Solid	8015C	102687
680-93498-16	SB03-03 (0.5-1.5)	Total/NA	Solid	8015C	102687
680-93498-17	SB03-03 (3.0-4.0)	Total/NA	Solid	8015C	102687
680-93498-18	SB03-04 (0.5-1.5)	Total/NA	Solid	8015C	102687
680-93498-19	SB03-04 (4.0-5.0)	Total/NA	Solid	8015C	102687
680-93498-20	PZ02-04 (082113) (DRO-SGT)	Total/NA	Water	8015C	103111
LCS 490-102687/2-A	Lab Control Sample	Total/NA	Solid	8015C	102687
LCS 490-103111/2-A	Lab Control Sample	Total/NA	Water	8015C	103111
MB 490-102687/1-A	Method Blank	Total/NA	Solid	8015C	102687
MB 490-103111/1-A	Method Blank	Total/NA	Water	8015C	103111

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: PZ02-04 (082113)

Lab Sample ID: 680-93498-1

Date Collected: 08/21/13 09:35

Matrix: Water

Date Received: 08/22/13 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190083	08/29/13 00:33	WPD	TAL PEN
Total/NA	Prep	3520C			290552	08/23/13 15:49	RBS	TAL SAV
Total/NA	Analysis	8270D		1	290916	08/26/13 19:50	SMC	TAL SAV
Total/NA	Analysis	8015C		1	291184	08/28/13 12:08	AJMC	TAL SAV
Total/NA	Prep	3510C			103111	08/28/13 07:23	CLH	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/28/13 17:40	JML	TAL NSH

Client Sample ID: TB01 (0802113)

Lab Sample ID: 680-93498-3

Date Collected: 08/21/13 00:00

Matrix: Water

Date Received: 08/22/13 09:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190083	08/29/13 01:24	WPD	TAL PEN

Client Sample ID: SB02-07 (0.5-1.5)

Lab Sample ID: 680-93498-4

Date Collected: 08/21/13 08:50

Matrix: Solid

Date Received: 08/22/13 09:39

Percent Solids: 52.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	189997	08/28/13 13:11	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 11:35	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 16:26	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 00:17	JML	TAL NSH

Client Sample ID: SB02-07 (5.5-6.5)

Lab Sample ID: 680-93498-5

Date Collected: 08/21/13 09:00

Matrix: Solid

Date Received: 08/22/13 09:39

Percent Solids: 82.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	189997	08/28/13 13:34	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 11:59	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 16:46	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 00:01	JML	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-08 (0.5-1.5)

Lab Sample ID: 680-93498-6

Date Collected: 08/21/13 09:10
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 72.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	189997	08/28/13 14:00	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 12:23	SMC	TAL SAV
Total/NA	Prep	3546	RE		292846	09/09/13 19:28	JCS	TAL SAV
Total/NA	Analysis	8270D	RE	1	293167	09/11/13 15:52	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 17:06	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 00:33	JML	TAL NSH

Client Sample ID: SB02-08 (7.0-8.0)

Lab Sample ID: 680-93498-7

Date Collected: 08/21/13 09:20
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	189997	08/28/13 14:23	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 12:48	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 17:26	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 00:49	JML	TAL NSH

Client Sample ID: SB02-09 (0.5-1.5)

Lab Sample ID: 680-93498-8

Date Collected: 08/21/13 10:00
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 52.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	189997	08/28/13 14:46	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 13:12	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 17:46	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 01:04	JML	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB02-09 (4.5-5.5)

Lab Sample ID: 680-93498-9

Date Collected: 08/21/13 10:10
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	189997	08/28/13 15:09	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 13:37	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 18:06	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 01:20	JML	TAL NSH

Client Sample ID: SB02-10 (0.5-1.5)

Lab Sample ID: 680-93498-10

Date Collected: 08/21/13 10:20
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 57.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 08:56	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 14:01	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290531	08/23/13 18:25	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 01:36	JML	TAL NSH

Client Sample ID: SB02-10 (5.0-6.0)

Lab Sample ID: 680-93498-11

Date Collected: 08/21/13 10:30
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 09:21	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291788	09/01/13 02:58	SMP	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 14:39	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 01:51	JML	TAL NSH

Client Sample ID: SB03-01 (0.5-1.5)

Lab Sample ID: 680-93498-12

Date Collected: 08/21/13 12:30
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 74.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN

Client Sample ID: SB03-01 (0.5-1.5)

Lab Sample ID: 680-93498-12

Date Collected: 08/21/13 12:30
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 74.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190126	08/29/13 09:43	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 15:01	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 17:20	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 02:07	JML	TAL NSH

Client Sample ID: SB03-01 (5.0-6.0)

Lab Sample ID: 680-93498-13

Date Collected: 08/21/13 12:40
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 80.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 10:08	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 15:26	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 14:33	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 15:18	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 02:23	JML	TAL NSH

Client Sample ID: SB03-02 (0.0-1.0)

Lab Sample ID: 680-93498-14

Date Collected: 08/21/13 12:50
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 67.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 10:32	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 15:50	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 15:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 15:38	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 02:38	JML	TAL NSH

Client Sample ID: SB03-02 (3.0-4.0)

Lab Sample ID: 680-93498-15

Date Collected: 08/21/13 13:00
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 76.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 10:56	WPD	TAL PEN

Client Sample ID: SB03-02 (3.0-4.0)

Lab Sample ID: 680-93498-15

Date Collected: 08/21/13 13:00
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 76.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 16:15	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 15:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 18:00	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 02:54	JML	TAL NSH

Client Sample ID: SB03-03 (0.5-1.5)

Lab Sample ID: 680-93498-16

Date Collected: 08/21/13 13:20
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 68.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 13:27	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 16:39	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 15:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 16:18	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 03:10	JML	TAL NSH

Client Sample ID: SB03-03 (3.0-4.0)

Lab Sample ID: 680-93498-17

Date Collected: 08/21/13 13:30
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 11:21	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 17:04	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 15:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 18:20	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 03:25	JML	TAL NSH

Client Sample ID: SB03-04 (0.5-1.5)

Lab Sample ID: 680-93498-18

Date Collected: 08/21/13 13:50
Matrix: Solid
Date Received: 08/22/13 09:39
Percent Solids: 53.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 11:47	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Client Sample ID: SB03-04 (0.5-1.5)

Lab Sample ID: 680-93498-18

Date Collected: 08/21/13 13:50
Date Received: 08/22/13 09:39

Matrix: Solid
Percent Solids: 53.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	291613	08/30/13 17:29	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 15:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 16:58	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 03:41	JML	TAL NSH

Client Sample ID: SB03-04 (4.0-5.0)

Lab Sample ID: 680-93498-19

Date Collected: 08/21/13 14:00
Date Received: 08/22/13 09:39

Matrix: Solid
Percent Solids: 80.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189784	08/26/13 09:52	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190126	08/29/13 12:13	WPD	TAL PEN
Total/NA	Prep	3546			290873	08/26/13 21:27	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291613	08/30/13 17:53	SMC	TAL SAV
Total/NA	Prep	5035			290431	08/22/13 15:07	FES	TAL SAV
Total/NA	Analysis	8015C		1	290726	08/24/13 17:17	AJMC	TAL SAV
Total/NA	Prep	3550C			102687	08/26/13 14:47	AJK	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/29/13 03:57	JML	TAL NSH

Client Sample ID: PZ02-04 (082113) (DRO-SGT)

Lab Sample ID: 680-93498-20

Date Collected: 08/21/13 09:35
Date Received: 08/22/13 09:39

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			103111	08/28/13 07:23	CLH	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/28/13 17:56	JML	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CSX TRANSPORTATION

CHAIN OF CUSTODY

COC # 130821-1

LABORATORY INFORMATION

- [X] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method: FED EX

Shipment Tracking No:

CSXT PROJECT INFORMATION

Proj. State (State of Origin): MD

CSXT Project Number: 9415381

Proj. City: BRUNSWICK

CSXT Project Name: C&O CANAL / BRUNSWICK RAIL YARD

CSXT Contact: PAUL KURZANSKI

LWON: ENV33683

CONSULTANT INFORMATION

Company: ARCADIS

Address: 1114 BENFIELD BLVD

City, State, Zip: MILLERSVILLE, MD 21108

Project #: MD000843.0011.0004

PM: MEGAN KELLNER

Email: MEGAN.KELLNER@ARCADIS-US.COM

Phone: (410) 987-0032

Fax: (410) 987-4342

Turnaround Time:

- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days
- Specify # Days ____
- [X] Standard 14 Days
- [ ] Other ____

Deliverables:

- [X] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv: ____
- [ ] EDD Required, Format:

Preservative Codes:

0 = No Preservatives
1 = Hydrochloric Acid
2 = Nitric Acid
3 = Sulfuric Acid
4 = Sodium Thiosulfate
5 = Sodium Hydroxide
6 = Other TERRA CORE

Matrix Codes:

GW = Groundwater
WW = Waste Water
SW = Surface Water
SO = Soil
SL = Sludge
OI = Oil
SOL = Other Solid
LIQ = Liquid

Note ➡ Pres. Code: 1 | 6

METHODS FOR ANALYSIS

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	8270D SVOCs	8015C GRO						COMMENTS	LAB USE
DZ02-04 (082113)	2x AMBER 3x 40mL VOA	8-21-13	0935	LL	N	Grab	GW	X	X							
~~PZ03-08 (082113)~~	~~2x AMBER 3x 40mL VOA~~		~~1400~~				~~GW~~	~~X~~	~~X~~	JMJ						
SB02-07 (1.0-1.5)	1x TERRACORE		0850				SO	~~X~~	X	JMJ					~~ONLY SVOCS~~ ONLY GRO	
SB02-07 (5.5-6.0)	1xTC		0900				SO	~~X~~	X	JMJ					ONLY GRO	
SB02-08 (1.0-1.5)	1xTC		0910					~~X~~	X	JMJ					JMJ	
SB02-08 (7.0-7.5)			0920					~~X~~	X	JMJ						
SB02-09 (1.0-1.5)			1000					~~X~~	X	JMJ						
SB02-09 (4.5-5.0)			1010					~~X~~	X	JMJ						
SB02-10 (1.0-1.5)			1020					~~X~~	X	JMJ						
SB02-10 (5.0-5.5)	1xTC	8-21-13	1030	LL	N	Grab	SO	~~X~~	X	JMJ					ONLY GRO	

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	8-21-13 / 1900		
Relinquished By:	Date/Time:	Received By:	
Relinquished By:	Date/Time:	Received By:	
Received By Laboratory: [signature]	Date/Time: 08/22/13 0939	Lab Remarks:	

680-93498 Chain of Custody

Yes ☐ No ☐

Comments & Special Analytical Requirements:

680-93498
2.6/2.6/2.8°C

Custody Seal #: #

LAB Log Number: #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

PAGE 1 of 3 SA!

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#: 130821-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #

Send Results to:
Contact & Company Name:
Address: SEE PG 1
City / State / Zip
Telephone:
Fax:
E-mail Address:
Project Name/Location (City, State):
Project #:
Sampler's Printed Name:
Sampler's Signature:

	8015C-GRO	8270DSVOC
Preservative	TERRACORE	NONE
Filtered (✓)	—	—
# of Containers	1xTC	1 4oz SOIL JAR
Container Information	TERRACORE	SOIL JAR

Keys
Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: ____ G. Other: ____ H. Other: ____
Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: ____ 10. Other: ____
Matrix Key: SO - Soil, W - Water, T - Tissue, SE - Sediment, SL - Sludge, A - Air, NL - NAPL/Oil, SW - Sample Wipe, Other: ____

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Comp	Grab	Matrix	8015C-GRO	8270DSVOC						REMARKS
SB03-01 (1.0-1.5)	8/21/13	1230		✓	GW	X							
SB03-01 (5.5-6.0)	↓	1240		✓	↓	X							
SB03-02 (0.5-1.0)	↓	1250		✓	↓	X							
SB03-02 (3.0-3.5)	↓	1300		✓	↓	X							
SB03-03 (1.0-1.5)	↓	1326		✓	↓	X							
SB03-03 (3.5-4.0)	↓	1330		✓	↓	X							
SB03-04 (0.5-1.0)	↓	1350		✓	↓	X							
SB03-04 (4.0-4.5)	8/21/13	1400		✓	↓	X							
SB02-07 (0.5-1.5)	↓	0850		✓	GW		X						
SB02-07 (5.5-6.5)	↓	0900		✓	↓		X						
SB02-08 (0.5-1.5)	↓	0910		✓	↓		X						
SB02-08 (7.0-8.0)	↓	0920		✓	↓		X						
SB02-09 (0.5-1.5)	↓	1000		✓	↓		X						
SB02-09 (4.5-5.5)	8/21/13	1010		✓	GW		X						

Special Instructions/Comments:
CSXT PROJECT #//9415381 LWON//ENV33683 680-93798

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt
Lab Name: TEST AMERICA SAVANNAH
☒ Cooler packed with ice (✓)
Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact
Specify Turnaround Requirements: 14 DAYS
Shipping Tracking #:
Sample Receipt:
Condition/Cooler Temp: ____

	Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name:	LAUREN LAMP	KEATON GONGER		
Signature:	[signature]	[signature]		
Firm/Courier:	ARCADIS	TA 08/22/13 0934		
Date/Time:	8-21-13/1900	TA SAV		

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

9/13/2013

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Infrastructure · Water · Environment · Buildings

ID#: 130821-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #:

Send Results to:

Contact & Company Name: | Telephone:

Address: SEE PG 1 | Fax:

City | State | Zip | E-mail Address:

Project Name/Location (City, State): | Project #:

Sampler's Printed Name: | Sampler's Signature:

Preservative	TREACLE	NONE					
Filtered (✓)	—	—					
# of Containers	1	1					
Container Information	TREACLE	4oz SOIL JAR					

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil | SE - Sediment | NL - NAPL/Oil
W - Water | SL - Sludge | SW - Sample Wipe
T - Tissue | A - Air | Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270 D-SIMS	REMARKS
SB02-10 (0.5-1.5)	8/21/13	1020		✓	GW	X	
SB02-10 (5.0-6.0)		1030		✓		X	
SB03-01 (0.5-1.5)		1230		✓		X	
SB03-01 (5.0-6.0)		1240		✓		X	
SB03-02 (0.0-1.0)		1250		✓		X	
SB03-02 (3.0-4.0)		1300		✓		X	
SB03-03 (0.5-1.5)		1320		✓		X	
SB03-03 (3.0-4.0)		1330		✓		X	
SB03-04 (0.5-1.5)		1350		✓		X	
SB03-04 (4.0-5.0)	8/21/13	1400		✓	GW	X	

Special Instructions/Comments:
CSXT PROJECT #/ 9415381 LWON/ ENV 33683

☐ Special QA/QC Instructions(✓):

680-93198

Laboratory Information and Receipt

Lab Name: TEST AMERICA SAVANNAH
☐ Cooler packed with ice (✓)
Specify Turnaround Requirements: CSXT STANDARD 14 DAYS
Shipping Tracking #:

Cooler Custody Seal (✓): ☐ Intact ☐ Not Intact
Sample Receipt:
Condition/Cooler Temp: _____

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: LAUREN LAMP	Printed Name: KEATON GARNER	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: ARCADIS	Firm/Courier: FedEx	Firm/Courier:	Firm:
Date/Time: 8-21-13/1900	Date/Time: 8/22/13 0939	Date/Time:	Date/Time:

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Infrastructure · Water · Environment · Buildings

ID#: 130821-3

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order #:

Send Results to:

Contact & Company Name: MEGAN KELLNER ARCADIS
Telephone: 410.987.0032
Address: 1114 BENFIELD BLVD
Fax: 410.907.4342
City: MILLERSVILLE State: Zip:
E-mail Address: megan.kellner@arcadis-us.com
Project Name/Location (City, State): CTO CANAL | BRUNSWICK RAIL YARD MD
Project #: MD000843.0011.00034
Sampler's Printed Name: LAUREN LAMP
Sampler's Signature: [signature]

	8015B DRO	8015 C DRO -SGT	8015C DRO
Preservative	B	B	E
Filtered (✓)			
# of Containers	2	2	1
Container Information	2	2	7

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type Comp	Type Grab	Matrix	8015B DRO	8015 C DRO -SGT	8015C DRO	REMARKS
PZ02-04 (082113)	8-21-13	0935		X	GW	X	X		
SB02-07 (0.5-1.5)		0850		X	SO			X	
SB02-07 (5.5-6.5)		0900		X				X	
SB02-08 (0.5-5.5)		0910		X				X	
SB02-08 (7.0-8.0)		0920		X				X	
SB02-09 (0.5-1.5)		1000		X				X	
SB02-09 (4.5-5.5)		1010		X				X	
SB02-10 (0.5-1.5)		1020		X				X	
SB02-10 (5.0-6.0)		1030		X				X	
SB03-01 (0.5-1.5)		1230		X				X	
SB03-01 (5.0-6.0)		1240		X				X	
SB03-02 (0.0-1.0)		1250		X				X	
SB03-02 (3.0-4.0)		1300		X				X	
SB03-03 (0.5-1.5)	8/21/13	1320		X				X	

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: G. Other: H. Other:

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 10. Other:

Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other:

Special Instructions/Comments: CSXT PO// 94 15381 CSXT PROJECT NAME // CTO CANAL / BRUNSWICK RAIL YARD CSXT CONTACT - PAUL KURZANSKI LWON // ENV 33683

Special QA/QC Instructions(✓): CSXT STANDARD (LEVEL II) 680-93498

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: TEST AMERICA NASHVILLE	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: LAUREN LAMP	Printed Name: [signature]	Printed Name:	Printed Name:
☑ Cooler packed with ice (✓)		Signature: [signature]	Signature: [signature] 1.2°C	Signature:	Signature:
Specify Turnaround Requirements: 14 DAYS - STANDARD	Sample Receipt:	Firm: ARCADIS	Firm/Courier: TAN	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 8-21-13 / 1900	Date/Time: 8/22/13 0820	Date/Time:	Date/Time:

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ID#: 130821-3

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #:

Send Results to:
Contact & Company Name: SEE Pg 1
Telephone:
Address:
Fax:
City State Zip
E-mail Address:

Project Name/Location (City, State):
Project #:
Sampler's Printed Name:
Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp.	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	8015C-GRO	REMARKS
SB03-03(3.0-4.0)	8/21/13	1330		X	SO	E		1	7	X	
SB03-04(0.5-1.5)	"	1350		X	SO					X	
SB03-04(4.0-5.0)	~~"~~	1400		X	SO					X	

Keys
Preservation Key: A. H2SO4; B. HCl; C. HNO3; D. NaOH; E. None; F. Other:; G. Other:; H. Other:
Container Information Key: 1. 40 mL Vial; 2. 1 L Amber; 3. 250 ml Plastic; 4. 500 ml Plastic; 5. Encore; 6. 2 oz. Glass; 7. 4 oz. Glass; 8. 8 oz. Glass; 9. Other:; 10. Other:
Matrix Key: SO - Soil; W - Water; T - Tissue; SE - Sediment; SL - Sludge; A - Air; NL - NAPL/Oil; SW - Sample Wipe; Other:

Special Instructions/Comments: SEE PAGE 1

☐ Special QA/QC Instructions(✓):

680-93498

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: TEST AMERICA NASHVILLE	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: LAUREN LAMP	Printed Name:	Printed Name:	Printed Name:
☑ Cooler packed with ice (✓)		Signature:	Signature: 1.2°C	Signature:	Signature:
Specify Turnaround Requirements: 14 DAYS - CSXT STANDARD	Sample Receipt Condition/Cooler Temp:	Firm: ARCADIS	Firm/Courier: FAN	Firm/Courier:	Firm:
Shipping Tracking #:		Date/Time: 8-21-13 / 1900	Date/Time: 8/22/13 0820	Date/Time:	Date/Time:

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NASH

9/13/2013

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130821-2

LABORATORY INFORMATION

- ☐ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- ☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- ☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- ☒ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- ☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- ☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

CSXT PROJECT INFORMATION

CSXT Project Number: 9415381

Proj. State (State of Origin): MD

Proj. City: BRUNSWICK

CSXT Project Name: C&O CANAL/BRUNSWICK RAIL YARD

CSXT Contact: PAUL KURZANSKI

LWON: ENW33683

CONSULTANT INFORMATION

Company: ARCADIS

Address: 1114 BENFIELD BLVD.

City, State, Zip: MILLERSVILLE, MD 21108

Project #: MD000843.0011.0004

PM: Megan Kellner

Email: megan.kellner@arcadis-us.com

Phone: (410) 987-0032 Fax: (410) 907-4342

Turnaround Time:

- ☐ 1 Day Rush
- ☐ 2 Day Rush
- ☐ 3 Day Rush
- ☐ Standard 6-13 Days
- Specify # Days ____
- ☒ Standard 14 Days
- ☐ Other ____

Deliverables:

- ☒ CSXT Standard (Level II)
- ☐ Level III
- ☐ Level IV
- ☐ Other Deliv: ____
- ☐ EDD Required, Format: ____

Preservative Codes:

0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other TERRACORE

Note ➡ 1 | Pres. Code: 6

Matrix Codes:

GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	METHODS FOR ANALYSIS: 8260B Full VOCs	8260B MOD Oxygenates (Low Level)	COMMENTS	LAB USE
PZ02-04 (052113)	2x 40ml VOA	8-21-13	0935	JR	N	Grab	GW	X			
~~PZ02-05 (052113)~~	~~2x 40ml VOA~~		~~1400~~	~~JR~~	~~N~~	~~Grab~~	~~GW~~	~~X~~			
TB01 (052113)	–	↓	–	–	↓	↓	SOIL	X	X		
SB02-07 (1.0-1.5)	1xTERRACORE	8-21-13	0850				SO		X		
SB02-07 (5.5-6.0)	1xTERRACORE		0900				SO		X		
SB02-08 (1.0-1.5)	1xTC		0910						X		
SB02-08 (7.0-7.5)	1xTC		0926						X		
SB02-09 (1.0-1.5)	1xTC		1000						X		
SB02-09 (4.5-5.0)	1xTC	↓	1010		↓	↓	↓		X		
SB02-10 (1.0-1.5)	1xTC	8-21-13	1020		N	Grab	SO		X		

	Date/Time:	Received By:	Date/Time:
Relinquished By:	8-21-13 1900		8/22/13 0933
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory:	Date/Time:	Lab Remarks:	

Comments & Special Analytical Requirements:

680-93498

LAB USE: ☐ Yes ☐ No Custody Intact | Custody Seal # | LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

PAGE 1 OF 2

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ID#: 130821-2

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: | Telephone:

Address: | Fax:

City | State | Zip | E-mail Address:

Project Name/Location (City, State): | Project #:

Sampler's Printed Name: | Sampler's Signature:

SEE PG 1

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (Y/N)	# of Containers	Container Information	8260B-Full VOCs	REMARKS
SB02-10 (5.0-5.5)	8/21/13	1030		✓	SO	F		1	9	X	
SB03-01 (1.0-1.5)		1230		✓						X	
SB03-01 (5.5-6.0)		1240		✓						X	
SB03-02 (0.5-1.0)		1250		✓						X	
SB03-02 (3.0-3.5)		1300		✓						X	
SB03-03 (1.0-1.5)		1320		✓						X	
SB03-03 (3.5-4.0)		1330		✓						X	
SB03-04 (0.5-1.0)		1350		✓						X	
SB03-04 (4.0-4.5)	8/21/13	1400		✓	SO					X	

Keys

Preservation Key: A: H2SO4 B: HCL C: HNO3 D: NaOH E: None F: Other: TERRACORE G: Other: H: Other:

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: TERRACORE 10. Other:

Matrix Key: SO - Soil SE - Sediment NL - NAPL/Oil W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other:

Special Instructions/Comments:

CSAT PN// 9415381 LWON// ENV33683

☐ Special QA/QC Instructions(✓):

680-93498

Laboratory Information and Receipt

Lab Name: TEST AMERICA PENSACOLA

☒ Cooler packed with ice (✓)

Specify Turnaround Requirements: STANDARD 14 DAYS

Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Sample Receipt

Condition/Cooler Temp:

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: LAUREN LAMP	Printed Name:	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: ARCADIS	Firm/Courier: TA Pensacola	Firm/Courier:	Firm:
Date/Time: 8-21-13 / 1900	Date/Time: 8/22/13 0933	Date/Time:	Date/Time:

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DON

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93498-1

Login Number: 93498

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	Sample -2 was received for GRO, scratched from COC.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	TB received in Savannah
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93498-1

Login Number: 93498
List Number: 1
Creator: Buckingham, Paul

List Source: TestAmerica Nashville
List Creation: 08/23/13 02:07 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93498-1

Login Number: 93498
List Number: 1
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/22/13 03:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8°C IR2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93498-1

Login Number: 93498
List Number: 2
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/22/13 03:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8°C IR2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	07-31-14
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14 *
California	NELAP	9	3217CA	07-31-14 *
Colorado	State Program	8	N/A	12-31-13
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-13 *
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14
South Carolina	State Program	4	98001	06-30-13 *
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13
West Virginia DEP	State Program	3	94	09-30-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Laboratory: TestAmerica Nashville (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
AIHA	IHLAP		100790	09-01-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-15
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-13
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14
Arizona	State Program	9	AZ0710	01-11-14
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-14

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93498-1

Laboratory: TestAmerica Pensacola (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200041	10-09-13
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-13
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-13 *
Michigan	State Program	5	9912	06-30-13 *
New Jersey	NELAP	2	FL006	06-30-13 *
North Carolina DENR	State Program	4	314	12-31-13
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-14
Rhode Island	State Program	1	LAO00307	12-31-13
South Carolina	State Program	4	96026	06-30-13 *
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-93550-1
Client Project/Site: CSX C&O Canal Brunswick, MD

For:
ARCADIS U.S., Inc.
1114 Benfield Blvd.
Suite A
Millersville, Maryland 21108

Attn: Ms. Megan Kellner

Authorized for release by:
9/9/2013 4:11:12 PM

Lisa Harvey, Project Manager II
lisa.harvey@testamericainc.com

Job ID: 680-93550-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX C&O Canal Brunswick, MD
Report Number: 680-93550-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 8/23/2013 9:28 AM and 8/24/2013 8:38 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.6º C, 2.8º C and 4.0º C.

The footage on the COC for the VOCs and GRO is a shorter range than what was indicated for the SVOCs and DRO. For consitency in reporting moisture values, the specific soil boring was logged in for all tests based on the sample ID and date/time sampled, and were subsequently logged in so as to report at the largest of the depth range.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SB03-06 (0.0-1.0) (680-93550-1), SB03-06 (2.5-3.5) (680-93550-2), SB03-07 (1.5-2.5) (680-93550-3), SB03-07 (4.5-5.5) (680-93550-4), SB03-08 (1.0-2.0) (680-93550-5), SB03-08 (3.0-4.0) (680-93550-6), SB03-09 (1.0-2.0) (680-93550-7), SB03-09 (3.5-4.5) (680-93550-8), SB03-10 (0.5-1.5) (680-93550-9), SB03-10 (5.5-6.5) (680-93550-10), SB03-05 (0.0-1.0) (680-93550-11) and SB03-05 (3.5-4.5) (680-93550-12) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Surrogate recovery for the following sample was outside control limits: SB03-05 (3.5-4.5) (680-93550-12). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The following sample are underweight: 93550-1E (H2O) and 93550-5C (MeOH). See batch 680-290836.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples PZ02-08 (680-93550-13), PZ03-04 (680-93550-14), PZ03-08 (680-93550-15) and TB01 (082213) (680-93550-16) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS

Samples SB03-06 (0.0-1.0) (680-93550-1), SB03-06 (2.5-3.5) (680-93550-2), SB03-07 (1.5-2.5) (680-93550-3), SB03-07 (4.5-5.5) (680-93550-4), SB03-08 (1.0-2.0) (680-93550-5), SB03-08 (3.0-4.0) (680-93550-6), SB03-09 (1.0-2.0) (680-93550-7), SB03-09 (3.5-4.5) (680-93550-8), SB03-10 (0.5-1.5) (680-93550-9), SB03-10 (5.5-6.5) (680-93550-10), SB03-05 (0.0-1.0) (680-93550-11) and SB03-05 (3.5-4.5) (680-93550-12) were analyzed for Semivolatile Organic Compounds (Solid) in accordance with EPA SW-846 Method 8270D.

Samples PZ03-04 (680-93588-1), PZ02-08 (680-93550-13) and PZ03-08 (680-93550-15) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

The following sample(s) contained one acid and/or one base surrogate outside acceptance limits: SB03-06 (0.0-1.0) (680-93550-1). The laboratory's SOP allows one acid surrogate and/or one base surrogate to be outside acceptance limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Job ID: 680-93550-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Method(s) 8270D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and/or precision for sample PZ03-08MS (680-93550-15) were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 8270D: The following analytes have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Famphur, 1,4-Napthaquinone, Methane sulfonate, Benzaldehyde, 1-naphthylamine, 2-naphthylamine, p-Dimethylamino azobenzene, p-phenylenediamine, a,a-dimethylphenethylamine, Methapyriline, 2-picoline (2-methylpyridine), 3,3'-dimethylbenzidine, 3,3'-dichlorobenzidine, Benzidine, Benzaldehyde, Benzoic acid, Dinoseb, Hexachlorophene, Hexachlorocyclopentadiene, o,o,o-triethylphosphoro-thioate. These analytes may have a %D >60% if the average %D of all the analytes in the continuing calibration verification (CCV) is 30%, all the analytes in the initial calibration verification (ICV) is 30%.

Method(s) 8270D: The initial calibration curve analyzed in batch 290879 was outside method criteria for the following analyte(s): benzaldehyde, benzidine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

Method(s) 8270D: The initial calibration curve analyzed in batch 291781 was outside method criteria for the following analyte(s): benzoic acid. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered an estimated concentration.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 291044 was outside the method criteria for the following analyte(s): indeno (1,2,3-cd) pyrene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 291919 was outside the method criteria for the following analyte(s): 1,4 Dioxane, 2,3,4,6 Tetrachlorophenol, 2,4 Dinitrophenol, 2,4 Dinitrotoluene, 4,6-Dintro-2-methylphenol, 4 Nitroaniline, Caprolactum, Fluoranthene, N-Nitrosodimethylamine, and Pyridine. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 292070 was outside the method criteria for the following analyte(s): 1,3 Dinitrobenzene, 1,4 Dioxane, 2,3,4,6 Tetrachlorophenol, 2,4,6 Tribromophenol, 2,4 Dinitrophenol, 2,4, Dintrotoluene, 4 Nitroaniline, 4 Nitrophenol, Caprolactum, N-Nitrosodimethylamine, and Pyridine. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

GASOLINE RANGE ORGANICS (GRO)

Samples SB03-06 (0.0-1.0) (680-93550-1), SB03-06 (2.5-3.5) (680-93550-2), SB03-07 (1.5-2.5) (680-93550-3), SB03-07 (4.5-5.5) (680-93550-4), SB03-08 (1.0-2.0) (680-93550-5), SB03-08 (3.0-4.0) (680-93550-6), SB03-09 (1.0-2.0) (680-93550-7), SB03-09 (3.5-4.5) (680-93550-8), SB03-10 (0.5-1.5) (680-93550-9), SB03-10 (5.5-6.5) (680-93550-10), SB03-05 (0.0-1.0) (680-93550-11) and SB03-05 (3.5-4.5) (680-93550-12) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015B.

Samples PZ02-08 (680-93550-13), PZ03-04 (680-93550-14) and PZ03-08 (680-93550-15) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015C. The samples were analyzed on 08/28/2013.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Internal standard (ISTD) response for the following samples was outside of acceptance limits: SB03-06 (0.0-1.0) (680-93550-1). Similar recoveries were found throughout the project, and appear a site-related issue.

Surrogate recovery for the following sample was outside control limits: SB03-05 (3.5-4.5) (680-93550-12). Re-analysis was performed with concurring results. The original analysis has been reported.

Surrogate recovery for the following samples were outside control limits: SB03-06 (0.0-1.0) (680-93550-1). Evidence of matrix interference is present; therefore re-analysis was not performed.

Job ID: 680-93550-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Surrogate recovery for the following sample was outside control limits: SB03-07 (1.5-2.5) (680-93550-3). Evidence of matrix interference is present throughout the project; therefore, re-analysis was not performed. Data have been reported.

The method blank for batch 291184 contained C6-C10 the method detection limit (MDL). This target analyte concentration was less than one-half the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Internal standard responses were outside of acceptance limits for the following sample: SB03-08 (1.0-2.0) (680-93550-5). The project shows evidence of matrix interference. This sample was reanalyzed confirming the internal standard reponse outside acceptance limites; data have been reported.

DIESEL RANGE ORGANICS (DRO)

Samples SB03-06 (0.0-1.0) (680-93550-1), SB03-06 (2.5-3.5) (680-93550-2), SB03-07 (1.5-2.5) (680-93550-3), SB03-07 (4.5-5.5) (680-93550-4), SB03-08 (1.0-2.0) (680-93550-5), SB03-08 (3.0-4.0) (680-93550-6), SB03-09 (1.0-2.0) (680-93550-7), SB03-09 (3.5-4.5) (680-93550-8), SB03-10 (0.5-1.5) (680-93550-9), SB03-10 (5.5-6.5) (680-93550-10), SB03-05 (0.0-1.0) (680-93550-11) and SB03-05 (3.5-4.5) (680-93550-12) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Samples PZ03-04 (680-93588-1), PZ03-04 (DRO-SGT) (680-93588-2), PZ02-08 (680-93550-13), PZ03-08 (680-93550-15), PZ02-08 (DRO-SGT) (680-93550-17) and PZ03-08 (DRO-SGT) (680-93550-19) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Method(s) 8015C: Surrogate recovery for the following sample(s) was outside control limits: PZ03-08 (680-93550-15), PZ03-08 (DRO-SGT) (680-93550-19). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8015C: Due to the level of dilution required for the following sample(s), surrogate recoveries are not accurate: PZ03-04 (680-93588-1), PZ03-04 (DRO-SGT) (680-93588-2).

Method(s) 8015C: The method blank for batch 103111 and 103148 contained C10-C28 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8015C: The method blank for batch 104903 contained C24-C40 above the method detection limit. This target analyte concentration was less than half the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-93550-1	SB03-06 (0.0-1.0)	Solid	08/22/13 08:45	08/23/13 09:28
680-93550-2	SB03-06 (2.5-3.5)	Solid	08/22/13 08:55	08/23/13 09:28
680-93550-3	SB03-07 (1.5-2.5)	Solid	08/22/13 10:00	08/23/13 09:28
680-93550-4	SB03-07 (4.5-5.5)	Solid	08/22/13 10:10	08/23/13 09:28
680-93550-5	SB03-08 (1.0-2.0)	Solid	08/22/13 10:30	08/23/13 09:28
680-93550-6	SB03-08 (3.0-4.0)	Solid	08/22/13 10:40	08/23/13 09:28
680-93550-7	SB03-09 (1.0-2.0)	Solid	08/22/13 10:50	08/23/13 09:28
680-93550-8	SB03-09 (3.5-4.5)	Solid	08/22/13 11:00	08/23/13 09:28
680-93550-9	SB03-10 (0.5-1.5)	Solid	08/22/13 11:30	08/23/13 09:28
680-93550-10	SB03-10 (5.5-6.5)	Solid	08/22/13 11:40	08/23/13 09:28
680-93550-11	SB03-05 (0.0-1.0)	Solid	08/22/13 09:15	08/23/13 09:28
680-93550-12	SB03-05 (3.5-4.5)	Solid	08/22/13 09:25	08/23/13 09:28
680-93550-13	PZ02-08	Water	08/22/13 14:00	08/23/13 09:28
680-93550-14	PZ03-04	Water	08/22/13 12:30	08/23/13 09:28
680-93550-15	PZ03-08	Water	08/22/13 13:08	08/23/13 09:28
680-93550-16	TB01 (082213)	Water	08/22/13 00:00	08/23/13 09:28
680-93550-17	PZ02-08 (DRO-SGT)	Water	08/22/13 14:00	08/23/13 09:28
680-93550-19	PZ03-08 (DRO-SGT)	Water	08/22/13 13:08	08/23/13 09:28
680-93588-1	PZ03-04	Water	08/22/13 12:30	08/24/13 08:38
680-93588-2	PZ03-04 (DRO-SGT)	Water	08/22/13 12:30	08/24/13 08:38

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
F	MS/MSD Recovery and/or RPD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-06 (0.0-1.0)
Date Collected: 08/22/13 08:45
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-1
Matrix: Solid
Percent Solids: 65.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	62	U	62	18	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Benzene	12	U	12	1.2	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Bromodichloromethane	12	U	12	2.1	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Bromoform	12	U	12	1.6	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Bromomethane	12	U	12	3.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Carbon disulfide	12	U	12	3.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Carbon tetrachloride	12	U	12	4.2	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Chlorobenzene	12	U	12	1.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Chloroethane	12	U	12	4.7	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Chloroform	12	U	12	1.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Chloromethane	12	U	12	2.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
cis-1,2-Dichloroethene	12	U	12	1.9	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
cis-1,3-Dichloropropene	12	U	12	3.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Cyclohexane	12	U	12	2.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Dibromochloromethane	12	U	12	2.1	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,2-Dibromo-3-Chloropropane	12	U	12	8.1	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,2-Dichlorobenzene	**13**		12	1.7	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,3-Dichlorobenzene	**3.7**	**J**	12	2.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,4-Dichlorobenzene	12	U	12	2.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Dichlorodifluoromethane	12	U	12	3.2	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,1-Dichloroethane	12	U	12	2.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,2-Dichloroethane	12	U	12	2.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,1-Dichloroethene	12	U	12	1.8	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,2-Dichloropropane	12	U	12	1.8	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Diisopropyl ether	12	U	12	1.4	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Ethylbenzene	**2.0**	**J**	12	1.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Ethylene Dibromide	12	U	12	1.2	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Ethyl tert-butyl ether	12	U	12	1.4	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
2-Hexanone	62	U	62	12	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Isopropylbenzene	12	U	12	1.7	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Methyl acetate	12	U	12	11	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Methylcyclohexane	**2.2**	**J**	12	2.1	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Methylene Chloride	37	U	37	25	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Methyl Ethyl Ketone	62	U	62	10	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
methyl isobutyl ketone	62	U	62	9.9	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Methyl tert-butyl ether	12	U	12	2.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Naphthalene	12	U	12	2.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Styrene	12	U	12	1.9	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Tert-amyl methyl ether	12	U	12	1.1	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
tert-Butyl alcohol	12	U	12	8.4	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,1,2,2-Tetrachloroethane	12	U	12	1.8	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Tetrachloroethene	12	U	12	2.1	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Toluene	**2.3**	**J**	12	1.7	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
trans-1,2-Dichloroethene	12	U	12	1.9	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
trans-1,3-Dichloropropene	12	U	12	2.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,2,4-Trichlorobenzene	12	U	12	1.8	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,1,1-Trichloroethane	12	U	12	2.7	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,1,2-Trichloroethane	12	U	12	2.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Trichloroethene	12	U	12	1.2	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1

Client Sample ID: SB03-06 (0.0-1.0)
Date Collected: 08/22/13 08:45
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-1
Matrix: Solid
Percent Solids: 65.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	12	U	12	2.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	12	U	12	4.9	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Vinyl chloride	12	U	12	2.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1
Xylenes, Total	**11**	**J**	25	4.7	ug/Kg	☼	08/26/13 08:10	08/28/13 18:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 122*	*08/26/13 08:10*	*08/28/13 18:26*	*1*
Dibromofluoromethane	*96*		*79 - 123*	*08/26/13 08:10*	*08/28/13 18:26*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*	*08/26/13 08:10*	*08/28/13 18:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	**140**	**J**	500	88	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Phenol	500	U	500	52	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Bis(2-chloroethyl)ether	500	U	500	68	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2-Chlorophenol	500	U	500	61	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2-Methylphenol	500	U	500	41	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
bis (2-chloroisopropyl) ether	500	U	500	45	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Acetophenone	**93**	**J**	500	42	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
3 & 4 Methylphenol	500	U	500	65	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
N-Nitrosodi-n-propylamine	500	U	500	48	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Hexachloroethane	500	U	500	42	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Nitrobenzene	500	U	500	39	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Isophorone	500	U	500	50	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2-Nitrophenol	500	U	500	62	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2,4-Dimethylphenol	500	U	500	67	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Bis(2-chloroethoxy)methane	500	U	500	59	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2,4-Dichlorophenol	500	U	500	53	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Naphthalene	**1400**		500	45	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
4-Chloroaniline	1000	U	1000	79	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Hexachlorobutadiene	500	U	500	55	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Caprolactam	**740**		500	100	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
4-Chloro-3-methylphenol	500	U	500	53	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2-Methylnaphthalene	**2800**		500	58	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Hexachlorocyclopentadiene	500	U	500	62	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2,4,6-Trichlorophenol	500	U	500	44	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2,4,5-Trichlorophenol	500	U	500	53	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
1,1'-Biphenyl	1100	U	1100	1100	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2-Chloronaphthalene	500	U	500	53	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2-Nitroaniline	2600	U	2600	68	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Dimethyl phthalate	500	U	500	52	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2,6-Dinitrotoluene	500	U	500	64	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Acenaphthylene	**110**	**J**	500	55	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
3-Nitroaniline	2600	U	2600	70	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Acenaphthene	500	U	500	62	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2,4-Dinitrophenol	2600	U	2600	1300	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
4-Nitrophenol	2600	U	2600	500	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Dibenzofuran	**540**		500	50	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
2,4-Dinitrotoluene	500	U	500	74	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Diethyl phthalate	500	U	500	56	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1

Client Sample ID: SB03-06 (0.0-1.0)
Date Collected: 08/22/13 08:45
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-1
Matrix: Solid
Percent Solids: 65.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**190**	**J**	500	55	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
4-Chlorophenyl phenyl ether	500	U	500	67	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
4-Nitroaniline	2600	U	2600	74	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
4,6-Dinitro-2-methylphenol	2600	U	2600	260	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
N-Nitrosodiphenylamine	500	U	500	50	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
4-Bromophenyl phenyl ether	500	U	500	55	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Hexachlorobenzene	500	U	500	59	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Atrazine	500	U	500	35	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Pentachlorophenol	2600	U	2600	500	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Phenanthrene	**1000**		500	41	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Anthracene	**240**	**J**	500	38	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Carbazole	500	U	500	45	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Di-n-butyl phthalate	500	U	500	45	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Fluoranthene	**200**	**J**	500	48	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Pyrene	**300**	**J**	500	41	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Butyl benzyl phthalate	500	U	500	39	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
3,3'-Dichlorobenzidine	1000	U	1000	42	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Benzo[a]anthracene	**88**	**J**	500	41	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Chrysene	**150**	**J**	500	32	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Bis(2-ethylhexyl) phthalate	500	U	500	44	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Di-n-octyl phthalate	**140**	**J**	500	44	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Benzo[b]fluoranthene	**140**	**J**	500	58	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Benzo[k]fluoranthene	500	U	500	99	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Benzo[a]pyrene	500	U	500	79	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Indeno[1,2,3-cd]pyrene	**79**	**J**	500	42	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Dibenz(a,h)anthracene	500	U	500	59	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1
Benzo[g,h,i]perylene	**51**	**J**	500	33	ug/Kg	☼	08/26/13 14:24	08/27/13 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*64*		*46 - 130*	*08/26/13 14:24*	*08/27/13 20:13*	*1*
2-Fluorobiphenyl	*61*		*58 - 130*	*08/26/13 14:24*	*08/27/13 20:13*	*1*
Terphenyl-d14 (Surr)	*75*		*60 - 130*	*08/26/13 14:24*	*08/27/13 20:13*	*1*
Phenol-d5 (Surr)	*48*	*X*	*49 - 130*	*08/26/13 14:24*	*08/27/13 20:13*	*1*
2-Fluorophenol (Surr)	*46*		*40 - 130*	*08/26/13 14:24*	*08/27/13 20:13*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*58 - 130*	*08/26/13 14:24*	*08/27/13 20:13*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**1000**		390	30	ug/Kg	☼	08/26/13 09:31	08/26/13 15:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*182*	*X*	*70 - 131*	*08/26/13 09:31*	*08/26/13 15:50*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**230000**		7500	2100	ug/Kg	☼	08/28/13 08:56	08/29/13 18:52	1
ORO C24-C40	**12000**	**B**	7500	2100	ug/Kg	☼	08/28/13 08:56	08/29/13 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*113*		*50 - 150*	*08/28/13 08:56*	*08/29/13 18:52*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-06 (2.5-3.5)
Date Collected: 08/22/13 08:55
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-2
Matrix: Solid
Percent Solids: 81.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**19**	**J**	21	6.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Benzene	4.3	U	4.3	0.42	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Bromodichloromethane	4.3	U	4.3	0.72	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Bromoform	4.3	U	4.3	0.54	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Bromomethane	4.3	U	4.3	1.2	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Carbon disulfide	4.3	U	4.3	1.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Carbon tetrachloride	4.3	U	4.3	1.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Chlorobenzene	4.3	U	4.3	0.45	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Chloroethane	4.3	U	4.3	1.6	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Chloroform	4.3	U	4.3	0.51	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Chloromethane	4.3	U	4.3	0.86	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
cis-1,2-Dichloroethene	4.3	U	4.3	0.65	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
cis-1,3-Dichloropropene	4.3	U	4.3	1.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Cyclohexane	4.3	U	4.3	0.81	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Dibromochloromethane	4.3	U	4.3	0.75	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,2-Dibromo-3-Chloropropane	4.3	U	4.3	2.8	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,2-Dichlorobenzene	**2.2**	**J**	4.3	0.61	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,3-Dichlorobenzene	4.3	U	4.3	0.82	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,4-Dichlorobenzene	4.3	U	4.3	0.70	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Dichlorodifluoromethane	4.3	U	4.3	1.1	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,1-Dichloroethane	4.3	U	4.3	0.71	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,2-Dichloroethane	4.3	U	4.3	0.70	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,1-Dichloroethene	4.3	U	4.3	0.64	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,2-Dichloropropane	4.3	U	4.3	0.64	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Diisopropyl ether	4.3	U	4.3	0.47	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Ethylbenzene	4.3	U	4.3	0.52	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Ethylene Dibromide	4.3	U	4.3	0.41	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Ethyl tert-butyl ether	4.3	U	4.3	0.48	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
2-Hexanone	21	U	21	4.3	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Isopropylbenzene	4.3	U	4.3	0.58	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Methyl acetate	4.3	U	4.3	4.0	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Methylcyclohexane	4.3	U	4.3	0.75	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Methylene Chloride	13	U	13	8.6	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Methyl Ethyl Ketone	21	U	21	3.5	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
methyl isobutyl ketone	21	U	21	3.4	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Methyl tert-butyl ether	4.3	U	4.3	0.86	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Naphthalene	4.3	U	4.3	0.86	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Styrene	4.3	U	4.3	0.65	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Tert-amyl methyl ether	4.3	U	4.3	0.38	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
tert-Butyl alcohol	4.3	U	4.3	2.9	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,1,2,2-Tetrachloroethane	4.3	U	4.3	0.62	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Tetrachloroethene	4.3	U	4.3	0.72	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Toluene	4.3	U	4.3	0.60	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
trans-1,2-Dichloroethene	4.3	U	4.3	0.65	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
trans-1,3-Dichloropropene	4.3	U	4.3	0.79	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,2,4-Trichlorobenzene	4.3	U	4.3	0.63	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,1,1-Trichloroethane	4.3	U	4.3	0.95	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,1,2-Trichloroethane	4.3	U	4.3	0.79	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Trichloroethene	4.3	U	4.3	0.41	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1

Client Sample ID: SB03-06 (2.5-3.5)
Date Collected: 08/22/13 08:55
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-2
Matrix: Solid
Percent Solids: 81.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.3	U	4.3	0.82	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	U	4.3	1.7	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Vinyl chloride	4.3	U	4.3	0.79	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1
Xylenes, Total	**2.4**	**J**	8.6	1.6	ug/Kg	☼	08/26/13 08:10	08/28/13 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*72 - 122*	*08/26/13 08:10*	*08/28/13 18:49*	*1*
Dibromofluoromethane	*99*		*79 - 123*	*08/26/13 08:10*	*08/28/13 18:49*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*	*08/26/13 08:10*	*08/28/13 18:49*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	71	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Phenol	400	U	400	41	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
bis (2-chloroisopropyl) ether	400	U	400	37	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Isophorone	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2,4-Dimethylphenol	400	U	400	54	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Naphthalene	**58**	**J**	400	37	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2-Methylnaphthalene	**89**	**J**	400	46	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
1,1'-Biphenyl	900	U	900	900	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Acenaphthene	**120**	**J**	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1

Client Sample ID: SB03-06 (2.5-3.5)
Date Collected: 08/22/13 08:55
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-2
Matrix: Solid
Percent Solids: 81.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**200**	**J**	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
4-Chlorophenyl phenyl ether	400	U	400	54	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Atrazine	400	U	400	28	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Anthracene	400	U	400	30	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Carbazole	400	U	400	37	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Di-n-butyl phthalate	400	U	400	37	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Pyrene	**45**	**J**	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Chrysene	400	U	400	26	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/26/13 14:24	08/27/13 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*62*		*46 - 130*	*08/26/13 14:24*	*08/27/13 14:36*	*1*
2-Fluorobiphenyl	*73*		*58 - 130*	*08/26/13 14:24*	*08/27/13 14:36*	*1*
Terphenyl-d14 (Surr)	*62*		*60 - 130*	*08/26/13 14:24*	*08/27/13 14:36*	*1*
Phenol-d5 (Surr)	*75*		*49 - 130*	*08/26/13 14:24*	*08/27/13 14:36*	*1*
2-Fluorophenol (Surr)	*64*		*40 - 130*	*08/26/13 14:24*	*08/27/13 14:36*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*58 - 130*	*08/26/13 14:24*	*08/27/13 14:36*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**880**		260	20	ug/Kg	☼	08/26/13 09:31	08/26/13 16:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*92*		*70 - 131*	*08/26/13 09:31*	*08/26/13 16:10*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**47000**		6000	1700	ug/Kg	☼	09/05/13 12:12	09/06/13 04:11	1
ORO C24-C40	**9000**	**B**	6000	1700	ug/Kg	☼	09/05/13 12:12	09/06/13 04:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*74*		*50 - 150*	*09/05/13 12:12*	*09/06/13 04:11*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-07 (1.5-2.5)
Date Collected: 08/22/13 10:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-3
Matrix: Solid
Percent Solids: 79.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	U	22	6.3	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Benzene	4.3	U	4.3	0.42	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Bromodichloromethane	4.3	U	4.3	0.72	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Bromoform	4.3	U	4.3	0.54	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Bromomethane	4.3	U	4.3	1.2	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Carbon disulfide	4.3	U	4.3	1.0	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Carbon tetrachloride	4.3	U	4.3	1.5	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Chlorobenzene	4.3	U	4.3	0.45	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Chloroethane	4.3	U	4.3	1.6	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Chloroform	4.3	U	4.3	0.51	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Chloromethane	4.3	U	4.3	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
cis-1,2-Dichloroethene	4.3	U	4.3	0.66	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
cis-1,3-Dichloropropene	4.3	U	4.3	1.0	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Cyclohexane	4.3	U	4.3	0.81	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Dibromochloromethane	4.3	U	4.3	0.75	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,2-Dibromo-3-Chloropropane	4.3	U	4.3	2.8	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,2-Dichlorobenzene	4.3	U	4.3	0.61	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,3-Dichlorobenzene	4.3	U	4.3	0.82	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,4-Dichlorobenzene	4.3	U	4.3	0.71	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Dichlorodifluoromethane	4.3	U	4.3	1.1	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,1-Dichloroethane	4.3	U	4.3	0.72	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,2-Dichloroethane	4.3	U	4.3	0.71	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,1-Dichloroethene	4.3	U	4.3	0.65	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,2-Dichloropropane	4.3	U	4.3	0.64	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Diisopropyl ether	4.3	U	4.3	0.47	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Ethylbenzene	4.3	U	4.3	0.53	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Ethylene Dibromide	4.3	U	4.3	0.41	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Ethyl tert-butyl ether	4.3	U	4.3	0.48	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
2-Hexanone	22	U	22	4.3	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Isopropylbenzene	4.3	U	4.3	0.59	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Methyl acetate	4.3	U	4.3	4.0	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Methylcyclohexane	4.3	U	4.3	0.75	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Methylene Chloride	13	U	13	8.6	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Methyl Ethyl Ketone	22	U	22	3.5	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
methyl isobutyl ketone	22	U	22	3.4	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Methyl tert-butyl ether	4.3	U	4.3	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Naphthalene	4.3	U	4.3	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Styrene	4.3	U	4.3	0.66	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Tert-amyl methyl ether	4.3	U	4.3	0.38	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
tert-Butyl alcohol	4.3	U	4.3	2.9	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,1,2,2-Tetrachloroethane	4.3	U	4.3	0.62	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Tetrachloroethene	4.3	U	4.3	0.72	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Toluene	4.3	U	4.3	0.60	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
trans-1,2-Dichloroethene	4.3	U	4.3	0.66	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
trans-1,3-Dichloropropene	4.3	U	4.3	0.79	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,2,4-Trichlorobenzene	4.3	U	4.3	0.63	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,1,1-Trichloroethane	4.3	U	4.3	0.95	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,1,2-Trichloroethane	4.3	U	4.3	0.79	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Trichloroethene	4.3	U	4.3	0.41	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1

Client Sample ID: SB03-07 (1.5-2.5)
Date Collected: 08/22/13 10:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-3
Matrix: Solid
Percent Solids: 79.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**4.8**		4.3	0.82	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	U	4.3	1.7	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Vinyl chloride	4.3	U	4.3	0.79	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1
Xylenes, Total	8.6	U	8.6	1.6	ug/Kg	☼	08/26/13 08:12	08/30/13 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/26/13 08:12*	*08/30/13 13:06*	*1*
Dibromofluoromethane	*90*		*79 - 123*	*08/26/13 08:12*	*08/30/13 13:06*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 08:12*	*08/30/13 13:06*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	410	U	410	72	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Phenol	410	U	410	42	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Bis(2-chloroethyl)ether	410	U	410	56	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2-Chlorophenol	410	U	410	50	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2-Methylphenol	410	U	410	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
bis (2-chloroisopropyl) ether	410	U	410	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Acetophenone	**35**	**J**	410	35	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
3 & 4 Methylphenol	410	U	410	53	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
N-Nitrosodi-n-propylamine	410	U	410	40	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Hexachloroethane	410	U	410	35	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Nitrobenzene	410	U	410	32	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Isophorone	410	U	410	41	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2-Nitrophenol	410	U	410	51	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2,4-Dimethylphenol	410	U	410	55	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Bis(2-chloroethoxy)methane	410	U	410	48	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2,4-Dichlorophenol	410	U	410	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Naphthalene	**330**	**J**	410	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
4-Chloroaniline	820	U	820	65	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Hexachlorobutadiene	410	U	410	45	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Caprolactam	410	U	410	82	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
4-Chloro-3-methylphenol	410	U	410	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2-Methylnaphthalene	**690**		410	47	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Hexachlorocyclopentadiene	410	U	410	51	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2,4,6-Trichlorophenol	410	U	410	36	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2,4,5-Trichlorophenol	410	U	410	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
1,1'-Biphenyl	920	U	920	920	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2-Chloronaphthalene	410	U	410	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Dimethyl phthalate	410	U	410	42	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2,6-Dinitrotoluene	410	U	410	52	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Acenaphthylene	410	U	410	45	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
3-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Acenaphthene	410	U	410	51	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
4-Nitrophenol	2100	U	2100	410	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Dibenzofuran	**130**	**J**	410	41	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
2,4-Dinitrotoluene	410	U	410	61	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Diethyl phthalate	410	U	410	46	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1

Client Sample ID: SB03-07 (1.5-2.5)
Date Collected: 08/22/13 10:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-3
Matrix: Solid
Percent Solids: 79.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**170**	**J**	410	45	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
4-Chlorophenyl phenyl ether	410	U	410	55	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
4-Nitroaniline	2100	U	2100	61	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
N-Nitrosodiphenylamine	410	U	410	41	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
4-Bromophenyl phenyl ether	410	U	410	45	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Hexachlorobenzene	410	U	410	48	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Atrazine	410	U	410	29	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Pentachlorophenol	2100	U	2100	410	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Phenanthrene	**250**	**J**	410	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Anthracene	**76**	**J**	410	31	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Carbazole	410	U	410	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Di-n-butyl phthalate	410	U	410	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Fluoranthene	**96**	**J**	410	40	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Pyrene	**65**	**J**	410	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Butyl benzyl phthalate	410	U	410	32	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
3,3'-Dichlorobenzidine	820	U	820	35	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Benzo[a]anthracene	410	U	410	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Chrysene	**62**	**J**	410	26	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Bis(2-ethylhexyl) phthalate	410	U	410	36	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Di-n-octyl phthalate	410	U	410	36	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Benzo[b]fluoranthene	**48**	**J**	410	47	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Benzo[k]fluoranthene	410	U	410	81	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Benzo[a]pyrene	410	U	410	65	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Indeno[1,2,3-cd]pyrene	410	U	410	35	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Dibenz(a,h)anthracene	410	U	410	48	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1
Benzo[g,h,i]perylene	410	U	410	27	ug/Kg	☼	08/30/13 14:23	09/03/13 20:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*55*		*46 - 130*	*08/30/13 14:23*	*09/03/13 20:23*	*1*
2-Fluorobiphenyl	*66*		*58 - 130*	*08/30/13 14:23*	*09/03/13 20:23*	*1*
Terphenyl-d14 (Surr)	*67*		*60 - 130*	*08/30/13 14:23*	*09/03/13 20:23*	*1*
Phenol-d5 (Surr)	*63*		*49 - 130*	*08/30/13 14:23*	*09/03/13 20:23*	*1*
2-Fluorophenol (Surr)	*76*		*40 - 130*	*08/30/13 14:23*	*09/03/13 20:23*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*58 - 130*	*08/30/13 14:23*	*09/03/13 20:23*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**17000**		12000	910	ug/Kg	☼	08/26/13 09:31	08/27/13 18:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*56*	*X*	*70 - 131*	*08/26/13 09:31*	*08/27/13 18:31*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**9000**		6100	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 19:24	1
ORO C24-C40	**3700**	**J B**	6100	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*68*		*50 - 150*	*08/28/13 08:56*	*08/29/13 19:24*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-07 (4.5-5.5)
Date Collected: 08/22/13 10:10
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-4
Matrix: Solid
Percent Solids: 74.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**25**		23	6.7	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Benzene	4.6	U	4.6	0.45	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Bromodichloromethane	4.6	U	4.6	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Bromoform	4.6	U	4.6	0.58	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Bromomethane	4.6	U	4.6	1.3	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Carbon disulfide	4.6	U	4.6	1.1	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Carbon tetrachloride	4.6	U	4.6	1.6	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Chlorobenzene	4.6	U	4.6	0.48	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Chloroethane	4.6	U	4.6	1.7	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Chloroform	4.6	U	4.6	0.54	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Chloromethane	4.6	U	4.6	0.92	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
cis-1,2-Dichloroethene	4.6	U	4.6	0.70	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
cis-1,3-Dichloropropene	4.6	U	4.6	1.1	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Cyclohexane	4.6	U	4.6	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Dibromochloromethane	4.6	U	4.6	0.80	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,2-Dibromo-3-Chloropropane	4.6	U	4.6	3.0	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,2-Dichlorobenzene	4.6	U	4.6	0.65	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,3-Dichlorobenzene	4.6	U	4.6	0.87	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,4-Dichlorobenzene	4.6	U	4.6	0.75	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Dichlorodifluoromethane	4.6	U	4.6	1.2	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,1-Dichloroethane	4.6	U	4.6	0.76	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,2-Dichloroethane	4.6	U	4.6	0.75	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,1-Dichloroethene	4.6	U	4.6	0.69	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,2-Dichloropropane	4.6	U	4.6	0.68	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Diisopropyl ether	4.6	U	4.6	0.50	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Ethylbenzene	4.6	U	4.6	0.56	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Ethylene Dibromide	4.6	U	4.6	0.44	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Ethyl tert-butyl ether	4.6	U	4.6	0.51	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
2-Hexanone	23	U	23	4.6	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Isopropylbenzene	4.6	U	4.6	0.62	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Methyl acetate	4.6	U	4.6	4.2	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Methylcyclohexane	**1.1**	**J**	4.6	0.80	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Methylene Chloride	14	U	14	9.2	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Methyl Ethyl Ketone	**6.1**	**J**	23	3.8	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
methyl isobutyl ketone	23	U	23	3.7	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Methyl tert-butyl ether	4.6	U	4.6	0.92	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Naphthalene	4.6	U	4.6	0.92	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Styrene	4.6	U	4.6	0.70	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Tert-amyl methyl ether	4.6	U	4.6	0.40	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
tert-Butyl alcohol	4.6	U	4.6	3.1	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,1,2,2-Tetrachloroethane	4.6	U	4.6	0.66	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Tetrachloroethene	4.6	U	4.6	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Toluene	4.6	U	4.6	0.64	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
trans-1,2-Dichloroethene	4.6	U	4.6	0.70	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
trans-1,3-Dichloropropene	4.6	U	4.6	0.84	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,2,4-Trichlorobenzene	4.6	U	4.6	0.67	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,1,1-Trichloroethane	4.6	U	4.6	1.0	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,1,2-Trichloroethane	4.6	U	4.6	0.84	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Trichloroethene	4.6	U	4.6	0.44	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-07 (4.5-5.5)
Date Collected: 08/22/13 10:10
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-4
Matrix: Solid
Percent Solids: 74.4

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**5.0**		4.6	0.87	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.6	U	4.6	1.8	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Vinyl chloride	4.6	U	4.6	0.84	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1
Xylenes, Total	9.2	U	9.2	1.7	ug/Kg	☼	08/26/13 08:12	08/30/13 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 122*	*08/26/13 08:12*	*08/30/13 13:34*	*1*
Dibromofluoromethane	*91*		*79 - 123*	*08/26/13 08:12*	*08/30/13 13:34*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/13 08:12*	*08/30/13 13:34*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	440	U	440	78	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Phenol	440	U	440	46	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Bis(2-chloroethyl)ether	440	U	440	60	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2-Chlorophenol	440	U	440	54	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2-Methylphenol	440	U	440	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
bis (2-chloroisopropyl) ether	440	U	440	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Acetophenone	440	U	440	38	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
3 & 4 Methylphenol	440	U	440	58	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
N-Nitrosodi-n-propylamine	440	U	440	43	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Hexachloroethane	440	U	440	38	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Nitrobenzene	440	U	440	35	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Isophorone	440	U	440	44	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2-Nitrophenol	440	U	440	55	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2,4-Dimethylphenol	440	U	440	59	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Bis(2-chloroethoxy)methane	440	U	440	52	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2,4-Dichlorophenol	440	U	440	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Naphthalene	**420**	**J**	440	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
4-Chloroaniline	890	U	890	70	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Hexachlorobutadiene	440	U	440	48	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Caprolactam	440	U	440	89	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
4-Chloro-3-methylphenol	440	U	440	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2-Methylnaphthalene	**800**		440	51	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Hexachlorocyclopentadiene	440	U	440	55	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2,4,6-Trichlorophenol	440	U	440	39	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2,4,5-Trichlorophenol	440	U	440	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
1,1'-Biphenyl	990	U	990	990	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2-Chloronaphthalene	440	U	440	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2-Nitroaniline	2300	U	2300	60	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Dimethyl phthalate	440	U	440	46	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2,6-Dinitrotoluene	440	U	440	56	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Acenaphthylene	440	U	440	48	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
3-Nitroaniline	2300	U	2300	62	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Acenaphthene	440	U	440	55	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2,4-Dinitrophenol	2300	U	2300	1100	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
4-Nitrophenol	2300	U	2300	440	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Dibenzofuran	**120**	**J**	440	44	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
2,4-Dinitrotoluene	440	U	440	66	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Diethyl phthalate	440	U	440	50	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1

Client Sample ID: SB03-07 (4.5-5.5)
Date Collected: 08/22/13 10:10
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-4
Matrix: Solid
Percent Solids: 74.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	140	J	440	48	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
4-Chlorophenyl phenyl ether	440	U	440	59	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
4-Nitroaniline	2300	U	2300	66	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
4,6-Dinitro-2-methylphenol	2300	U	2300	230	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
N-Nitrosodiphenylamine	440	U	440	44	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
4-Bromophenyl phenyl ether	440	U	440	48	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Hexachlorobenzene	440	U	440	52	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Atrazine	440	U	440	31	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Pentachlorophenol	2300	U	2300	440	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Phenanthrene	210	J	440	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Anthracene	77	J	440	34	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Carbazole	40	J	440	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Di-n-butyl phthalate	440	U	440	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Fluoranthene	60	J	440	43	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Pyrene	58	J	440	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Butyl benzyl phthalate	440	U	440	35	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
3,3'-Dichlorobenzidine	890	U	890	38	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Benzo[a]anthracene	440	U	440	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Chrysene	41	J	440	28	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Bis(2-ethylhexyl) phthalate	440	U	440	39	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Di-n-octyl phthalate	440	U	440	39	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Benzo[b]fluoranthene	440	U	440	51	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Benzo[k]fluoranthene	440	U	440	87	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Benzo[a]pyrene	440	U	440	70	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Indeno[1,2,3-cd]pyrene	440	U	440	38	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Dibenz(a,h)anthracene	440	U	440	52	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1
Benzo[g,h,i]perylene	440	U	440	30	ug/Kg	☼	08/26/13 14:24	08/27/13 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*59*		*46 - 130*	*08/26/13 14:24*	*08/27/13 15:24*	*1*
2-Fluorobiphenyl	*84*		*58 - 130*	*08/26/13 14:24*	*08/27/13 15:24*	*1*
Terphenyl-d14 (Surr)	*83*		*60 - 130*	*08/26/13 14:24*	*08/27/13 15:24*	*1*
Phenol-d5 (Surr)	*76*		*49 - 130*	*08/26/13 14:24*	*08/27/13 15:24*	*1*
2-Fluorophenol (Surr)	*75*		*40 - 130*	*08/26/13 14:24*	*08/27/13 15:24*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*58 - 130*	*08/26/13 14:24*	*08/27/13 15:24*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	450		250	19	ug/Kg	☼	08/26/13 09:31	08/26/13 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*126*		*70 - 131*	*08/26/13 09:31*	*08/26/13 16:49*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	120000		6600	1800	ug/Kg	☼	08/28/13 08:56	08/29/13 19:40	1
ORO C24-C40	18000	B	6600	1800	ug/Kg	☼	08/28/13 08:56	08/29/13 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*89*		*50 - 150*	*08/28/13 08:56*	*08/29/13 19:40*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-08 (1.0-2.0)
Date Collected: 08/22/13 10:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-5
Matrix: Solid
Percent Solids: 75.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.4	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Benzene	5.1	U	5.1	0.50	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Bromodichloromethane	5.1	U	5.1	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Bromoform	5.1	U	5.1	0.64	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Bromomethane	5.1	U	5.1	1.4	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Carbon disulfide	5.1	U	5.1	1.2	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Carbon tetrachloride	5.1	U	5.1	1.7	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Chlorobenzene	5.1	U	5.1	0.53	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Chloroethane	5.1	U	5.1	1.9	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Chloroform	5.1	U	5.1	0.60	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Chloromethane	5.1	U	5.1	1.0	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
cis-1,2-Dichloroethene	5.1	U	5.1	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
cis-1,3-Dichloropropene	5.1	U	5.1	1.2	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Cyclohexane	5.1	U	5.1	0.96	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Dibromochloromethane	5.1	U	5.1	0.89	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,2-Dibromo-3-Chloropropane	5.1	U	5.1	3.4	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,2-Dichlorobenzene	5.1	U	5.1	0.72	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,3-Dichlorobenzene	5.1	U	5.1	0.97	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,4-Dichlorobenzene	5.1	U	5.1	0.84	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Dichlorodifluoromethane	5.1	U	5.1	1.3	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,1-Dichloroethane	5.1	U	5.1	0.85	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,2-Dichloroethane	5.1	U	5.1	0.84	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,1-Dichloroethene	5.1	U	5.1	0.76	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,2-Dichloropropane	5.1	U	5.1	0.75	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Diisopropyl ether	5.1	U	5.1	0.56	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Ethylbenzene	5.1	U	5.1	0.62	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Ethylene Dibromide	5.1	U	5.1	0.49	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Ethyl tert-butyl ether	5.1	U	5.1	0.57	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
2-Hexanone	25	U	25	5.1	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Isopropylbenzene	5.1	U	5.1	0.69	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Methyl acetate	5.1	U	5.1	4.7	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Methylcyclohexane	5.1	U	5.1	0.89	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Methylene Chloride	15	U	15	10	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Methyl Ethyl Ketone	25	U	25	4.2	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
methyl isobutyl ketone	25	U	25	4.1	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Methyl tert-butyl ether	5.1	U	5.1	1.0	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Naphthalene	5.1	U	5.1	1.0	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Styrene	5.1	U	5.1	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Tert-amyl methyl ether	5.1	U	5.1	0.45	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
tert-Butyl alcohol	5.1	U	5.1	3.5	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,1,2,2-Tetrachloroethane	5.1	U	5.1	0.73	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Tetrachloroethene	5.1	U	5.1	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Toluene	5.1	U	5.1	0.71	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
trans-1,2-Dichloroethene	5.1	U	5.1	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
trans-1,3-Dichloropropene	5.1	U	5.1	0.94	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,2,4-Trichlorobenzene	5.1	U	5.1	0.74	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,1,1-Trichloroethane	5.1	U	5.1	1.1	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,1,2-Trichloroethane	5.1	U	5.1	0.94	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Trichloroethene	5.1	U	5.1	0.49	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-08 (1.0-2.0)
Date Collected: 08/22/13 10:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-5
Matrix: Solid
Percent Solids: 75.4

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**7.7**		5.1	0.97	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.1	U	5.1	2.0	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Vinyl chloride	5.1	U	5.1	0.94	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1
Xylenes, Total	10	U	10	1.9	ug/Kg	☼	08/26/13 08:12	08/30/13 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*72 - 122*	*08/26/13 08:12*	*08/30/13 14:02*	*1*
Dibromofluoromethane	*87*		*79 - 123*	*08/26/13 08:12*	*08/30/13 14:02*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*08/26/13 08:12*	*08/30/13 14:02*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	430	U	430	76	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Phenol	430	U	430	45	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Bis(2-chloroethyl)ether	430	U	430	59	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2-Chlorophenol	430	U	430	53	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2-Methylphenol	430	U	430	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
bis (2-chloroisopropyl) ether	430	U	430	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Acetophenone	430	U	430	37	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
3 & 4 Methylphenol	430	U	430	57	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
N-Nitrosodi-n-propylamine	430	U	430	42	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Hexachloroethane	430	U	430	37	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Nitrobenzene	430	U	430	34	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Isophorone	430	U	430	43	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2-Nitrophenol	430	U	430	54	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2,4-Dimethylphenol	430	U	430	58	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Bis(2-chloroethoxy)methane	430	U	430	51	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2,4-Dichlorophenol	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Naphthalene	**94**	**J**	430	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
4-Chloroaniline	870	U	870	69	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Hexachlorobutadiene	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Caprolactam	430	U	430	87	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
4-Chloro-3-methylphenol	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2-Methylnaphthalene	**220**	**J**	430	50	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Hexachlorocyclopentadiene	430	U	430	54	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2,4,6-Trichlorophenol	430	U	430	38	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2,4,5-Trichlorophenol	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
1,1'-Biphenyl	980	U	980	980	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2-Chloronaphthalene	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2-Nitroaniline	2200	U	2200	59	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Dimethyl phthalate	430	U	430	45	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2,6-Dinitrotoluene	430	U	430	55	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Acenaphthylene	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
3-Nitroaniline	2200	U	2200	61	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Acenaphthene	430	U	430	54	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
4-Nitrophenol	2200	U	2200	430	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Dibenzofuran	430	U	430	43	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
2,4-Dinitrotoluene	430	U	430	65	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Diethyl phthalate	430	U	430	49	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1

Client Sample ID: SB03-08 (1.0-2.0)
Date Collected: 08/22/13 10:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-5
Matrix: Solid
Percent Solids: 75.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
4-Chlorophenyl phenyl ether	430	U	430	58	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
4-Nitroaniline	2200	U	2200	65	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
N-Nitrosodiphenylamine	430	U	430	43	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
4-Bromophenyl phenyl ether	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Hexachlorobenzene	430	U	430	51	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Atrazine	430	U	430	30	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Pentachlorophenol	2200	U	2200	430	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Phenanthrene	**39**	**J**	430	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Anthracene	430	U	430	33	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Carbazole	430	U	430	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Di-n-butyl phthalate	430	U	430	40	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Fluoranthene	430	U	430	42	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Pyrene	430	U	430	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Butyl benzyl phthalate	430	U	430	34	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
3,3'-Dichlorobenzidine	870	U	870	37	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Benzo[a]anthracene	430	U	430	36	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Chrysene	430	U	430	28	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Bis(2-ethylhexyl) phthalate	430	U	430	38	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Di-n-octyl phthalate	430	U	430	38	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Benzo[b]fluoranthene	430	U	430	50	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Benzo[k]fluoranthene	430	U	430	86	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Benzo[a]pyrene	430	U	430	69	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Indeno[1,2,3-cd]pyrene	430	U	430	37	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Dibenz(a,h)anthracene	430	U	430	51	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1
Benzo[g,h,i]perylene	430	U	430	29	ug/Kg	☼	08/26/13 14:24	08/27/13 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*71*		*46 - 130*	*08/26/13 14:24*	*08/27/13 15:48*	*1*
2-Fluorobiphenyl	*81*		*58 - 130*	*08/26/13 14:24*	*08/27/13 15:48*	*1*
Terphenyl-d14 (Surr)	*84*		*60 - 130*	*08/26/13 14:24*	*08/27/13 15:48*	*1*
Phenol-d5 (Surr)	*80*		*49 - 130*	*08/26/13 14:24*	*08/27/13 15:48*	*1*
2-Fluorophenol (Surr)	*71*		*40 - 130*	*08/26/13 14:24*	*08/27/13 15:48*	*1*
2,4,6-Tribromophenol (Surr)	*90*		*58 - 130*	*08/26/13 14:24*	*08/27/13 15:48*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**2300**		250	19	ug/Kg	☼	08/26/13 09:31	08/26/13 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*95*		*70 - 131*	*08/26/13 09:31*	*08/26/13 17:09*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**32000**		6500	1800	ug/Kg	☼	08/28/13 08:56	08/29/13 19:56	1
ORO C24-C40	**37000**	**B**	6500	1800	ug/Kg	☼	08/28/13 08:56	08/29/13 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*68*		*50 - 150*	*08/28/13 08:56*	*08/29/13 19:56*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-08 (3.0-4.0)
Date Collected: 08/22/13 10:40
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-6
Matrix: Solid
Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	21	J	23	6.8	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Benzene	4.7	U	4.7	0.46	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Bromodichloromethane	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Bromoform	4.7	U	4.7	0.59	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Bromomethane	4.7	U	4.7	1.3	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Carbon disulfide	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Carbon tetrachloride	4.7	U	4.7	1.6	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Chlorobenzene	4.7	U	4.7	0.49	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Chloroethane	4.7	U	4.7	1.8	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Chloroform	4.7	U	4.7	0.55	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Chloromethane	4.7	U	4.7	0.93	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
cis-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
cis-1,3-Dichloropropene	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Cyclohexane	4.7	U	4.7	0.88	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Dibromochloromethane	4.7	U	4.7	0.81	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,2-Dibromo-3-Chloropropane	4.7	U	4.7	3.1	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,2-Dichlorobenzene	4.7	U	4.7	0.66	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,3-Dichlorobenzene	4.7	U	4.7	0.89	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,4-Dichlorobenzene	4.7	U	4.7	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Dichlorodifluoromethane	4.7	U	4.7	1.2	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,1-Dichloroethane	4.7	U	4.7	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,2-Dichloroethane	4.7	U	4.7	0.77	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,1-Dichloroethene	4.7	U	4.7	0.70	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,2-Dichloropropane	4.7	U	4.7	0.69	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Diisopropyl ether	4.7	U	4.7	0.51	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Ethylbenzene	4.7	U	4.7	0.57	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Ethylene Dibromide	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Ethyl tert-butyl ether	4.7	U	4.7	0.52	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
2-Hexanone	23	U	23	4.7	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Isopropylbenzene	4.7	U	4.7	0.63	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Methyl acetate	4.7	U	4.7	4.3	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Methylcyclohexane	4.7	U	4.7	0.81	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Methylene Chloride	14	U	14	9.3	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Methyl Ethyl Ketone	23	U	23	3.8	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
methyl isobutyl ketone	23	U	23	3.7	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Methyl tert-butyl ether	4.7	U	4.7	0.93	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Naphthalene	4.7	U	4.7	0.93	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Styrene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Tert-amyl methyl ether	4.7	U	4.7	0.41	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
tert-Butyl alcohol	4.7	U	4.7	3.2	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,1,2,2-Tetrachloroethane	4.7	U	4.7	0.67	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Tetrachloroethene	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Toluene	4.7	U	4.7	0.65	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
trans-1,2-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
trans-1,3-Dichloropropene	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,2,4-Trichlorobenzene	4.7	U	4.7	0.68	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,1,1-Trichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,1,2-Trichloroethane	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Trichloroethene	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1

Client Sample ID: SB03-08 (3.0-4.0)
Date Collected: 08/22/13 10:40
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-6
Matrix: Solid
Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.1		4.7	0.89	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7	U	4.7	1.9	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Vinyl chloride	4.7	U	4.7	0.86	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1
Xylenes, Total	9.3	U	9.3	1.8	ug/Kg	☼	08/26/13 08:12	08/30/13 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*110*		*72 - 122*	*08/26/13 08:12*	*08/30/13 14:29*	*1*
Dibromofluoromethane	*88*		*79 - 123*	*08/26/13 08:12*	*08/30/13 14:29*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*	*08/26/13 08:12*	*08/30/13 14:29*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Phenol	400	U	400	41	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Isophorone	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
1,1'-Biphenyl	900	U	900	900	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2-Nitroaniline	2100	U	2100	54	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Acenaphthene	93	J	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1

Client Sample ID: SB03-08 (3.0-4.0)
Date Collected: 08/22/13 10:40
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-6
Matrix: Solid
Percent Solids: 81.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**200**	**J**	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
4-Nitroaniline	2100	U	2100	59	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Atrazine	400	U	400	28	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Anthracene	400	U	400	30	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Carbazole	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Pyrene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Chrysene	400	U	400	25	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/26/13 14:24	08/27/13 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*63*		*46 - 130*	*08/26/13 14:24*	*08/27/13 16:13*	*1*
2-Fluorobiphenyl	*86*		*58 - 130*	*08/26/13 14:24*	*08/27/13 16:13*	*1*
Terphenyl-d14 (Surr)	*86*		*60 - 130*	*08/26/13 14:24*	*08/27/13 16:13*	*1*
Phenol-d5 (Surr)	*78*		*49 - 130*	*08/26/13 14:24*	*08/27/13 16:13*	*1*
2-Fluorophenol (Surr)	*68*		*40 - 130*	*08/26/13 14:24*	*08/27/13 16:13*	*1*
2,4,6-Tribromophenol (Surr)	*91*		*58 - 130*	*08/26/13 14:24*	*08/27/13 16:13*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**180**	**J**	230	18	ug/Kg	☼	08/26/13 09:31	08/28/13 22:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*77*		*70 - 131*	*08/26/13 09:31*	*08/28/13 22:59*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**57000**		6000	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 20:12	1
ORO C24-C40	**79000**	**B**	6000	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*74*		*50 - 150*	*08/28/13 08:56*	*08/29/13 20:12*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-09 (1.0-2.0)
Date Collected: 08/22/13 10:50
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-7
Matrix: Solid
Percent Solids: 76.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	28	U	28	8.2	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Benzene	5.6	U	5.6	0.55	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Bromodichloromethane	5.6	U	5.6	0.94	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Bromoform	5.6	U	5.6	0.71	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Bromomethane	5.6	U	5.6	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Carbon disulfide	5.6	U	5.6	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Carbon tetrachloride	5.6	U	5.6	1.9	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Chlorobenzene	5.6	U	5.6	0.58	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Chloroethane	5.6	U	5.6	2.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Chloroform	5.6	U	5.6	0.66	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Chloromethane	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
cis-1,2-Dichloroethene	5.6	U	5.6	0.85	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
cis-1,3-Dichloropropene	5.6	U	5.6	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Cyclohexane	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Dibromochloromethane	5.6	U	5.6	0.98	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,2-Dibromo-3-Chloropropane	5.6	U	5.6	3.7	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,2-Dichlorobenzene	5.6	U	5.6	0.80	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,3-Dichlorobenzene	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,4-Dichlorobenzene	5.6	U	5.6	0.92	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Dichlorodifluoromethane	5.6	U	5.6	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,1-Dichloroethane	5.6	U	5.6	0.93	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,2-Dichloroethane	5.6	U	5.6	0.92	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,1-Dichloroethene	5.6	U	5.6	0.84	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,2-Dichloropropane	5.6	U	5.6	0.83	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Diisopropyl ether	5.6	U	5.6	0.62	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Ethylbenzene	5.6	U	5.6	0.69	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Ethylene Dibromide	5.6	U	5.6	0.54	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Ethyl tert-butyl ether	5.6	U	5.6	0.63	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
2-Hexanone	28	U	28	5.6	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Isopropylbenzene	5.6	U	5.6	0.76	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Methyl acetate	5.6	U	5.6	5.2	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Methylcyclohexane	5.6	U	5.6	0.98	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Methylene Chloride	17	U	17	11	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Methyl Ethyl Ketone	28	U	28	4.6	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
methyl isobutyl ketone	28	U	28	4.5	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Methyl tert-butyl ether	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Naphthalene	5.6	U	5.6	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Styrene	5.6	U	5.6	0.85	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Tert-amyl methyl ether	5.6	U	5.6	0.49	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
tert-Butyl alcohol	5.6	U	5.6	3.8	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,1,2,2-Tetrachloroethane	5.6	U	5.6	0.81	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Tetrachloroethene	5.6	U	5.6	0.94	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Toluene	5.6	U	5.6	0.79	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
trans-1,2-Dichloroethene	5.6	U	5.6	0.85	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
trans-1,3-Dichloropropene	5.6	U	5.6	1.0	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,2,4-Trichlorobenzene	5.6	U	5.6	0.82	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,1,1-Trichloroethane	5.6	U	5.6	1.2	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,1,2-Trichloroethane	5.6	U	5.6	1.0	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Trichloroethene	5.6	U	5.6	0.54	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1

Client Sample ID: SB03-09 (1.0-2.0)
Date Collected: 08/22/13 10:50
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-7
Matrix: Solid
Percent Solids: 76.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	6.0		5.6	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.6	U	5.6	2.2	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Vinyl chloride	5.6	U	5.6	1.0	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1
Xylenes, Total	11	U	11	2.1	ug/Kg	☼	08/26/13 08:13	08/30/13 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*72 - 122*	*08/26/13 08:13*	*08/30/13 14:57*	*1*
Dibromofluoromethane	*86*		*79 - 123*	*08/26/13 08:13*	*08/30/13 14:57*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*	*08/26/13 08:13*	*08/30/13 14:57*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	430	U	430	76	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Phenol	430	U	430	45	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Bis(2-chloroethyl)ether	430	U	430	59	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2-Chlorophenol	430	U	430	52	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2-Methylphenol	430	U	430	35	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
bis (2-chloroisopropyl) ether	430	U	430	39	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Acetophenone	430	U	430	37	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
3 & 4 Methylphenol	430	U	430	56	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
N-Nitrosodi-n-propylamine	430	U	430	42	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Hexachloroethane	430	U	430	37	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Nitrobenzene	430	U	430	34	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Isophorone	430	U	430	43	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2-Nitrophenol	430	U	430	54	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2,4-Dimethylphenol	430	U	430	58	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Bis(2-chloroethoxy)methane	430	U	430	51	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2,4-Dichlorophenol	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Naphthalene	430	U	430	39	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
4-Chloroaniline	860	U	860	68	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Hexachlorobutadiene	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Caprolactam	430	U	430	86	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
4-Chloro-3-methylphenol	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2-Methylnaphthalene	430	U	430	50	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Hexachlorocyclopentadiene	430	U	430	54	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2,4,6-Trichlorophenol	430	U	430	38	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2,4,5-Trichlorophenol	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
1,1'-Biphenyl	970	U	970	970	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2-Chloronaphthalene	430	U	430	46	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2-Nitroaniline	2200	U	2200	59	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Dimethyl phthalate	430	U	430	45	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2,6-Dinitrotoluene	430	U	430	55	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Acenaphthylene	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
3-Nitroaniline	2200	U	2200	60	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Acenaphthene	430	U	430	54	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
4-Nitrophenol	2200	U	2200	430	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Dibenzofuran	430	U	430	43	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
2,4-Dinitrotoluene	430	U	430	64	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Diethyl phthalate	430	U	430	48	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1

Client Sample ID: SB03-09 (1.0-2.0)
Date Collected: 08/22/13 10:50
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-7
Matrix: Solid
Percent Solids: 76.3

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
4-Chlorophenyl phenyl ether	430	U	430	58	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
4-Nitroaniline	2200	U	2200	64	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
N-Nitrosodiphenylamine	430	U	430	43	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
4-Bromophenyl phenyl ether	430	U	430	47	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Hexachlorobenzene	430	U	430	51	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Atrazine	430	U	430	30	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Pentachlorophenol	2200	U	2200	430	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Phenanthrene	430	U	430	35	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Anthracene	430	U	430	33	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Carbazole	430	U	430	39	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Di-n-butyl phthalate	430	U	430	39	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Fluoranthene	430	U	430	42	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Pyrene	430	U	430	35	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Butyl benzyl phthalate	430	U	430	34	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
3,3'-Dichlorobenzidine	860	U	860	37	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Benzo[a]anthracene	430	U	430	35	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Chrysene	430	U	430	28	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Bis(2-ethylhexyl) phthalate	430	U	430	38	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Di-n-octyl phthalate	430	U	430	38	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Benzo[b]fluoranthene	430	U	430	50	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Benzo[k]fluoranthene	430	U	430	85	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Benzo[a]pyrene	430	U	430	68	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Indeno[1,2,3-cd]pyrene	430	U	430	37	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Dibenz(a,h)anthracene	430	U	430	51	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1
Benzo[g,h,i]perylene	430	U	430	29	ug/Kg	☼	08/26/13 14:24	08/27/13 16:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*57*		*46 - 130*	*08/26/13 14:24*	*08/27/13 16:37*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/26/13 14:24*	*08/27/13 16:37*	*1*
Terphenyl-d14 (Surr)	*88*		*60 - 130*	*08/26/13 14:24*	*08/27/13 16:37*	*1*
Phenol-d5 (Surr)	*78*		*49 - 130*	*08/26/13 14:24*	*08/27/13 16:37*	*1*
2-Fluorophenol (Surr)	*78*		*40 - 130*	*08/26/13 14:24*	*08/27/13 16:37*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*58 - 130*	*08/26/13 14:24*	*08/27/13 16:37*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	260	U	260	20	ug/Kg	☼	08/26/13 09:31	08/29/13 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*111*		*70 - 131*	*08/26/13 09:31*	*08/29/13 13:08*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4700**	**J**	6500	1800	ug/Kg	☼	08/28/13 08:56	08/29/13 20:28	1
ORO C24-C40	**4100**	**J B**	6500	1800	ug/Kg	☼	08/28/13 08:56	08/29/13 20:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*68*		*50 - 150*	*08/28/13 08:56*	*08/29/13 20:28*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-09 (3.5-4.5)
Date Collected: 08/22/13 11:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-8
Matrix: Solid
Percent Solids: 82.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.5	J	24	6.9	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Benzene	4.8	U	4.8	0.47	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Bromodichloromethane	4.8	U	4.8	0.80	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Bromoform	4.8	U	4.8	0.60	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Bromomethane	4.8	U	4.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Carbon disulfide	4.8	U	4.8	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Carbon tetrachloride	4.8	U	4.8	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Chlorobenzene	4.8	U	4.8	0.49	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Chloroethane	4.8	U	4.8	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Chloroform	4.8	U	4.8	0.56	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Chloromethane	4.8	U	4.8	0.95	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
cis-1,2-Dichloroethene	4.8	U	4.8	0.72	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
cis-1,3-Dichloropropene	4.8	U	4.8	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Cyclohexane	4.8	U	4.8	0.89	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Dibromochloromethane	4.8	U	4.8	0.83	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,2-Dibromo-3-Chloropropane	4.8	U	4.8	3.1	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,2-Dichlorobenzene	4.8	U	4.8	0.67	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,3-Dichlorobenzene	4.8	U	4.8	0.90	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,4-Dichlorobenzene	4.8	U	4.8	0.78	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Dichlorodifluoromethane	4.8	U	4.8	1.2	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,1-Dichloroethane	4.8	U	4.8	0.79	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,2-Dichloroethane	4.8	U	4.8	0.78	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,1-Dichloroethene	4.8	U	4.8	0.71	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,2-Dichloropropane	4.8	U	4.8	0.70	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Diisopropyl ether	4.8	U	4.8	0.52	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Ethylbenzene	4.8	U	4.8	0.58	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Ethylene Dibromide	4.8	U	4.8	0.46	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Ethyl tert-butyl ether	4.8	U	4.8	0.53	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
2-Hexanone	24	U	24	4.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Isopropylbenzene	4.8	U	4.8	0.65	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Methyl acetate	4.8	U	4.8	4.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Methylcyclohexane	4.8	U	4.8	0.83	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Methylene Chloride	14	U	14	9.5	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Methyl Ethyl Ketone	24	U	24	3.9	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
methyl isobutyl ketone	24	U	24	3.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Methyl tert-butyl ether	4.8	U	4.8	0.95	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Naphthalene	4.8	U	4.8	0.95	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Styrene	4.8	U	4.8	0.72	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Tert-amyl methyl ether	4.8	U	4.8	0.42	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
tert-Butyl alcohol	4.8	U	4.8	3.2	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,1,2,2-Tetrachloroethane	4.8	U	4.8	0.68	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Tetrachloroethene	4.8	U	4.8	0.80	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Toluene	4.8	U	4.8	0.67	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
trans-1,2-Dichloroethene	4.8	U	4.8	0.72	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
trans-1,3-Dichloropropene	4.8	U	4.8	0.87	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,2,4-Trichlorobenzene	4.8	U	4.8	0.69	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,1,1-Trichloroethane	4.8	U	4.8	1.0	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,1,2-Trichloroethane	4.8	U	4.8	0.87	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Trichloroethene	4.8	U	4.8	0.46	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-09 (3.5-4.5)
Date Collected: 08/22/13 11:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-8
Matrix: Solid
Percent Solids: 82.4

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	6.5		4.8	0.90	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.8	U	4.8	1.9	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Vinyl chloride	4.8	U	4.8	0.87	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1
Xylenes, Total	9.5	U	9.5	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*72 - 122*	*08/26/13 08:13*	*08/30/13 15:25*	*1*
Dibromofluoromethane	*85*		*79 - 123*	*08/26/13 08:13*	*08/30/13 15:25*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/26/13 08:13*	*08/30/13 15:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	70	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Phenol	400	U	400	41	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Isophorone	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Naphthalene	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Caprolactam	400	U	400	80	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
1,1'-Biphenyl	890	U	890	890	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2-Nitroaniline	2100	U	2100	54	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Acenaphthene	400	U	400	50	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1

Client Sample ID: SB03-09 (3.5-4.5)
Date Collected: 08/22/13 11:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-8
Matrix: Solid
Percent Solids: 82.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
4-Nitroaniline	2100	U	2100	59	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Atrazine	400	U	400	28	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Anthracene	400	U	400	30	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Carbazole	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Pyrene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Chrysene	400	U	400	25	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/26/13 14:24	08/27/13 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*71*		*46 - 130*	*08/26/13 14:24*	*08/27/13 17:01*	*1*
2-Fluorobiphenyl	*69*		*58 - 130*	*08/26/13 14:24*	*08/27/13 17:01*	*1*
Terphenyl-d14 (Surr)	*92*		*60 - 130*	*08/26/13 14:24*	*08/27/13 17:01*	*1*
Phenol-d5 (Surr)	*64*		*49 - 130*	*08/26/13 14:24*	*08/27/13 17:01*	*1*
2-Fluorophenol (Surr)	*75*		*40 - 130*	*08/26/13 14:24*	*08/27/13 17:01*	*1*
2,4,6-Tribromophenol (Surr)	*73*		*58 - 130*	*08/26/13 14:24*	*08/27/13 17:01*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	240	U	240	18	ug/Kg	☼	08/26/13 09:31	08/29/13 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*104*		*70 - 131*	*08/26/13 09:31*	*08/29/13 13:28*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**6600**		5900	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 20:44	1
ORO C24-C40	**3100**	**J B**	5900	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*78*		*50 - 150*	*08/28/13 08:56*	*08/29/13 20:44*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-10 (0.5-1.5)
Date Collected: 08/22/13 11:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-9
Matrix: Solid
Percent Solids: 58.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	21	J	50	15	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Benzene	10	U	10	0.98	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Bromodichloromethane	10	U	10	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Bromoform	10	U	10	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Bromomethane	10	U	10	2.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Carbon disulfide	10	U	10	2.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Carbon tetrachloride	10	U	10	3.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Chlorobenzene	10	U	10	1.0	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Chloroethane	10	U	10	3.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Chloroform	10	U	10	1.2	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Chloromethane	10	U	10	2.0	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
cis-1,2-Dichloroethene	10	U	10	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
cis-1,3-Dichloropropene	10	U	10	2.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Cyclohexane	10	U	10	1.9	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Dibromochloromethane	10	U	10	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,2-Dibromo-3-Chloropropane	10	U	10	6.6	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,2-Dichlorobenzene	10	U	10	1.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,3-Dichlorobenzene	10	U	10	1.9	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,4-Dichlorobenzene	10	U	10	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Dichlorodifluoromethane	10	U	10	2.6	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,1-Dichloroethane	10	U	10	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,2-Dichloroethane	10	U	10	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,1-Dichloroethene	10	U	10	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,2-Dichloropropane	10	U	10	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Diisopropyl ether	10	U	10	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Ethylbenzene	10	U	10	1.2	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Ethylene Dibromide	10	U	10	0.96	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Ethyl tert-butyl ether	10	U	10	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
2-Hexanone	50	U	50	10	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Isopropylbenzene	10	U	10	1.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Methyl acetate	10	U	10	9.2	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Methylcyclohexane	10	U	10	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Methylene Chloride	30	U	30	20	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Methyl Ethyl Ketone	50	U	50	8.2	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
methyl isobutyl ketone	50	U	50	8.0	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Methyl tert-butyl ether	10	U	10	2.0	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Naphthalene	10	U	10	2.0	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Styrene	10	U	10	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Tert-amyl methyl ether	10	U	10	0.88	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
tert-Butyl alcohol	10	U	10	6.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,1,2,2-Tetrachloroethane	10	U	10	1.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Tetrachloroethene	10	U	10	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Toluene	10	U	10	1.4	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
trans-1,2-Dichloroethene	10	U	10	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
trans-1,3-Dichloropropene	10	U	10	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,2,4-Trichlorobenzene	10	U	10	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,1,1-Trichloroethane	10	U	10	2.2	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,1,2-Trichloroethane	10	U	10	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Trichloroethene	10	U	10	0.96	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-10 (0.5-1.5)
Date Collected: 08/22/13 11:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-9
Matrix: Solid
Percent Solids: 58.9

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**11**		10	1.9	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	4.0	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Vinyl chloride	10	U	10	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1
Xylenes, Total	20	U	20	3.8	ug/Kg	☼	08/26/13 08:13	08/30/13 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*72 - 122*	*08/26/13 08:13*	*08/30/13 15:52*	*1*
Dibromofluoromethane	*88*		*79 - 123*	*08/26/13 08:13*	*08/30/13 15:52*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*	*08/26/13 08:13*	*08/30/13 15:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	560	U	560	98	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Phenol	560	U	560	58	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Bis(2-chloroethyl)ether	560	U	560	76	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2-Chlorophenol	560	U	560	68	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2-Methylphenol	560	U	560	46	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
bis (2-chloroisopropyl) ether	560	U	560	51	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Acetophenone	560	U	560	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
3 & 4 Methylphenol	560	U	560	73	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
N-Nitrosodi-n-propylamine	560	U	560	54	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Hexachloroethane	560	U	560	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Nitrobenzene	560	U	560	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Isophorone	560	U	560	56	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2-Nitrophenol	560	U	560	69	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2,4-Dimethylphenol	560	U	560	75	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Bis(2-chloroethoxy)methane	560	U	560	66	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2,4-Dichlorophenol	560	U	560	59	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Naphthalene	**180**	**J**	560	51	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
4-Chloroaniline	1100	U	1100	88	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Hexachlorobutadiene	560	U	560	61	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Caprolactam	560	U	560	110	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
4-Chloro-3-methylphenol	560	U	560	59	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2-Methylnaphthalene	**320**	**J**	560	64	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Hexachlorocyclopentadiene	560	U	560	69	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2,4,6-Trichlorophenol	560	U	560	49	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2,4,5-Trichlorophenol	560	U	560	59	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
1,1'-Biphenyl	1300	U	1300	1300	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2-Chloronaphthalene	560	U	560	59	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2-Nitroaniline	2900	U	2900	76	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Dimethyl phthalate	560	U	560	58	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2,6-Dinitrotoluene	560	U	560	71	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Acenaphthylene	560	U	560	61	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
3-Nitroaniline	2900	U	2900	78	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Acenaphthene	560	U	560	69	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2,4-Dinitrophenol	2900	U	2900	1400	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
4-Nitrophenol	2900	U	2900	560	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Dibenzofuran	**74**	**J**	560	56	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
2,4-Dinitrotoluene	560	U	560	83	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Diethyl phthalate	560	U	560	63	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1

Client Sample ID: SB03-10 (0.5-1.5)
Date Collected: 08/22/13 11:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-9
Matrix: Solid
Percent Solids: 58.9

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	560	U	560	61	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
4-Chlorophenyl phenyl ether	560	U	560	75	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
4-Nitroaniline	2900	U	2900	83	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
4,6-Dinitro-2-methylphenol	2900	U	2900	290	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
N-Nitrosodiphenylamine	560	U	560	56	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
4-Bromophenyl phenyl ether	560	U	560	61	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Hexachlorobenzene	560	U	560	66	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Atrazine	560	U	560	39	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Pentachlorophenol	2900	U	2900	560	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Phenanthrene	**260**	**J**	560	46	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Anthracene	**43**	**J**	560	42	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Carbazole	560	U	560	51	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Di-n-butyl phthalate	560	U	560	51	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Fluoranthene	**130**	**J**	560	54	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Pyrene	**110**	**J**	560	46	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Butyl benzyl phthalate	560	U	560	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
3,3'-Dichlorobenzidine	1100	U	1100	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Benzo[a]anthracene	**68**	**J**	560	46	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Chrysene	**110**	**J**	560	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Bis(2-ethylhexyl) phthalate	**280**	**J**	560	49	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Di-n-octyl phthalate	560	U	560	49	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Benzo[b]fluoranthene	560	U	560	64	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Benzo[k]fluoranthene	560	U	560	110	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Benzo[a]pyrene	560	U	560	88	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Indeno[1,2,3-cd]pyrene	560	U	560	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Dibenz(a,h)anthracene	560	U	560	66	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1
Benzo[g,h,i]perylene	560	U	560	37	ug/Kg	☼	08/26/13 14:24	08/27/13 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*65*		*46 - 130*	*08/26/13 14:24*	*08/27/13 17:25*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/26/13 14:24*	*08/27/13 17:25*	*1*
Terphenyl-d14 (Surr)	*97*		*60 - 130*	*08/26/13 14:24*	*08/27/13 17:25*	*1*
Phenol-d5 (Surr)	*60*		*49 - 130*	*08/26/13 14:24*	*08/27/13 17:25*	*1*
2-Fluorophenol (Surr)	*59*		*40 - 130*	*08/26/13 14:24*	*08/27/13 17:25*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*58 - 130*	*08/26/13 14:24*	*08/27/13 17:25*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	440	U	440	33	ug/Kg	☼	08/26/13 09:31	08/29/13 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*126*		*70 - 131*	*08/26/13 09:31*	*08/29/13 13:48*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**18000**		8200	2300	ug/Kg	☼	08/28/13 08:56	08/29/13 21:00	1
ORO C24-C40	**38000**	**B**	8200	2300	ug/Kg	☼	08/28/13 08:56	08/29/13 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*53*		*50 - 150*	*08/28/13 08:56*	*08/29/13 21:00*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-10 (5.5-6.5)
Date Collected: 08/22/13 11:40
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-10
Matrix: Solid
Percent Solids: 80.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**24**		24	6.9	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Benzene	4.7	U	4.7	0.46	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Bromodichloromethane	4.7	U	4.7	0.80	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Bromoform	4.7	U	4.7	0.60	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Bromomethane	4.7	U	4.7	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Carbon disulfide	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Carbon tetrachloride	4.7	U	4.7	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Chlorobenzene	4.7	U	4.7	0.49	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Chloroethane	4.7	U	4.7	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Chloroform	4.7	U	4.7	0.56	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Chloromethane	4.7	U	4.7	0.95	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
cis-1,2-Dichloroethene	4.7	U	4.7	0.72	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
cis-1,3-Dichloropropene	4.7	U	4.7	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Cyclohexane	4.7	U	4.7	0.89	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Dibromochloromethane	4.7	U	4.7	0.82	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,2-Dibromo-3-Chloropropane	4.7	U	4.7	3.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,2-Dichlorobenzene	4.7	U	4.7	0.67	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,3-Dichlorobenzene	4.7	U	4.7	0.90	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,4-Dichlorobenzene	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Dichlorodifluoromethane	4.7	U	4.7	1.2	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,1-Dichloroethane	4.7	U	4.7	0.79	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,2-Dichloroethane	4.7	U	4.7	0.78	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,1-Dichloroethene	4.7	U	4.7	0.71	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,2-Dichloropropane	4.7	U	4.7	0.70	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Diisopropyl ether	4.7	U	4.7	0.52	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Ethylbenzene	4.7	U	4.7	0.58	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Ethylene Dibromide	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Ethyl tert-butyl ether	4.7	U	4.7	0.53	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
2-Hexanone	24	U	24	4.7	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Isopropylbenzene	4.7	U	4.7	0.64	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Methyl acetate	4.7	U	4.7	4.4	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Methylcyclohexane	4.7	U	4.7	0.82	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Methylene Chloride	14	U	14	9.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Methyl Ethyl Ketone	**4.0**	**J**	24	3.9	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
methyl isobutyl ketone	24	U	24	3.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Methyl tert-butyl ether	4.7	U	4.7	0.95	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Naphthalene	4.7	U	4.7	0.95	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Styrene	4.7	U	4.7	0.72	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Tert-amyl methyl ether	4.7	U	4.7	0.42	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
tert-Butyl alcohol	4.7	U	4.7	3.2	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,1,2,2-Tetrachloroethane	4.7	U	4.7	0.68	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Tetrachloroethene	4.7	U	4.7	0.80	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Toluene	4.7	U	4.7	0.66	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
trans-1,2-Dichloroethene	4.7	U	4.7	0.72	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
trans-1,3-Dichloropropene	4.7	U	4.7	0.87	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,2,4-Trichlorobenzene	4.7	U	4.7	0.69	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,1,1-Trichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,1,2-Trichloroethane	4.7	U	4.7	0.87	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Trichloroethene	4.7	U	4.7	0.45	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1

Client Sample ID: SB03-10 (5.5-6.5)
Date Collected: 08/22/13 11:40
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-10
Matrix: Solid
Percent Solids: 80.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.7	U	4.7	0.90	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7	U	4.7	1.9	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Vinyl chloride	4.7	U	4.7	0.87	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1
Xylenes, Total	9.5	U	9.5	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*114*		*72 - 122*	*08/26/13 08:13*	*08/30/13 16:20*	*1*
Dibromofluoromethane	*89*		*79 - 123*	*08/26/13 08:13*	*08/30/13 16:20*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/26/13 08:13*	*08/30/13 16:20*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	410	U	410	71	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Phenol	410	U	410	42	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Bis(2-chloroethyl)ether	410	U	410	55	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2-Chlorophenol	410	U	410	49	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2-Methylphenol	410	U	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
bis (2-chloroisopropyl) ether	410	U	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Acetophenone	410	U	410	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
3 & 4 Methylphenol	410	U	410	53	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
N-Nitrosodi-n-propylamine	410	U	410	39	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Hexachloroethane	410	U	410	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Nitrobenzene	410	U	410	32	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Isophorone	410	U	410	41	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2-Nitrophenol	410	U	410	50	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2,4-Dimethylphenol	410	U	410	54	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Bis(2-chloroethoxy)methane	410	U	410	48	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2,4-Dichlorophenol	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Naphthalene	410	U	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
4-Chloroaniline	810	U	810	64	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Hexachlorobutadiene	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Caprolactam	410	U	410	81	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
4-Chloro-3-methylphenol	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2-Methylnaphthalene	410	U	410	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Hexachlorocyclopentadiene	410	U	410	50	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2,4,6-Trichlorophenol	410	U	410	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2,4,5-Trichlorophenol	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
1,1'-Biphenyl	910	U	910	910	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2-Chloronaphthalene	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Dimethyl phthalate	410	U	410	42	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2,6-Dinitrotoluene	410	U	410	52	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Acenaphthylene	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
3-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Acenaphthene	410	U	410	50	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
4-Nitrophenol	2100	U	2100	410	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Dibenzofuran	410	U	410	41	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
2,4-Dinitrotoluene	410	U	410	60	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Diethyl phthalate	410	U	410	46	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1

Client Sample ID: SB03-10 (5.5-6.5)
Date Collected: 08/22/13 11:40
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-10
Matrix: Solid
Percent Solids: 80.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
4-Chlorophenyl phenyl ether	410	U	410	54	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
N-Nitrosodiphenylamine	410	U	410	41	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
4-Bromophenyl phenyl ether	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Hexachlorobenzene	410	U	410	48	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Atrazine	410	U	410	28	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Pentachlorophenol	2100	U	2100	410	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Phenanthrene	410	U	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Anthracene	410	U	410	31	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Carbazole	410	U	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Di-n-butyl phthalate	410	U	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Fluoranthene	410	U	410	39	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Pyrene	410	U	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Butyl benzyl phthalate	410	U	410	32	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
3,3'-Dichlorobenzidine	810	U	810	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Benzo[a]anthracene	410	U	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Chrysene	410	U	410	26	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Bis(2-ethylhexyl) phthalate	410	U	410	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Di-n-octyl phthalate	410	U	410	36	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Benzo[b]fluoranthene	410	U	410	47	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Benzo[k]fluoranthene	410	U	410	80	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Benzo[a]pyrene	410	U	410	64	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Indeno[1,2,3-cd]pyrene	410	U	410	34	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Dibenz(a,h)anthracene	410	U	410	48	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1
Benzo[g,h,i]perylene	410	U	410	27	ug/Kg	☼	08/26/13 14:24	08/27/13 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*69*		*46 - 130*	*08/26/13 14:24*	*08/27/13 17:50*	*1*
2-Fluorobiphenyl	*88*		*58 - 130*	*08/26/13 14:24*	*08/27/13 17:50*	*1*
Terphenyl-d14 (Surr)	*89*		*60 - 130*	*08/26/13 14:24*	*08/27/13 17:50*	*1*
Phenol-d5 (Surr)	*78*		*49 - 130*	*08/26/13 14:24*	*08/27/13 17:50*	*1*
2-Fluorophenol (Surr)	*82*		*40 - 130*	*08/26/13 14:24*	*08/27/13 17:50*	*1*
2,4,6-Tribromophenol (Surr)	*110*		*58 - 130*	*08/26/13 14:24*	*08/27/13 17:50*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	230	U	230	18	ug/Kg	☼	08/26/13 09:31	08/29/13 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*92*		*70 - 131*	*08/26/13 09:31*	*08/29/13 14:07*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4200**	**J**	6100	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 21:16	1
ORO C24-C40	**3400**	**J B**	6100	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*50 - 150*	*08/28/13 08:56*	*08/29/13 21:16*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-05 (0.0-1.0)
Date Collected: 08/22/13 09:15
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-11
Matrix: Solid
Percent Solids: 80.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	16	J	44	13	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Benzene	8.8	U	8.8	0.87	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Bromodichloromethane	8.8	U	8.8	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Bromoform	8.8	U	8.8	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Bromomethane	8.8	U	8.8	2.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Carbon disulfide	8.8	U	8.8	2.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Carbon tetrachloride	8.8	U	8.8	3.0	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Chlorobenzene	8.8	U	8.8	0.92	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Chloroethane	8.8	U	8.8	3.4	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Chloroform	8.8	U	8.8	1.0	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Chloromethane	8.8	U	8.8	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
cis-1,2-Dichloroethene	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
cis-1,3-Dichloropropene	8.8	U	8.8	2.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Cyclohexane	8.8	U	8.8	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Dibromochloromethane	8.8	U	8.8	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,2-Dibromo-3-Chloropropane	8.8	U	8.8	5.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,2-Dichlorobenzene	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,3-Dichlorobenzene	8.8	U	8.8	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,4-Dichlorobenzene	8.8	U	8.8	1.4	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Dichlorodifluoromethane	8.8	U	8.8	2.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,1-Dichloroethane	8.8	U	8.8	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,2-Dichloroethane	8.8	U	8.8	1.4	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,1-Dichloroethene	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,2-Dichloropropane	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Diisopropyl ether	8.8	U	8.8	0.97	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Ethylbenzene	8.8	U	8.8	1.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Ethylene Dibromide	8.8	U	8.8	0.85	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Ethyl tert-butyl ether	8.8	U	8.8	0.99	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
2-Hexanone	44	U	44	8.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Isopropylbenzene	8.8	U	8.8	1.2	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Methyl acetate	8.8	U	8.8	8.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Methylcyclohexane	8.8	U	8.8	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Methylene Chloride	27	U	27	18	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Methyl Ethyl Ketone	44	U	44	7.2	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
methyl isobutyl ketone	44	U	44	7.1	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Methyl tert-butyl ether	8.8	U	8.8	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Naphthalene	8.8	U	8.8	1.8	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Styrene	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Tert-amyl methyl ether	8.8	U	8.8	0.78	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
tert-Butyl alcohol	8.8	U	8.8	6.0	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,1,2,2-Tetrachloroethane	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Tetrachloroethene	8.8	U	8.8	1.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Toluene	8.8	U	8.8	1.2	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
trans-1,2-Dichloroethene	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
trans-1,3-Dichloropropene	8.8	U	8.8	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,2,4-Trichlorobenzene	8.8	U	8.8	1.3	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,1,1-Trichloroethane	8.8	U	8.8	1.9	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,1,2-Trichloroethane	8.8	U	8.8	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Trichloroethene	8.8	U	8.8	0.85	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1

Client Sample ID: SB03-05 (0.0-1.0)
Date Collected: 08/22/13 09:15
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-11
Matrix: Solid
Percent Solids: 80.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**9.6**		8.8	1.7	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	8.8	U	8.8	3.5	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Vinyl chloride	8.8	U	8.8	1.6	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1
Xylenes, Total	18	U	18	3.4	ug/Kg	☼	08/26/13 08:13	08/30/13 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*72 - 122*	*08/26/13 08:13*	*08/30/13 16:48*	*1*
Dibromofluoromethane	*87*		*79 - 123*	*08/26/13 08:13*	*08/30/13 16:48*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*08/26/13 08:13*	*08/30/13 16:48*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	410	U	410	72	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Phenol	410	U	410	42	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Bis(2-chloroethyl)ether	410	U	410	56	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2-Chlorophenol	410	U	410	49	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2-Methylphenol	410	U	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
bis (2-chloroisopropyl) ether	410	U	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Acetophenone	410	U	410	35	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
3 & 4 Methylphenol	410	U	410	53	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
N-Nitrosodi-n-propylamine	410	U	410	40	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Hexachloroethane	410	U	410	35	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Nitrobenzene	410	U	410	32	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Isophorone	410	U	410	41	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2-Nitrophenol	410	U	410	51	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2,4-Dimethylphenol	410	U	410	54	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Bis(2-chloroethoxy)methane	410	U	410	48	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2,4-Dichlorophenol	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Naphthalene	**100**	**J**	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
4-Chloroaniline	820	U	820	64	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Hexachlorobutadiene	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Caprolactam	410	U	410	82	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
4-Chloro-3-methylphenol	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2-Methylnaphthalene	**170**	**J**	410	47	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Hexachlorocyclopentadiene	410	U	410	51	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2,4,6-Trichlorophenol	410	U	410	36	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2,4,5-Trichlorophenol	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
1,1'-Biphenyl	910	U	910	910	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2-Chloronaphthalene	410	U	410	43	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Dimethyl phthalate	410	U	410	42	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2,6-Dinitrotoluene	410	U	410	52	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Acenaphthylene	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
3-Nitroaniline	2100	U	2100	57	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Acenaphthene	410	U	410	51	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
4-Nitrophenol	2100	U	2100	410	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Dibenzofuran	410	U	410	41	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
2,4-Dinitrotoluene	410	U	410	61	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Diethyl phthalate	410	U	410	46	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1

Client Sample ID: SB03-05 (0.0-1.0)
Date Collected: 08/22/13 09:15
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-11
Matrix: Solid
Percent Solids: 80.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
4-Chlorophenyl phenyl ether	410	U	410	54	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
4-Nitroaniline	2100	U	2100	61	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
N-Nitrosodiphenylamine	410	U	410	41	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
4-Bromophenyl phenyl ether	410	U	410	44	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Hexachlorobenzene	410	U	410	48	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Atrazine	410	U	410	28	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Pentachlorophenol	2100	U	2100	410	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Phenanthrene	**99**	**J**	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Anthracene	410	U	410	31	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Carbazole	410	U	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Di-n-butyl phthalate	410	U	410	37	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Fluoranthene	410	U	410	40	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Pyrene	410	U	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Butyl benzyl phthalate	410	U	410	32	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
3,3'-Dichlorobenzidine	820	U	820	35	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Benzo[a]anthracene	410	U	410	33	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Chrysene	410	U	410	26	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Bis(2-ethylhexyl) phthalate	410	U	410	36	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Di-n-octyl phthalate	410	U	410	36	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Benzo[b]fluoranthene	410	U	410	47	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Benzo[k]fluoranthene	410	U	410	80	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Benzo[a]pyrene	410	U	410	64	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Indeno[1,2,3-cd]pyrene	410	U	410	35	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Dibenz(a,h)anthracene	410	U	410	48	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1
Benzo[g,h,i]perylene	410	U	410	27	ug/Kg	☼	08/26/13 14:24	08/27/13 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*74*		*46 - 130*	*08/26/13 14:24*	*08/27/13 18:14*	*1*
2-Fluorobiphenyl	*81*		*58 - 130*	*08/26/13 14:24*	*08/27/13 18:14*	*1*
Terphenyl-d14 (Surr)	*83*		*60 - 130*	*08/26/13 14:24*	*08/27/13 18:14*	*1*
Phenol-d5 (Surr)	*81*		*49 - 130*	*08/26/13 14:24*	*08/27/13 18:14*	*1*
2-Fluorophenol (Surr)	*73*		*40 - 130*	*08/26/13 14:24*	*08/27/13 18:14*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*58 - 130*	*08/26/13 14:24*	*08/27/13 18:14*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**310**	**J**	320	24	ug/Kg	☼	08/26/13 09:31	08/29/13 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*128*		*70 - 131*	*08/26/13 09:31*	*08/29/13 14:27*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**17000**		6000	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 21:32	1
ORO C24-C40	**15000**	**B**	6000	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*70*		*50 - 150*	*08/28/13 08:56*	*08/29/13 21:32*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-05 (3.5-4.5)
Date Collected: 08/22/13 09:25
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-12
Matrix: Solid
Percent Solids: 81.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**22**		22	6.5	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Benzene	4.5	U	4.5	0.44	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Bromodichloromethane	4.5	U	4.5	0.75	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Bromoform	4.5	U	4.5	0.57	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Bromomethane	4.5	U	4.5	1.3	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Carbon disulfide	**1.1**	**J**	4.5	1.1	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Carbon tetrachloride	4.5	U	4.5	1.5	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Chlorobenzene	4.5	U	4.5	0.47	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Chloroethane	4.5	U	4.5	1.7	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Chloroform	4.5	U	4.5	0.53	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Chloromethane	4.5	U	4.5	0.90	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
cis-1,2-Dichloroethene	4.5	U	4.5	0.68	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
cis-1,3-Dichloropropene	4.5	U	4.5	1.1	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Cyclohexane	4.5	U	4.5	0.84	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Dibromochloromethane	4.5	U	4.5	0.78	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,2-Dibromo-3-Chloropropane	4.5	U	4.5	3.0	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,2-Dichlorobenzene	4.5	U	4.5	0.64	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,3-Dichlorobenzene	4.5	U	4.5	0.85	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,4-Dichlorobenzene	4.5	U	4.5	0.74	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Dichlorodifluoromethane	4.5	U	4.5	1.2	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,1-Dichloroethane	4.5	U	4.5	0.74	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,2-Dichloroethane	4.5	U	4.5	0.74	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,1-Dichloroethene	4.5	U	4.5	0.67	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,2-Dichloropropane	4.5	U	4.5	0.66	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Diisopropyl ether	4.5	U	4.5	0.49	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Ethylbenzene	4.5	U	4.5	0.55	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Ethylene Dibromide	4.5	U	4.5	0.43	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Ethyl tert-butyl ether	4.5	U	4.5	0.50	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
2-Hexanone	22	U	22	4.5	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Isopropylbenzene	4.5	U	4.5	0.61	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Methyl acetate	4.5	U	4.5	4.1	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Methylcyclohexane	4.5	U	4.5	0.78	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Methylene Chloride	13	U	13	9.0	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Methyl Ethyl Ketone	**4.5**	**J**	22	3.7	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
methyl isobutyl ketone	22	U	22	3.6	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Methyl tert-butyl ether	4.5	U	4.5	0.90	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Naphthalene	4.5	U	4.5	0.90	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Styrene	4.5	U	4.5	0.68	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Tert-amyl methyl ether	4.5	U	4.5	0.39	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
tert-Butyl alcohol	4.5	U	4.5	3.0	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,1,2,2-Tetrachloroethane	4.5	U	4.5	0.65	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Tetrachloroethene	4.5	U	4.5	0.75	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Toluene	4.5	U	4.5	0.63	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
trans-1,2-Dichloroethene	4.5	U	4.5	0.68	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
trans-1,3-Dichloropropene	4.5	U	4.5	0.83	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,2,4-Trichlorobenzene	4.5	U	4.5	0.65	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,1,1-Trichloroethane	4.5	U	4.5	0.99	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,1,2-Trichloroethane	4.5	U	4.5	0.83	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Trichloroethene	4.5	U	4.5	0.43	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1

Client Sample ID: SB03-05 (3.5-4.5)
Date Collected: 08/22/13 09:25
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-12
Matrix: Solid
Percent Solids: 81.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	4.5	U	4.5	0.85	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.5	U	4.5	1.8	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Vinyl chloride	4.5	U	4.5	0.83	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1
Xylenes, Total	9.0	U	9.0	1.7	ug/Kg	☼	08/26/13 08:14	08/30/13 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*308*	*X*	*72 - 122*	*08/26/13 08:14*	*08/30/13 17:15*	*1*
Dibromofluoromethane	*84*		*79 - 123*	*08/26/13 08:14*	*08/30/13 17:15*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/26/13 08:14*	*08/30/13 17:15*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	400	U	400	71	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Phenol	400	U	400	42	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
bis (2-chloroisopropyl) ether	400	U	400	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Acetophenone	400	U	400	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
3 & 4 Methylphenol	400	U	400	53	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Isophorone	400	U	400	40	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2,4-Dimethylphenol	400	U	400	54	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Bis(2-chloroethoxy)methane	400	U	400	48	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Naphthalene	400	U	400	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
4-Chloroaniline	810	U	810	64	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Caprolactam	400	U	400	81	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2-Methylnaphthalene	400	U	400	47	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
1,1'-Biphenyl	910	U	910	910	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Dimethyl phthalate	400	U	400	42	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Acenaphthene	**290**	**J**	400	50	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1

Client Sample ID: SB03-05 (3.5-4.5)
Date Collected: 08/22/13 09:25
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-12
Matrix: Solid
Percent Solids: 81.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**830**		400	44	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
4-Chlorophenyl phenyl ether	400	U	400	54	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Hexachlorobenzene	400	U	400	48	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Atrazine	400	U	400	28	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Phenanthrene	400	U	400	33	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Anthracene	400	U	400	31	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Carbazole	400	U	400	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Di-n-butyl phthalate	400	U	400	37	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Fluoranthene	400	U	400	39	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Pyrene	**61**	**J**	400	33	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
3,3'-Dichlorobenzidine	810	U	810	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Chrysene	400	U	400	26	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Benzo[b]fluoranthene	400	U	400	47	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Benzo[k]fluoranthene	400	U	400	80	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Benzo[a]pyrene	400	U	400	64	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Dibenz(a,h)anthracene	400	U	400	48	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	08/30/13 14:23	09/03/13 20:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*46 - 130*	*08/30/13 14:23*	*09/03/13 20:49*	*1*
2-Fluorobiphenyl	*73*		*58 - 130*	*08/30/13 14:23*	*09/03/13 20:49*	*1*
Terphenyl-d14 (Surr)	*87*		*60 - 130*	*08/30/13 14:23*	*09/03/13 20:49*	*1*
Phenol-d5 (Surr)	*70*		*49 - 130*	*08/30/13 14:23*	*09/03/13 20:49*	*1*
2-Fluorophenol (Surr)	*88*		*40 - 130*	*08/30/13 14:23*	*09/03/13 20:49*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*58 - 130*	*08/30/13 14:23*	*09/03/13 20:49*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**52000**		10000	780	ug/Kg	☼	08/26/13 09:31	08/30/13 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*41*	*X*	*70 - 131*	*08/26/13 09:31*	*08/30/13 13:44*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**47000**		6000	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 21:48	1
ORO C24-C40	**3500**	**J B**	6000	1700	ug/Kg	☼	08/28/13 08:56	08/29/13 21:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*77*		*50 - 150*	*08/28/13 08:56*	*08/29/13 21:48*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: PZ02-08
Date Collected: 08/22/13 14:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/30/13 00:46	1
Benzene	1.0	U	1.0	0.34	ug/L			08/30/13 00:46	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/30/13 00:46	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/30/13 00:46	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/30/13 00:46	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/30/13 00:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 00:46	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/30/13 00:46	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/30/13 00:46	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/30/13 00:46	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/30/13 00:46	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/30/13 00:46	1
2-Hexanone	25	U	25	3.1	ug/L			08/30/13 00:46	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/30/13 00:46	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/30/13 00:46	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/30/13 00:46	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/30/13 00:46	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/30/13 00:46	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/30/13 00:46	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/30/13 00:46	1
Styrene	1.0	U	1.0	1.0	ug/L			08/30/13 00:46	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/30/13 00:46	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/30/13 00:46	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/30/13 00:46	1
Toluene	1.0	U	1.0	0.70	ug/L			08/30/13 00:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 00:46	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/30/13 00:46	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/30/13 00:46	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/30/13 00:46	1

Client Sample ID: PZ02-08
Date Collected: 08/22/13 14:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/30/13 00:46	1
Xylenes, Total	10	U	10	1.6	ug/L			08/30/13 00:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*08/30/13 00:46*	*1*
Dibromofluoromethane	*104*		*81 - 121*		*08/30/13 00:46*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/30/13 00:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10	0.76	ug/L		08/27/13 14:50	09/04/13 12:38	1
Acenaphthylene	10	U	10	0.85	ug/L		08/27/13 14:50	09/04/13 12:38	1
Acetophenone	10	U	10	0.57	ug/L		08/27/13 14:50	09/04/13 12:38	1
Anthracene	10	U	10	0.69	ug/L		08/27/13 14:50	09/04/13 12:38	1
Atrazine	10	U	10	1.2	ug/L		08/27/13 14:50	09/04/13 12:38	1
Benzaldehyde	10	U	10	1.1	ug/L		08/27/13 14:50	09/04/13 12:38	1
Benzo[a]anthracene	10	U	10	0.55	ug/L		08/27/13 14:50	09/04/13 12:38	1
Benzo[a]pyrene	10	U	10	0.71	ug/L		08/27/13 14:50	09/04/13 12:38	1
Benzo[b]fluoranthene	10	U	10	2.6	ug/L		08/27/13 14:50	09/04/13 12:38	1
Benzo[g,h,i]perylene	10	U	10	0.87	ug/L		08/27/13 14:50	09/04/13 12:38	1
Benzo[k]fluoranthene	10	U	10	1.2	ug/L		08/27/13 14:50	09/04/13 12:38	1
1,1'-Biphenyl	10	U	10	0.58	ug/L		08/27/13 14:50	09/04/13 12:38	1
Bis(2-chloroethoxy)methane	10	U	10	0.94	ug/L		08/27/13 14:50	09/04/13 12:38	1
Bis(2-chloroethyl)ether	10	U	10	1.1	ug/L		08/27/13 14:50	09/04/13 12:38	1
bis (2-chloroisopropyl) ether	10	U	10	0.78	ug/L		08/27/13 14:50	09/04/13 12:38	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.6	ug/L		08/27/13 14:50	09/04/13 12:38	1
4-Bromophenyl phenyl ether	10	U	10	0.77	ug/L		08/27/13 14:50	09/04/13 12:38	1
Butyl benzyl phthalate	10	U	10	1.2	ug/L		08/27/13 14:50	09/04/13 12:38	1
Caprolactam	**6.1**	**J**	10	0.79	ug/L		08/27/13 14:50	09/04/13 12:38	1
Carbazole	10	U	10	0.71	ug/L		08/27/13 14:50	09/04/13 12:38	1
4-Chloroaniline	20	U	20	2.2	ug/L		08/27/13 14:50	09/04/13 12:38	1
4-Chloro-3-methylphenol	10	U	10	1.0	ug/L		08/27/13 14:50	09/04/13 12:38	1
2-Chloronaphthalene	10	U	10	0.80	ug/L		08/27/13 14:50	09/04/13 12:38	1
2-Chlorophenol	10	U	10	0.87	ug/L		08/27/13 14:50	09/04/13 12:38	1
4-Chlorophenyl phenyl ether	10	U	10	0.84	ug/L		08/27/13 14:50	09/04/13 12:38	1
Chrysene	10	U	10	0.51	ug/L		08/27/13 14:50	09/04/13 12:38	1
Dibenz(a,h)anthracene	10	U	10	1.0	ug/L		08/27/13 14:50	09/04/13 12:38	1
Dibenzofuran	10	U	10	0.79	ug/L		08/27/13 14:50	09/04/13 12:38	1
3,3'-Dichlorobenzidine	60	U	60	30	ug/L		08/27/13 14:50	09/04/13 12:38	1
2,4-Dichlorophenol	10	U	10	1.1	ug/L		08/27/13 14:50	09/04/13 12:38	1
Diethyl phthalate	10	U	10	0.88	ug/L		08/27/13 14:50	09/04/13 12:38	1
2,4-Dimethylphenol	10	U	10	4.0	ug/L		08/27/13 14:50	09/04/13 12:38	1
Dimethyl phthalate	10	U	10	0.99	ug/L		08/27/13 14:50	09/04/13 12:38	1
Di-n-butyl phthalate	10	U	10	0.83	ug/L		08/27/13 14:50	09/04/13 12:38	1
4,6-Dinitro-2-methylphenol	50	U	50	10	ug/L		08/27/13 14:50	09/04/13 12:38	1
2,4-Dinitrophenol	50	U	50	10	ug/L		08/27/13 14:50	09/04/13 12:38	1
2,4-Dinitrotoluene	10	U	10	1.2	ug/L		08/27/13 14:50	09/04/13 12:38	1
2,6-Dinitrotoluene	10	U	10	1.1	ug/L		08/27/13 14:50	09/04/13 12:38	1
Di-n-octyl phthalate	10	U	10	1.4	ug/L		08/27/13 14:50	09/04/13 12:38	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: PZ02-08
Date Collected: 08/22/13 14:00
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-13
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	10	U	10	0.74	ug/L		08/27/13 14:50	09/04/13 12:38	1
Fluorene	10	U	10	0.96	ug/L		08/27/13 14:50	09/04/13 12:38	1
Hexachlorobenzene	10	U	10	0.79	ug/L		08/27/13 14:50	09/04/13 12:38	1
Hexachlorobutadiene	10	U	10	0.62	ug/L		08/27/13 14:50	09/04/13 12:38	1
Hexachlorocyclopentadiene	10	U	10	2.5	ug/L		08/27/13 14:50	09/04/13 12:38	1
Hexachloroethane	10	U	10	0.76	ug/L		08/27/13 14:50	09/04/13 12:38	1
Indeno[1,2,3-cd]pyrene	10	U	10	1.0	ug/L		08/27/13 14:50	09/04/13 12:38	1
Isophorone	10	U	10	0.90	ug/L		08/27/13 14:50	09/04/13 12:38	1
2-Methylnaphthalene	10	U	10	0.78	ug/L		08/27/13 14:50	09/04/13 12:38	1
2-Methylphenol	10	U	10	0.89	ug/L		08/27/13 14:50	09/04/13 12:38	1
3 & 4 Methylphenol	10	U	10	1.3	ug/L		08/27/13 14:50	09/04/13 12:38	1
Naphthalene	10	U	10	0.70	ug/L		08/27/13 14:50	09/04/13 12:38	1
2-Nitroaniline	50	U	50	1.3	ug/L		08/27/13 14:50	09/04/13 12:38	1
3-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/04/13 12:38	1
4-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/04/13 12:38	1
Nitrobenzene	10	U	10	0.73	ug/L		08/27/13 14:50	09/04/13 12:38	1
2-Nitrophenol	10	U	10	0.76	ug/L		08/27/13 14:50	09/04/13 12:38	1
4-Nitrophenol	50	U	50	1.9	ug/L		08/27/13 14:50	09/04/13 12:38	1
N-Nitrosodi-n-propylamine	10	U	10	0.72	ug/L		08/27/13 14:50	09/04/13 12:38	1
N-Nitrosodiphenylamine	10	U	10	0.92	ug/L		08/27/13 14:50	09/04/13 12:38	1
Pentachlorophenol	50	U	50	2.0	ug/L		08/27/13 14:50	09/04/13 12:38	1
Phenanthrene	10	U	10	0.77	ug/L		08/27/13 14:50	09/04/13 12:38	1
Phenol	10	U	10	0.83	ug/L		08/27/13 14:50	09/04/13 12:38	1
Pyrene	10	U	10	0.63	ug/L		08/27/13 14:50	09/04/13 12:38	1
2,4,5-Trichlorophenol	10	U	10	1.2	ug/L		08/27/13 14:50	09/04/13 12:38	1
2,4,6-Trichlorophenol	10	U	10	0.85	ug/L		08/27/13 14:50	09/04/13 12:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*38 - 130*	*08/27/13 14:50*	*09/04/13 12:38*	*1*
2-Fluorophenol (Surr)	*66*		*25 - 130*	*08/27/13 14:50*	*09/04/13 12:38*	*1*
Nitrobenzene-d5 (Surr)	*61*		*39 - 130*	*08/27/13 14:50*	*09/04/13 12:38*	*1*
Phenol-d5 (Surr)	*55*		*25 - 130*	*08/27/13 14:50*	*09/04/13 12:38*	*1*
Terphenyl-d14 (Surr)	*33*		*10 - 143*	*08/27/13 14:50*	*09/04/13 12:38*	*1*
2,4,6-Tribromophenol (Surr)	*55*		*31 - 141*	*08/27/13 14:50*	*09/04/13 12:38*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**13**	**J B**	50	11	ug/L			08/28/13 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*91*		*70 - 130*		*08/28/13 13:25*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**340**	**B**	97	27	ug/L		08/28/13 07:23	08/28/13 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*72*		*50 - 150*	*08/28/13 07:23*	*08/28/13 18:12*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: PZ03-04
Date Collected: 08/22/13 12:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-14
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	16	J	25	3.5	ug/L			08/30/13 01:12	1
Benzene	1.0	U	1.0	0.34	ug/L			08/30/13 01:12	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/30/13 01:12	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/30/13 01:12	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/30/13 01:12	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/30/13 01:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 01:12	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/30/13 01:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/30/13 01:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/30/13 01:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/30/13 01:12	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/30/13 01:12	1
2-Hexanone	25	U	25	3.1	ug/L			08/30/13 01:12	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/30/13 01:12	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/30/13 01:12	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/30/13 01:12	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/30/13 01:12	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/30/13 01:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/30/13 01:12	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/30/13 01:12	1
Styrene	1.0	U	1.0	1.0	ug/L			08/30/13 01:12	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/30/13 01:12	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/30/13 01:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/30/13 01:12	1
Toluene	1.0	U	1.0	0.70	ug/L			08/30/13 01:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 01:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/30/13 01:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/30/13 01:12	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/30/13 01:12	1

Client Sample ID: PZ03-04
Date Collected: 08/22/13 12:30
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-14
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/30/13 01:12	1
Xylenes, Total	10	U	10	1.6	ug/L			08/30/13 01:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/30/13 01:12*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*08/30/13 01:12*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/30/13 01:12*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	62	B	50	11	ug/L			08/28/13 13:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*88*		*70 - 130*		*08/28/13 13:50*	*1*

Client Sample ID: PZ03-08
Date Collected: 08/22/13 13:08
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-15
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/30/13 01:37	1
Benzene	1.0	U	1.0	0.34	ug/L			08/30/13 01:37	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/30/13 01:37	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/30/13 01:37	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/30/13 01:37	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/30/13 01:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 01:37	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/30/13 01:37	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/30/13 01:37	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/30/13 01:37	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/30/13 01:37	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/30/13 01:37	1
2-Hexanone	25	U	25	3.1	ug/L			08/30/13 01:37	1

Client Sample ID: PZ03-08
Date Collected: 08/22/13 13:08
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-15
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/30/13 01:37	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/30/13 01:37	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/30/13 01:37	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/30/13 01:37	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/30/13 01:37	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/30/13 01:37	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/30/13 01:37	1
Styrene	1.0	U	1.0	1.0	ug/L			08/30/13 01:37	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/30/13 01:37	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/30/13 01:37	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/30/13 01:37	1
Toluene	1.0	U	1.0	0.70	ug/L			08/30/13 01:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 01:37	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/30/13 01:37	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/30/13 01:37	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/30/13 01:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/30/13 01:37	1
Xylenes, Total	10	U	10	1.6	ug/L			08/30/13 01:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*78 - 118*		*08/30/13 01:37*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*08/30/13 01:37*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/30/13 01:37*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.8**	**J**	9.9	0.75	ug/L		08/27/13 14:50	09/04/13 13:04	1
Acenaphthylene	9.9	U	9.9	0.84	ug/L		08/27/13 14:50	09/04/13 13:04	1
Acetophenone	9.9	U	9.9	0.57	ug/L		08/27/13 14:50	09/04/13 13:04	1
Anthracene	9.9	U	9.9	0.69	ug/L		08/27/13 14:50	09/04/13 13:04	1
Atrazine	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/04/13 13:04	1
Benzaldehyde	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/04/13 13:04	1
Benzo[a]anthracene	9.9	U	9.9	0.55	ug/L		08/27/13 14:50	09/04/13 13:04	1
Benzo[a]pyrene	9.9	U	9.9	0.71	ug/L		08/27/13 14:50	09/04/13 13:04	1
Benzo[b]fluoranthene	9.9	U	9.9	2.6	ug/L		08/27/13 14:50	09/04/13 13:04	1
Benzo[g,h,i]perylene	9.9	U	9.9	0.86	ug/L		08/27/13 14:50	09/04/13 13:04	1
Benzo[k]fluoranthene	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/04/13 13:04	1
1,1'-Biphenyl	9.9	U	9.9	0.58	ug/L		08/27/13 14:50	09/04/13 13:04	1
Bis(2-chloroethoxy)methane	9.9	U	9.9	0.93	ug/L		08/27/13 14:50	09/04/13 13:04	1
Bis(2-chloroethyl)ether	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/04/13 13:04	1
bis (2-chloroisopropyl) ether	9.9	U	9.9	0.77	ug/L		08/27/13 14:50	09/04/13 13:04	1
Bis(2-ethylhexyl) phthalate	9.9	U	9.9	1.6	ug/L		08/27/13 14:50	09/04/13 13:04	1
4-Bromophenyl phenyl ether	9.9	U	9.9	0.76	ug/L		08/27/13 14:50	09/04/13 13:04	1
Butyl benzyl phthalate	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/04/13 13:04	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: PZ03-08
Date Collected: 08/22/13 13:08
Date Received: 08/23/13 09:28

Lab Sample ID: 680-93550-15
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	9.9	U	9.9	0.78	ug/L		08/27/13 14:50	09/04/13 13:04	1
Carbazole	9.9	U	9.9	0.71	ug/L		08/27/13 14:50	09/04/13 13:04	1
4-Chloroaniline	20	U	20	2.2	ug/L		08/27/13 14:50	09/04/13 13:04	1
4-Chloro-3-methylphenol	9.9	U	9.9	0.99	ug/L		08/27/13 14:50	09/04/13 13:04	1
2-Chloronaphthalene	9.9	U	9.9	0.79	ug/L		08/27/13 14:50	09/04/13 13:04	1
2-Chlorophenol	9.9	U	9.9	0.86	ug/L		08/27/13 14:50	09/04/13 13:04	1
4-Chlorophenyl phenyl ether	9.9	U	9.9	0.83	ug/L		08/27/13 14:50	09/04/13 13:04	1
Chrysene	9.9	U	9.9	0.51	ug/L		08/27/13 14:50	09/04/13 13:04	1
Dibenz(a,h)anthracene	9.9	U	9.9	0.99	ug/L		08/27/13 14:50	09/04/13 13:04	1
Dibenzofuran	9.9	U	9.9	0.78	ug/L		08/27/13 14:50	09/04/13 13:04	1
3,3'-Dichlorobenzidine	60	U	60	30	ug/L		08/27/13 14:50	09/04/13 13:04	1
2,4-Dichlorophenol	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/04/13 13:04	1
Diethyl phthalate	9.9	U	9.9	0.87	ug/L		08/27/13 14:50	09/04/13 13:04	1
2,4-Dimethylphenol	9.9	U	9.9	4.0	ug/L		08/27/13 14:50	09/04/13 13:04	1
Dimethyl phthalate	9.9	U	9.9	0.98	ug/L		08/27/13 14:50	09/04/13 13:04	1
Di-n-butyl phthalate	9.9	U	9.9	0.82	ug/L		08/27/13 14:50	09/04/13 13:04	1
4,6-Dinitro-2-methylphenol	50	U	50	9.9	ug/L		08/27/13 14:50	09/04/13 13:04	1
2,4-Dinitrophenol	50	U	50	9.9	ug/L		08/27/13 14:50	09/04/13 13:04	1
2,4-Dinitrotoluene	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/04/13 13:04	1
2,6-Dinitrotoluene	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/04/13 13:04	1
Di-n-octyl phthalate	9.9	U	9.9	1.4	ug/L		08/27/13 14:50	09/04/13 13:04	1
Fluoranthene	9.9	U	9.9	0.74	ug/L		08/27/13 14:50	09/04/13 13:04	1
Fluorene	**6.6**	**J**	9.9	0.95	ug/L		08/27/13 14:50	09/04/13 13:04	1
Hexachlorobenzene	9.9	U	9.9	0.78	ug/L		08/27/13 14:50	09/04/13 13:04	1
Hexachlorobutadiene	9.9	U	9.9	0.62	ug/L		08/27/13 14:50	09/04/13 13:04	1
Hexachlorocyclopentadiene	9.9	U	9.9	2.5	ug/L		08/27/13 14:50	09/04/13 13:04	1
Hexachloroethane	9.9	U	9.9	0.75	ug/L		08/27/13 14:50	09/04/13 13:04	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9	0.99	ug/L		08/27/13 14:50	09/04/13 13:04	1
Isophorone	9.9	U	9.9	0.89	ug/L		08/27/13 14:50	09/04/13 13:04	1
2-Methylnaphthalene	9.9	U	9.9	0.77	ug/L		08/27/13 14:50	09/04/13 13:04	1
2-Methylphenol	9.9	U	9.9	0.88	ug/L		08/27/13 14:50	09/04/13 13:04	1
3 & 4 Methylphenol	9.9	U	9.9	1.3	ug/L		08/27/13 14:50	09/04/13 13:04	1
Naphthalene	9.9	U	9.9	0.70	ug/L		08/27/13 14:50	09/04/13 13:04	1
2-Nitroaniline	50	U	50	1.3	ug/L		08/27/13 14:50	09/04/13 13:04	1
3-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/04/13 13:04	1
4-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/04/13 13:04	1
Nitrobenzene	9.9	U	9.9	0.73	ug/L		08/27/13 14:50	09/04/13 13:04	1
2-Nitrophenol	9.9	U	9.9	0.75	ug/L		08/27/13 14:50	09/04/13 13:04	1
4-Nitrophenol	50	U	50	1.9	ug/L		08/27/13 14:50	09/04/13 13:04	1
N-Nitrosodi-n-propylamine	9.9	U	9.9	0.72	ug/L		08/27/13 14:50	09/04/13 13:04	1
N-Nitrosodiphenylamine	9.9	U	9.9	0.91	ug/L		08/27/13 14:50	09/04/13 13:04	1
Pentachlorophenol	50	U	50	2.0	ug/L		08/27/13 14:50	09/04/13 13:04	1
Phenanthrene	9.9	U	9.9	0.76	ug/L		08/27/13 14:50	09/04/13 13:04	1
Phenol	9.9	U	9.9	0.82	ug/L		08/27/13 14:50	09/04/13 13:04	1
Pyrene	9.9	U	9.9	0.63	ug/L		08/27/13 14:50	09/04/13 13:04	1
2,4,5-Trichlorophenol	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/04/13 13:04	1
2,4,6-Trichlorophenol	9.9	U	9.9	0.84	ug/L		08/27/13 14:50	09/04/13 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*64*		*38 - 130*	*08/27/13 14:50*	*09/04/13 13:04*	*1*

Client Sample ID: PZ03-08

Lab Sample ID: 680-93550-15

Date Collected: 08/22/13 13:08

Matrix: Water

Date Received: 08/23/13 09:28

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	81		25 - 130	08/27/13 14:50	09/04/13 13:04	1
Nitrobenzene-d5 (Surr)	69		39 - 130	08/27/13 14:50	09/04/13 13:04	1
Phenol-d5 (Surr)	65		25 - 130	08/27/13 14:50	09/04/13 13:04	1
Terphenyl-d14 (Surr)	54		10 - 143	08/27/13 14:50	09/04/13 13:04	1
2,4,6-Tribromophenol (Surr)	106		31 - 141	08/27/13 14:50	09/04/13 13:04	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	79	B	50	11	ug/L			08/28/13 14:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	85		70 - 130		08/28/13 14:16	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	11000		970	270	ug/L		08/30/13 15:58	09/01/13 11:22	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	144		50 - 150	08/30/13 15:58	09/01/13 11:22	10

Client Sample ID: TB01 (082213)

Lab Sample ID: 680-93550-16

Date Collected: 08/22/13 00:00

Matrix: Water

Date Received: 08/23/13 09:28

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/30/13 02:03	1
Benzene	1.0	U	1.0	0.34	ug/L			08/30/13 02:03	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/30/13 02:03	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/30/13 02:03	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/30/13 02:03	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/30/13 02:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 02:03	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/30/13 02:03	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/30/13 02:03	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/30/13 02:03	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/30/13 02:03	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1

Client Sample ID: TB01 (082213)

Lab Sample ID: 680-93550-16

Date Collected: 08/22/13 00:00

Matrix: Water

Date Received: 08/23/13 09:28

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/30/13 02:03	1
2-Hexanone	25	U	25	3.1	ug/L			08/30/13 02:03	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/30/13 02:03	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/30/13 02:03	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/30/13 02:03	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/30/13 02:03	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/30/13 02:03	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/30/13 02:03	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/30/13 02:03	1
Styrene	1.0	U	1.0	1.0	ug/L			08/30/13 02:03	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/30/13 02:03	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/30/13 02:03	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/30/13 02:03	1
Toluene	1.0	U	1.0	0.70	ug/L			08/30/13 02:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/30/13 02:03	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/30/13 02:03	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/30/13 02:03	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/30/13 02:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/30/13 02:03	1
Xylenes, Total	10	U	10	1.6	ug/L			08/30/13 02:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*08/30/13 02:03*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*08/30/13 02:03*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/30/13 02:03*	*1*

Client Sample ID: PZ02-08 (DRO-SGT)

Lab Sample ID: 680-93550-17

Date Collected: 08/22/13 14:00

Matrix: Water

Date Received: 08/23/13 09:28

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**310**	**B**	97	27	ug/L		08/28/13 07:23	08/28/13 18:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*81*		*50 - 150*	*08/28/13 07:23*	*08/28/13 18:44*	*1*

Client Sample ID: PZ03-08 (DRO-SGT)

Lab Sample ID: 680-93550-19

Date Collected: 08/22/13 13:08

Matrix: Water

Date Received: 08/23/13 09:28

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	8000		490	140	ug/L		08/30/13 15:58	09/01/13 11:37	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*135*		*50 - 150*	*08/30/13 15:58*	*09/01/13 11:37*	*5*

Client Sample ID: PZ03-04

Lab Sample ID: 680-93588-1

Date Collected: 08/22/13 12:30

Matrix: Water

Date Received: 08/24/13 08:38

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	2.4	J	9.9	0.75	ug/L		08/27/13 14:50	09/03/13 19:06	1
Acenaphthylene	9.9	U	9.9	0.84	ug/L		08/27/13 14:50	09/03/13 19:06	1
Acetophenone	9.9	U	9.9	0.57	ug/L		08/27/13 14:50	09/03/13 19:06	1
Anthracene	9.9	U	9.9	0.68	ug/L		08/27/13 14:50	09/03/13 19:06	1
Atrazine	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/03/13 19:06	1
Benzaldehyde	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/03/13 19:06	1
Benzo[a]anthracene	9.9	U	9.9	0.55	ug/L		08/27/13 14:50	09/03/13 19:06	1
Benzo[a]pyrene	9.9	U	9.9	0.70	ug/L		08/27/13 14:50	09/03/13 19:06	1
Benzo[b]fluoranthene	9.9	U	9.9	2.6	ug/L		08/27/13 14:50	09/03/13 19:06	1
Benzo[g,h,i]perylene	9.9	U	9.9	0.86	ug/L		08/27/13 14:50	09/03/13 19:06	1
Benzo[k]fluoranthene	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/03/13 19:06	1
1,1'-Biphenyl	9.9	U	9.9	0.57	ug/L		08/27/13 14:50	09/03/13 19:06	1
Bis(2-chloroethoxy)methane	9.9	U	9.9	0.93	ug/L		08/27/13 14:50	09/03/13 19:06	1
Bis(2-chloroethyl)ether	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/03/13 19:06	1
bis (2-chloroisopropyl) ether	9.9	U	9.9	0.77	ug/L		08/27/13 14:50	09/03/13 19:06	1
Bis(2-ethylhexyl) phthalate	9.9	U	9.9	1.6	ug/L		08/27/13 14:50	09/03/13 19:06	1
4-Bromophenyl phenyl ether	9.9	U	9.9	0.76	ug/L		08/27/13 14:50	09/03/13 19:06	1
Butyl benzyl phthalate	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/03/13 19:06	1
Caprolactam	9.9	U	9.9	0.78	ug/L		08/27/13 14:50	09/03/13 19:06	1
Carbazole	9.9	U	9.9	0.70	ug/L		08/27/13 14:50	09/03/13 19:06	1
4-Chloroaniline	20	U	20	2.2	ug/L		08/27/13 14:50	09/03/13 19:06	1
4-Chloro-3-methylphenol	9.9	U	9.9	0.99	ug/L		08/27/13 14:50	09/03/13 19:06	1
2-Chloronaphthalene	9.9	U	9.9	0.79	ug/L		08/27/13 14:50	09/03/13 19:06	1
2-Chlorophenol	9.9	U	9.9	0.86	ug/L		08/27/13 14:50	09/03/13 19:06	1
4-Chlorophenyl phenyl ether	9.9	U	9.9	0.83	ug/L		08/27/13 14:50	09/03/13 19:06	1
Chrysene	9.9	U	9.9	0.51	ug/L		08/27/13 14:50	09/03/13 19:06	1
Dibenz(a,h)anthracene	9.9	U	9.9	0.99	ug/L		08/27/13 14:50	09/03/13 19:06	1
Dibenzofuran	9.9	U	9.9	0.78	ug/L		08/27/13 14:50	09/03/13 19:06	1
3,3'-Dichlorobenzidine	59	U	59	30	ug/L		08/27/13 14:50	09/03/13 19:06	1
2,4-Dichlorophenol	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/03/13 19:06	1
Diethyl phthalate	9.9	U	9.9	0.87	ug/L		08/27/13 14:50	09/03/13 19:06	1
2,4-Dimethylphenol	9.9	U	9.9	4.0	ug/L		08/27/13 14:50	09/03/13 19:06	1
Dimethyl phthalate	9.9	U	9.9	0.98	ug/L		08/27/13 14:50	09/03/13 19:06	1
Di-n-butyl phthalate	9.9	U	9.9	0.82	ug/L		08/27/13 14:50	09/03/13 19:06	1
4,6-Dinitro-2-methylphenol	50	U	50	9.9	ug/L		08/27/13 14:50	09/03/13 19:06	1
2,4-Dinitrophenol	50	U	50	9.9	ug/L		08/27/13 14:50	09/03/13 19:06	1
2,4-Dinitrotoluene	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/03/13 19:06	1
2,6-Dinitrotoluene	9.9	U	9.9	1.1	ug/L		08/27/13 14:50	09/03/13 19:06	1
Di-n-octyl phthalate	9.9	U	9.9	1.4	ug/L		08/27/13 14:50	09/03/13 19:06	1

Client Sample ID: PZ03-04
Date Collected: 08/22/13 12:30
Date Received: 08/24/13 08:38

Lab Sample ID: 680-93588-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	9.9	U	9.9	0.73	ug/L		08/27/13 14:50	09/03/13 19:06	1
Fluorene	**3.9**	**J**	9.9	0.95	ug/L		08/27/13 14:50	09/03/13 19:06	1
Hexachlorobenzene	9.9	U	9.9	0.78	ug/L		08/27/13 14:50	09/03/13 19:06	1
Hexachlorobutadiene	9.9	U	9.9	0.61	ug/L		08/27/13 14:50	09/03/13 19:06	1
Hexachlorocyclopentadiene	9.9	U	9.9	2.5	ug/L		08/27/13 14:50	09/03/13 19:06	1
Hexachloroethane	9.9	U	9.9	0.75	ug/L		08/27/13 14:50	09/03/13 19:06	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9	0.99	ug/L		08/27/13 14:50	09/03/13 19:06	1
Isophorone	9.9	U	9.9	0.89	ug/L		08/27/13 14:50	09/03/13 19:06	1
2-Methylnaphthalene	**1.8**	**J**	9.9	0.77	ug/L		08/27/13 14:50	09/03/13 19:06	1
2-Methylphenol	9.9	U	9.9	0.88	ug/L		08/27/13 14:50	09/03/13 19:06	1
3 & 4 Methylphenol	9.9	U	9.9	1.3	ug/L		08/27/13 14:50	09/03/13 19:06	1
Naphthalene	**1.2**	**J**	9.9	0.69	ug/L		08/27/13 14:50	09/03/13 19:06	1
2-Nitroaniline	50	U	50	1.3	ug/L		08/27/13 14:50	09/03/13 19:06	1
3-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/03/13 19:06	1
4-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/03/13 19:06	1
Nitrobenzene	9.9	U	9.9	0.72	ug/L		08/27/13 14:50	09/03/13 19:06	1
2-Nitrophenol	9.9	U	9.9	0.75	ug/L		08/27/13 14:50	09/03/13 19:06	1
4-Nitrophenol	50	U	50	1.9	ug/L		08/27/13 14:50	09/03/13 19:06	1
N-Nitrosodi-n-propylamine	9.9	U	9.9	0.71	ug/L		08/27/13 14:50	09/03/13 19:06	1
N-Nitrosodiphenylamine	9.9	U	9.9	0.91	ug/L		08/27/13 14:50	09/03/13 19:06	1
Pentachlorophenol	50	U	50	2.0	ug/L		08/27/13 14:50	09/03/13 19:06	1
Phenanthrene	**1.0**	**J**	9.9	0.76	ug/L		08/27/13 14:50	09/03/13 19:06	1
Phenol	9.9	U	9.9	0.82	ug/L		08/27/13 14:50	09/03/13 19:06	1
Pyrene	9.9	U	9.9	0.62	ug/L		08/27/13 14:50	09/03/13 19:06	1
2,4,5-Trichlorophenol	9.9	U	9.9	1.2	ug/L		08/27/13 14:50	09/03/13 19:06	1
2,4,6-Trichlorophenol	9.9	U	9.9	0.84	ug/L		08/27/13 14:50	09/03/13 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*38 - 130*	*08/27/13 14:50*	*09/03/13 19:06*	*1*
2-Fluorophenol (Surr)	*71*		*25 - 130*	*08/27/13 14:50*	*09/03/13 19:06*	*1*
Nitrobenzene-d5 (Surr)	*64*		*39 - 130*	*08/27/13 14:50*	*09/03/13 19:06*	*1*
Phenol-d5 (Surr)	*62*		*25 - 130*	*08/27/13 14:50*	*09/03/13 19:06*	*1*
Terphenyl-d14 (Surr)	*41*		*10 - 143*	*08/27/13 14:50*	*09/03/13 19:06*	*1*
2,4,6-Tribromophenol (Surr)	*110*		*31 - 141*	*08/27/13 14:50*	*09/03/13 19:06*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**28000**	**B**	2400	680	ug/L		08/28/13 07:23	08/29/13 11:20	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*202*	*X*	*50 - 150*	*08/28/13 07:23*	*08/29/13 11:20*	*25*

Client Sample ID: PZ03-04 (DRO-SGT)
Date Collected: 08/22/13 12:30
Date Received: 08/24/13 08:38

Lab Sample ID: 680-93588-2
Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**27000**	**B**	2400	680	ug/L		08/28/13 12:47	08/29/13 11:36	25

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: PZ03-04 (DRO-SGT)
Date Collected: 08/22/13 12:30
Date Received: 08/24/13 08:38

Lab Sample ID: 680-93588-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	206	X	50 - 150	08/28/13 12:47	08/29/13 11:36	25

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-190016/4
Matrix: Solid
Analysis Batch: 190016

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg			08/28/13 10:04	1
Benzene	5.0	U	5.0	0.49	ug/Kg			08/28/13 10:04	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg			08/28/13 10:04	1
Bromoform	5.0	U	5.0	0.63	ug/Kg			08/28/13 10:04	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg			08/28/13 10:04	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg			08/28/13 10:04	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg			08/28/13 10:04	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg			08/28/13 10:04	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg			08/28/13 10:04	1
Chloroform	5.0	U	5.0	0.59	ug/Kg			08/28/13 10:04	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			08/28/13 10:04	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/28/13 10:04	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg			08/28/13 10:04	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg			08/28/13 10:04	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg			08/28/13 10:04	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg			08/28/13 10:04	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg			08/28/13 10:04	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg			08/28/13 10:04	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg			08/28/13 10:04	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg			08/28/13 10:04	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg			08/28/13 10:04	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg			08/28/13 10:04	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg			08/28/13 10:04	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg			08/28/13 10:04	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg			08/28/13 10:04	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg			08/28/13 10:04	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg			08/28/13 10:04	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg			08/28/13 10:04	1
2-Hexanone	25	U	25	5.0	ug/Kg			08/28/13 10:04	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg			08/28/13 10:04	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg			08/28/13 10:04	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg			08/28/13 10:04	1
Methylene Chloride	15	U	15	10	ug/Kg			08/28/13 10:04	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg			08/28/13 10:04	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg			08/28/13 10:04	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			08/28/13 10:04	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg			08/28/13 10:04	1
Styrene	5.0	U	5.0	0.76	ug/Kg			08/28/13 10:04	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg			08/28/13 10:04	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg			08/28/13 10:04	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg			08/28/13 10:04	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg			08/28/13 10:04	1
Toluene	5.0	U	5.0	0.70	ug/Kg			08/28/13 10:04	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/28/13 10:04	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg			08/28/13 10:04	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg			08/28/13 10:04	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg			08/28/13 10:04	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg			08/28/13 10:04	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190016/4
Matrix: Solid
Analysis Batch: 190016

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	5.0	U	5.0	0.48	ug/Kg			08/28/13 10:04	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg			08/28/13 10:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg			08/28/13 10:04	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg			08/28/13 10:04	1
Xylenes, Total	10	U	10	1.9	ug/Kg			08/28/13 10:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*83*		*72 - 122*		*08/28/13 10:04*	*1*
Dibromofluoromethane	*98*		*79 - 123*		*08/28/13 10:04*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*08/28/13 10:04*	*1*

Lab Sample ID: LCS 400-190016/1000
Matrix: Solid
Analysis Batch: 190016

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	159		ug/Kg		79	43 - 150
Benzene	50.0	49.6		ug/Kg		99	74 - 119
Bromodichloromethane	50.0	40.7		ug/Kg		81	68 - 128
Bromoform	50.0	40.0		ug/Kg		80	54 - 125
Bromomethane	50.0	32.1		ug/Kg		64	25 - 150
Carbon disulfide	50.0	49.6		ug/Kg		99	26 - 150
Carbon tetrachloride	50.0	43.8		ug/Kg		88	70 - 128
Chlorobenzene	50.0	54.6		ug/Kg		109	80 - 116
Chloroethane	50.0	43.2		ug/Kg		86	22 - 150
Chloroform	50.0	40.3		ug/Kg		81	74 - 119
Chloromethane	50.0	32.1		ug/Kg		64	36 - 147
cis-1,2-Dichloroethene	50.0	52.2		ug/Kg		104	68 - 126
cis-1,3-Dichloropropene	50.0	51.1		ug/Kg		102	68 - 125
Cyclohexane	50.0	48.9		ug/Kg		98	62 - 126
Dibromochloromethane	50.0	57.8		ug/Kg		116	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	50.2		ug/Kg		100	57 - 123
1,2-Dichlorobenzene	50.0	53.3		ug/Kg		107	76 - 120
1,3-Dichlorobenzene	50.0	54.6		ug/Kg		109	78 - 118
1,4-Dichlorobenzene	50.0	54.6		ug/Kg		109	77 - 118
Dichlorodifluoromethane	50.0	30.0		ug/Kg		60	44 - 145
1,1-Dichloroethane	50.0	51.6		ug/Kg		103	61 - 128
1,2-Dichloroethane	50.0	47.1		ug/Kg		94	70 - 125
1,1-Dichloroethene	50.0	46.2		ug/Kg		92	62 - 130
1,2-Dichloropropane	50.0	52.3		ug/Kg		105	64 - 129
Diisopropyl ether	50.0	48.0		ug/Kg		96	46 - 144
Ethylbenzene	50.0	54.0		ug/Kg		108	78 - 120
Ethylene Dibromide	50.0	50.6		ug/Kg		101	78 - 119
Ethyl tert-butyl ether	50.0	44.2		ug/Kg		88	60 - 128
2-Hexanone	200	200		ug/Kg		100	54 - 140
Isopropylbenzene	50.0	55.1		ug/Kg		110	78 - 119
Methyl acetate	250	216		ug/Kg		86	52 - 139
Methylcyclohexane	50.0	46.9		ug/Kg		94	65 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190016/1000
Matrix: Solid
Analysis Batch: 190016

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	48.6		ug/Kg		97	45 - 150
Methyl Ethyl Ketone	200	198		ug/Kg		99	62 - 126
methyl isobutyl ketone	200	175		ug/Kg		88	56 - 137
Methyl tert-butyl ether	50.0	46.9		ug/Kg		94	69 - 124
Naphthalene	50.0	50.1		ug/Kg		100	64 - 126
Styrene	50.0	55.3		ug/Kg		111	66 - 132
Tert-amyl methyl ether	50.0	45.6		ug/Kg		91	65 - 124
tert-Butyl alcohol	500	544		ug/Kg		109	12 - 150
1,1,2,2-Tetrachloroethane	50.0	45.3		ug/Kg		91	67 - 120
Tetrachloroethene	50.0	61.9		ug/Kg		124	74 - 126
Toluene	50.0	54.8		ug/Kg		110	76 - 120
trans-1,2-Dichloroethene	50.0	48.6		ug/Kg		97	65 - 130
trans-1,3-Dichloropropene	50.0	56.4		ug/Kg		113	65 - 126
1,2,4-Trichlorobenzene	50.0	54.7		ug/Kg		109	72 - 126
1,1,1-Trichloroethane	50.0	39.7		ug/Kg		79	72 - 121
1,1,2-Trichloroethane	50.0	52.4		ug/Kg		105	75 - 118
Trichloroethene	50.0	51.9		ug/Kg		104	76 - 122
Trichlorofluoromethane	50.0	42.8		ug/Kg		86	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.5		ug/Kg		99	74 - 123
Vinyl chloride	50.0	40.7		ug/Kg		81	52 - 134
Xylenes, Total	100	109		ug/Kg		109	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*86*		*72 - 122*
Dibromofluoromethane	*85*		*79 - 123*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: LCSD 400-190016/11
Matrix: Solid
Analysis Batch: 190016

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	137		ug/Kg		68	43 - 150	15	30
Benzene	50.0	46.0		ug/Kg		92	74 - 119	8	30
Bromodichloromethane	50.0	37.3		ug/Kg		75	68 - 128	9	30
Bromoform	50.0	30.8		ug/Kg		62	54 - 125	26	30
Bromomethane	50.0	33.7		ug/Kg		67	25 - 150	5	30
Carbon disulfide	50.0	44.1		ug/Kg		88	26 - 150	12	30
Carbon tetrachloride	50.0	40.6		ug/Kg		81	70 - 128	8	30
Chlorobenzene	50.0	50.6		ug/Kg		101	80 - 116	8	30
Chloroethane	50.0	43.6		ug/Kg		87	22 - 150	1	30
Chloroform	50.0	43.9		ug/Kg		88	74 - 119	9	30
Chloromethane	50.0	32.6		ug/Kg		65	36 - 147	2	30
cis-1,2-Dichloroethene	50.0	48.4		ug/Kg		97	68 - 126	8	30
cis-1,3-Dichloropropene	50.0	46.4		ug/Kg		93	68 - 125	10	30
Cyclohexane	50.0	44.7		ug/Kg		89	62 - 126	9	30
Dibromochloromethane	50.0	52.8		ug/Kg		106	65 - 131	9	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-190016/11
Matrix: Solid
Analysis Batch: 190016

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane			50.0	42.5		ug/Kg		85	57 - 123	17	30
1,2-Dichlorobenzene			50.0	49.3		ug/Kg		99	76 - 120	8	30
1,3-Dichlorobenzene			50.0	50.7		ug/Kg		101	78 - 118	7	30
1,4-Dichlorobenzene			50.0	49.6		ug/Kg		99	77 - 118	10	30
Dichlorodifluoromethane			50.0	29.0		ug/Kg		58	44 - 145	3	30
1,1-Dichloroethane			50.0	47.4		ug/Kg		95	61 - 128	8	30
1,2-Dichloroethane			50.0	43.0		ug/Kg		86	70 - 125	9	30
1,1-Dichloroethene			50.0	42.1		ug/Kg		84	62 - 130	9	30
1,2-Dichloropropane			50.0	48.4		ug/Kg		97	64 - 129	8	30
Diisopropyl ether			50.0	44.0		ug/Kg		88	46 - 144	9	30
Ethylbenzene			50.0	50.5		ug/Kg		101	78 - 120	7	30
Ethylene Dibromide			50.0	45.7		ug/Kg		91	78 - 119	10	30
Ethyl tert-butyl ether			50.0	40.9		ug/Kg		82	60 - 128	8	30
2-Hexanone			200	176		ug/Kg		88	54 - 140	13	30
Isopropylbenzene			50.0	51.1		ug/Kg		102	78 - 119	8	30
Methyl acetate			250	186		ug/Kg		74	52 - 139	15	30
Methylcyclohexane			50.0	44.0		ug/Kg		88	65 - 126	6	30
Methylene Chloride			50.0	43.6		ug/Kg		87	45 - 150	11	30
Methyl Ethyl Ketone			200	170		ug/Kg		85	62 - 126	15	30
methyl isobutyl ketone			200	154		ug/Kg		77	56 - 137	13	30
Methyl tert-butyl ether			50.0	42.1		ug/Kg		84	69 - 124	11	30
Naphthalene			50.0	43.7		ug/Kg		87	64 - 126	14	30
Styrene			50.0	50.0		ug/Kg		100	66 - 132	10	30
Tert-amyl methyl ether			50.0	42.1		ug/Kg		84	65 - 124	8	30
tert-Butyl alcohol			500	564		ug/Kg		113	12 - 150	4	30
1,1,2,2-Tetrachloroethane			50.0	40.5		ug/Kg		81	67 - 120	11	30
Tetrachloroethene			50.0	58.4		ug/Kg		117	74 - 126	6	30
Toluene			50.0	50.7		ug/Kg		101	76 - 120	8	30
trans-1,2-Dichloroethene			50.0	44.3		ug/Kg		89	65 - 130	9	30
trans-1,3-Dichloropropene			50.0	51.5		ug/Kg		103	65 - 126	9	30
1,2,4-Trichlorobenzene			50.0	49.2		ug/Kg		98	72 - 126	11	30
1,1,1-Trichloroethane			50.0	38.1		ug/Kg		76	72 - 121	4	30
1,1,2-Trichloroethane			50.0	47.6		ug/Kg		95	75 - 118	10	30
Trichloroethene			50.0	48.0		ug/Kg		96	76 - 122	8	30
Trichlorofluoromethane			50.0	38.1		ug/Kg		76	65 - 132	12	30
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	46.0		ug/Kg		92	74 - 123	7	30
Vinyl chloride			50.0	39.1		ug/Kg		78	52 - 134	4	30
Xylenes, Total			100	100		ug/Kg		100	70 - 120	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*86*		*72 - 122*
Dibromofluoromethane	*99*		*79 - 123*
Toluene-d8 (Surr)	*105*		*80 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190203/4
Matrix: Water
Analysis Batch: 190203

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	3.5	ug/L			08/29/13 16:01	1
Benzene	1.0	U	1.0	0.34	ug/L			08/29/13 16:01	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Bromoform	5.0	U	5.0	0.71	ug/L			08/29/13 16:01	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Chloroethane	1.0	U	1.0	0.76	ug/L			08/29/13 16:01	1
Chloroform	1.0	U	1.0	0.60	ug/L			08/29/13 16:01	1
Chloromethane	1.0	U	1.0	0.83	ug/L			08/29/13 16:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 16:01	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			08/29/13 16:01	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			08/29/13 16:01	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			08/29/13 16:01	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			08/29/13 16:01	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			08/29/13 16:01	1
2-Hexanone	25	U	25	3.1	ug/L			08/29/13 16:01	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			08/29/13 16:01	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			08/29/13 16:01	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			08/29/13 16:01	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			08/29/13 16:01	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			08/29/13 16:01	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			08/29/13 16:01	1
Naphthalene	1.0	U	1.0	1.0	ug/L			08/29/13 16:01	1
Styrene	1.0	U	1.0	1.0	ug/L			08/29/13 16:01	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			08/29/13 16:01	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			08/29/13 16:01	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			08/29/13 16:01	1
Toluene	1.0	U	1.0	0.70	ug/L			08/29/13 16:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			08/29/13 16:01	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			08/29/13 16:01	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			08/29/13 16:01	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190203/4
Matrix: Water
Analysis Batch: 190203

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			08/29/13 16:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/29/13 16:01	1
Xylenes, Total	10	U	10	1.6	ug/L			08/29/13 16:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*78 - 118*		*08/29/13 16:01*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*08/29/13 16:01*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/29/13 16:01*	*1*

Lab Sample ID: LCS 400-190203/1000
Matrix: Water
Analysis Batch: 190203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	253		ug/L		126	24 - 150
Benzene	50.0	50.5		ug/L		101	79 - 120
Bromodichloromethane	50.0	51.4		ug/L		103	75 - 127
Bromoform	50.0	54.6		ug/L		109	65 - 121
Carbon disulfide	50.0	52.2		ug/L		104	41 - 140
Carbon tetrachloride	50.0	52.3		ug/L		105	46 - 141
Chlorobenzene	50.0	49.9		ug/L		100	85 - 120
Chloroethane	50.0	41.5		ug/L		83	37 - 150
Chloroform	50.0	50.1		ug/L		100	73 - 122
Chloromethane	50.0	50.5		ug/L		101	49 - 141
cis-1,2-Dichloroethene	50.0	50.8		ug/L		102	78 - 122
cis-1,3-Dichloropropene	50.0	53.7		ug/L		107	70 - 122
Cyclohexane	50.0	50.4		ug/L		101	69 - 123
Dibromochloromethane	50.0	53.5		ug/L		107	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	53.3		ug/L		107	52 - 124
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	80 - 121
1,3-Dichlorobenzene	50.0	51.4		ug/L		103	77 - 124
1,4-Dichlorobenzene	50.0	51.0		ug/L		102	79 - 119
Dichlorodifluoromethane	50.0	44.4		ug/L		89	27 - 144
1,1-Dichloroethane	50.0	51.8		ug/L		104	75 - 126
1,2-Dichloroethane	50.0	49.4		ug/L		99	69 - 128
1,1-Dichloroethene	50.0	55.7		ug/L		111	50 - 134
1,2-Dichloropropane	50.0	51.3		ug/L		103	77 - 126
Diisopropyl ether	50.0	51.5		ug/L		103	69 - 143
Ethylbenzene	50.0	50.7		ug/L		101	82 - 120
Ethylene Dibromide	50.0	53.2		ug/L		106	82 - 119
Ethyl tert-butyl ether	50.0	56.2		ug/L		112	58 - 142
2-Hexanone	200	205		ug/L		102	60 - 150
Isopropylbenzene	50.0	51.0		ug/L		102	76 - 118
Methyl acetate	250	262		ug/L		105	58 - 150
Methylcyclohexane	50.0	50.9		ug/L		102	72 - 121
Methylene Chloride	50.0	51.8		ug/L		104	70 - 130
Methyl Ethyl Ketone	200	220		ug/L		110	62 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190203/1000
Matrix: Water
Analysis Batch: 190203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
methyl isobutyl ketone	200	201		ug/L		100	63 - 150
Methyl tert-butyl ether	50.0	53.6		ug/L		107	70 - 124
Naphthalene	50.0	51.3		ug/L		103	45 - 131
Styrene	50.0	52.9		ug/L		106	79 - 124
Tert-amyl methyl ether	50.0	55.7		ug/L		111	65 - 125
tert-Butyl alcohol	500	550		ug/L		110	44 - 150
1,1,2,2-Tetrachloroethane	50.0	50.6		ug/L		101	68 - 132
Tetrachloroethene	50.0	51.8		ug/L		104	76 - 124
Toluene	50.0	50.0		ug/L		100	81 - 120
trans-1,2-Dichloroethene	50.0	52.6		ug/L		105	70 - 126
trans-1,3-Dichloropropene	50.0	55.4		ug/L		111	64 - 120
1,2,4-Trichlorobenzene	50.0	50.8		ug/L		102	69 - 128
1,1,1-Trichloroethane	50.0	52.0		ug/L		104	66 - 130
1,1,2-Trichloroethane	50.0	51.5		ug/L		103	81 - 117
Trichloroethene	50.0	52.0		ug/L		104	77 - 119
Trichlorofluoromethane	50.0	52.6		ug/L		105	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	54.2		ug/L		108	45 - 138
Vinyl chloride	50.0	54.0		ug/L		108	60 - 128
Xylenes, Total	100	101		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*78 - 118*
Dibromofluoromethane	*98*		*81 - 121*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 400-190276/5
Matrix: Solid
Analysis Batch: 190276

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg			08/30/13 10:21	1
Benzene	5.0	U	5.0	0.49	ug/Kg			08/30/13 10:21	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg			08/30/13 10:21	1
Bromoform	5.0	U	5.0	0.63	ug/Kg			08/30/13 10:21	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg			08/30/13 10:21	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg			08/30/13 10:21	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg			08/30/13 10:21	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg			08/30/13 10:21	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg			08/30/13 10:21	1
Chloroform	5.0	U	5.0	0.59	ug/Kg			08/30/13 10:21	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			08/30/13 10:21	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/30/13 10:21	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg			08/30/13 10:21	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg			08/30/13 10:21	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg			08/30/13 10:21	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg			08/30/13 10:21	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg			08/30/13 10:21	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-190276/5
Matrix: Solid
Analysis Batch: 190276

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg			08/30/13 10:21	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg			08/30/13 10:21	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg			08/30/13 10:21	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg			08/30/13 10:21	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg			08/30/13 10:21	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg			08/30/13 10:21	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg			08/30/13 10:21	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg			08/30/13 10:21	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg			08/30/13 10:21	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg			08/30/13 10:21	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg			08/30/13 10:21	1
2-Hexanone	25	U	25	5.0	ug/Kg			08/30/13 10:21	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg			08/30/13 10:21	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg			08/30/13 10:21	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg			08/30/13 10:21	1
Methylene Chloride	15	U	15	10	ug/Kg			08/30/13 10:21	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg			08/30/13 10:21	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg			08/30/13 10:21	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			08/30/13 10:21	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg			08/30/13 10:21	1
Styrene	5.0	U	5.0	0.76	ug/Kg			08/30/13 10:21	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg			08/30/13 10:21	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg			08/30/13 10:21	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg			08/30/13 10:21	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg			08/30/13 10:21	1
Toluene	5.0	U	5.0	0.70	ug/Kg			08/30/13 10:21	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			08/30/13 10:21	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg			08/30/13 10:21	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg			08/30/13 10:21	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg			08/30/13 10:21	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg			08/30/13 10:21	1
Trichloroethene	5.0	U	5.0	0.48	ug/Kg			08/30/13 10:21	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg			08/30/13 10:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg			08/30/13 10:21	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg			08/30/13 10:21	1
Xylenes, Total	10	U	10	1.9	ug/Kg			08/30/13 10:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*		*08/30/13 10:21*	*1*
Dibromofluoromethane	*95*		*79 - 123*		*08/30/13 10:21*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/30/13 10:21*	*1*

Lab Sample ID: LCS 400-190276/1000
Matrix: Solid
Analysis Batch: 190276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	182		ug/Kg		91	43 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190276/1000
Matrix: Solid
Analysis Batch: 190276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	47.8		ug/Kg		96	74 - 119
Bromodichloromethane	50.0	40.5		ug/Kg		81	68 - 128
Bromoform	50.0	41.6		ug/Kg		83	54 - 125
Bromomethane	50.0	30.8		ug/Kg		62	25 - 150
Carbon disulfide	50.0	41.6		ug/Kg		83	26 - 150
Carbon tetrachloride	50.0	40.9		ug/Kg		82	70 - 128
Chlorobenzene	50.0	48.2		ug/Kg		96	80 - 116
Chloroethane	50.0	52.3		ug/Kg		105	22 - 150
Chloroform	50.0	48.5		ug/Kg		97	74 - 119
Chloromethane	50.0	52.6		ug/Kg		105	36 - 147
cis-1,2-Dichloroethene	50.0	45.1		ug/Kg		90	68 - 126
cis-1,3-Dichloropropene	50.0	40.5		ug/Kg		81	68 - 125
Cyclohexane	50.0	41.8		ug/Kg		84	62 - 126
Dibromochloromethane	50.0	40.2		ug/Kg		80	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	48.4		ug/Kg		97	57 - 123
1,2-Dichlorobenzene	50.0	50.4		ug/Kg		101	76 - 120
1,3-Dichlorobenzene	50.0	50.8		ug/Kg		102	78 - 118
1,4-Dichlorobenzene	50.0	49.7		ug/Kg		99	77 - 118
Dichlorodifluoromethane	50.0	48.9		ug/Kg		98	44 - 145
1,1-Dichloroethane	50.0	51.3		ug/Kg		103	61 - 128
1,2-Dichloroethane	50.0	44.8		ug/Kg		90	70 - 125
1,1-Dichloroethene	50.0	44.2		ug/Kg		88	62 - 130
1,2-Dichloropropane	50.0	45.7		ug/Kg		91	64 - 129
Diisopropyl ether	50.0	48.5		ug/Kg		97	46 - 144
Ethylbenzene	50.0	49.7		ug/Kg		99	78 - 120
Ethylene Dibromide	50.0	48.4		ug/Kg		97	78 - 119
Ethyl tert-butyl ether	50.0	45.5		ug/Kg		91	60 - 128
2-Hexanone	200	180		ug/Kg		90	54 - 140
Isopropylbenzene	50.0	45.6		ug/Kg		91	78 - 119
Methyl acetate	250	226		ug/Kg		90	52 - 139
Methylcyclohexane	50.0	43.2		ug/Kg		86	65 - 126
Methylene Chloride	50.0	42.9		ug/Kg		86	45 - 150
Methyl Ethyl Ketone	200	177		ug/Kg		88	62 - 126
methyl isobutyl ketone	200	179		ug/Kg		89	56 - 137
Methyl tert-butyl ether	50.0	46.7		ug/Kg		93	69 - 124
Naphthalene	50.0	44.7		ug/Kg		89	64 - 126
Styrene	50.0	49.2		ug/Kg		98	66 - 132
Tert-amyl methyl ether	50.0	43.5		ug/Kg		87	65 - 124
tert-Butyl alcohol	500	450		ug/Kg		90	12 - 150
1,1,2,2-Tetrachloroethane	50.0	47.3		ug/Kg		95	67 - 120
Tetrachloroethene	50.0	47.3		ug/Kg		95	74 - 126
Toluene	50.0	46.2		ug/Kg		92	76 - 120
trans-1,2-Dichloroethene	50.0	52.3		ug/Kg		105	65 - 130
trans-1,3-Dichloropropene	50.0	41.7		ug/Kg		83	65 - 126
1,2,4-Trichlorobenzene	50.0	48.5		ug/Kg		97	72 - 126
1,1,1-Trichloroethane	50.0	41.9		ug/Kg		84	72 - 121
1,1,2-Trichloroethane	50.0	44.6		ug/Kg		89	75 - 118
Trichloroethene	50.0	48.8		ug/Kg		98	76 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-190276/1000
Matrix: Solid
Analysis Batch: 190276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	47.0		ug/Kg		94	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	46.8		ug/Kg		94	74 - 123
Vinyl chloride	50.0	49.1		ug/Kg		98	52 - 134
Xylenes, Total	100	97.3		ug/Kg		97	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*72 - 122*
Dibromofluoromethane	*100*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 400-190276/3
Matrix: Solid
Analysis Batch: 190276

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	193		ug/Kg		97	43 - 150	6	30
Benzene	50.0	47.5		ug/Kg		95	74 - 119	1	30
Bromodichloromethane	50.0	39.3		ug/Kg		79	68 - 128	3	30
Bromoform	50.0	41.3		ug/Kg		83	54 - 125	1	30
Bromomethane	50.0	28.1		ug/Kg		56	25 - 150	9	30
Carbon disulfide	50.0	49.0		ug/Kg		98	26 - 150	16	30
Carbon tetrachloride	50.0	40.7		ug/Kg		81	70 - 128	1	30
Chlorobenzene	50.0	47.7		ug/Kg		95	80 - 116	1	30
Chloroethane	50.0	48.8		ug/Kg		98	22 - 150	7	30
Chloroform	50.0	48.0		ug/Kg		96	74 - 119	1	30
Chloromethane	50.0	49.8		ug/Kg		100	36 - 147	6	30
cis-1,2-Dichloroethene	50.0	44.6		ug/Kg		89	68 - 126	1	30
cis-1,3-Dichloropropene	50.0	40.7		ug/Kg		81	68 - 125	0	30
Cyclohexane	50.0	41.6		ug/Kg		83	62 - 126	1	30
Dibromochloromethane	50.0	39.6		ug/Kg		79	65 - 131	2	30
1,2-Dibromo-3-Chloropropane	50.0	46.3		ug/Kg		93	57 - 123	5	30
1,2-Dichlorobenzene	50.0	48.5		ug/Kg		97	76 - 120	4	30
1,3-Dichlorobenzene	50.0	49.0		ug/Kg		98	78 - 118	4	30
1,4-Dichlorobenzene	50.0	48.4		ug/Kg		97	77 - 118	3	30
Dichlorodifluoromethane	50.0	44.5		ug/Kg		89	44 - 145	9	30
1,1-Dichloroethane	50.0	52.4		ug/Kg		105	61 - 128	2	30
1,2-Dichloroethane	50.0	44.2		ug/Kg		88	70 - 125	1	30
1,1-Dichloroethene	50.0	51.3		ug/Kg		103	62 - 130	15	30
1,2-Dichloropropane	50.0	44.8		ug/Kg		90	64 - 129	2	30
Diisopropyl ether	50.0	49.3		ug/Kg		99	46 - 144	2	30
Ethylbenzene	50.0	48.9		ug/Kg		98	78 - 120	2	30
Ethylene Dibromide	50.0	46.9		ug/Kg		94	78 - 119	3	30
Ethyl tert-butyl ether	50.0	44.4		ug/Kg		89	60 - 128	3	30
2-Hexanone	200	174		ug/Kg		87	54 - 140	3	30
Isopropylbenzene	50.0	45.1		ug/Kg		90	78 - 119	1	30
Methyl acetate	250	263		ug/Kg		105	52 - 139	15	30
Methylcyclohexane	50.0	42.3		ug/Kg		85	65 - 126	2	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-190276/3
Matrix: Solid
Analysis Batch: 190276

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Chloride	50.0	53.6		ug/Kg		107	45 - 150	22	30
Methyl Ethyl Ketone	200	176		ug/Kg		88	62 - 126	0	30
methyl isobutyl ketone	200	175		ug/Kg		87	56 - 137	2	30
Methyl tert-butyl ether	50.0	47.9		ug/Kg		96	69 - 124	3	30
Naphthalene	50.0	43.1		ug/Kg		86	64 - 126	4	30
Styrene	50.0	48.6		ug/Kg		97	66 - 132	1	30
Tert-amyl methyl ether	50.0	43.8		ug/Kg		88	65 - 124	1	30
tert-Butyl alcohol	500	430		ug/Kg		86	12 - 150	5	30
1,1,2,2-Tetrachloroethane	50.0	45.0		ug/Kg		90	67 - 120	5	30
Tetrachloroethene	50.0	47.3		ug/Kg		95	74 - 126	0	30
Toluene	50.0	46.1		ug/Kg		92	76 - 120	0	30
trans-1,2-Dichloroethene	50.0	56.0		ug/Kg		112	65 - 130	7	30
trans-1,3-Dichloropropene	50.0	42.5		ug/Kg		85	65 - 126	2	30
1,2,4-Trichlorobenzene	50.0	46.9		ug/Kg		94	72 - 126	3	30
1,1,1-Trichloroethane	50.0	41.8		ug/Kg		84	72 - 121	0	30
1,1,2-Trichloroethane	50.0	44.6		ug/Kg		89	75 - 118	0	30
Trichloroethene	50.0	48.4		ug/Kg		97	76 - 122	1	30
Trichlorofluoromethane	50.0	43.1		ug/Kg		86	65 - 132	9	30
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.3		ug/Kg		105	74 - 123	11	30
Vinyl chloride	50.0	46.3		ug/Kg		93	52 - 134	6	30
Xylenes, Total	100	96.4		ug/Kg		96	70 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*92*		*72 - 122*
Dibromofluoromethane	*101*		*79 - 123*
Toluene-d8 (Surr)	*96*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-290868/19-A
Matrix: Solid
Analysis Batch: 291044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290868

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	58	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Acetophenone	330	U	330	28	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Bis(2-chloroethyl)ether	330	U	330	45	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Bis(2-chloroethoxy)methane	330	U	330	39	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Caprolactam	330	U	330	66	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
4-Chloroaniline	660	U	660	52	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2-Chlorophenol	330	U	330	40	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
1,1'-Biphenyl	740	U	740	740	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Acenaphthylene	330	U	330	36	ug/Kg		08/26/13 14:24	08/27/13 11:48	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290868/19-A
Matrix: Solid
Analysis Batch: 291044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290868

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	330	U	330	44	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Acenaphthene	330	U	330	41	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Dimethyl phthalate	330	U	330	34	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2,4-Dinitrophenol	1700	U	1700	830	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Dibenzofuran	330	U	330	33	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2,4-Dinitrotoluene	330	U	330	49	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2,6-Dinitrotoluene	330	U	330	42	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Diethyl phthalate	330	U	330	37	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
4-Chlorophenyl phenyl ether	330	U	330	44	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Fluorene	330	U	330	36	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Hexachlorobenzene	330	U	330	39	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Atrazine	330	U	330	23	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Hexachlorocyclopentadiene	330	U	330	41	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Hexachloroethane	330	U	330	28	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Anthracene	330	U	330	25	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Isophorone	330	U	330	33	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2-Methylnaphthalene	330	U	330	38	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Carbazole	330	U	330	30	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2-Methylphenol	330	U	330	27	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
3 & 4 Methylphenol	330	U	330	43	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Fluoranthene	330	U	330	32	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Naphthalene	330	U	330	30	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2-Nitroaniline	1700	U	1700	45	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
3,3'-Dichlorobenzidine	660	U	660	28	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
3-Nitroaniline	1700	U	1700	46	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
4-Nitroaniline	1700	U	1700	49	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Chrysene	330	U	330	21	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Nitrobenzene	330	U	330	26	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2-Nitrophenol	330	U	330	41	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Benzo[b]fluoranthene	330	U	330	38	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Benzo[k]fluoranthene	330	U	330	65	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Benzo[a]pyrene	330	U	330	52	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Dibenz(a,h)anthracene	330	U	330	39	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Phenanthrene	330	U	330	27	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		08/26/13 14:24	08/27/13 11:48	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-290868/19-A
Matrix: Solid
Analysis Batch: 291044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290868

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	330	U	330	34	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
Pyrene	330	U	330	27	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		08/26/13 14:24	08/27/13 11:48	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		08/26/13 14:24	08/27/13 11:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*61*		*46 - 130*	*08/26/13 14:24*	*08/27/13 11:48*	*1*
2-Fluorobiphenyl	*76*		*58 - 130*	*08/26/13 14:24*	*08/27/13 11:48*	*1*
Terphenyl-d14 (Surr)	*94*		*60 - 130*	*08/26/13 14:24*	*08/27/13 11:48*	*1*
Phenol-d5 (Surr)	*79*		*49 - 130*	*08/26/13 14:24*	*08/27/13 11:48*	*1*
2-Fluorophenol (Surr)	*73*		*40 - 130*	*08/26/13 14:24*	*08/27/13 11:48*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*58 - 130*	*08/26/13 14:24*	*08/27/13 11:48*	*1*

Lab Sample ID: LCS 680-290868/20-A
Matrix: Solid
Analysis Batch: 291044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290868

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3280	789		ug/Kg		24	10 - 130
Acetophenone	3280	1870		ug/Kg		57	42 - 130
Bis(2-chloroethyl)ether	3280	2310		ug/Kg		71	42 - 130
bis (2-chloroisopropyl) ether	3280	2370		ug/Kg		72	44 - 130
Bis(2-chloroethoxy)methane	3280	2270		ug/Kg		69	56 - 130
Caprolactam	3280	2810		ug/Kg		86	52 - 130
4-Chloroaniline	3280	1850		ug/Kg		56	36 - 130
4-Chloro-3-methylphenol	3280	2590		ug/Kg		79	52 - 130
2-Chlorophenol	3280	2470		ug/Kg		75	51 - 130
1,1'-Biphenyl	3280	2170		ug/Kg		66	57 - 130
2-Chloronaphthalene	3280	2180		ug/Kg		66	55 - 130
2,4-Dichlorophenol	3280	2440		ug/Kg		74	53 - 130
Acenaphthylene	3280	2260		ug/Kg		69	58 - 130
2,4-Dimethylphenol	3280	2270		ug/Kg		69	47 - 130
Acenaphthene	3280	2100		ug/Kg		64	58 - 130
Dimethyl phthalate	3280	2450		ug/Kg		75	63 - 130
2,4-Dinitrophenol	3280	1190	J	ug/Kg		36	10 - 154
Dibenzofuran	3280	2390		ug/Kg		73	56 - 130
2,4-Dinitrotoluene	3280	2570		ug/Kg		78	55 - 130
2,6-Dinitrotoluene	3280	2430		ug/Kg		74	57 - 130
Diethyl phthalate	3280	2510		ug/Kg		76	62 - 130
4-Chlorophenyl phenyl ether	3280	2470		ug/Kg		75	61 - 130
Fluorene	3280	2420		ug/Kg		74	58 - 130
4,6-Dinitro-2-methylphenol	3280	1920		ug/Kg		58	14 - 137
4-Bromophenyl phenyl ether	3280	2560		ug/Kg		78	65 - 130
Hexachlorobenzene	3280	2520		ug/Kg		77	59 - 130
Hexachlorobutadiene	3280	2520		ug/Kg		77	47 - 130
Atrazine	3280	2900		ug/Kg		88	54 - 141
Hexachlorocyclopentadiene	3280	2160		ug/Kg		66	35 - 130
Hexachloroethane	3280	1970		ug/Kg		60	44 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-290868/20-A
Matrix: Solid
Analysis Batch: 291044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290868

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	3280	2270		ug/Kg		69	60 - 130
Isophorone	3280	2120		ug/Kg		65	48 - 130
2-Methylnaphthalene	3280	2140		ug/Kg		65	55 - 130
Carbazole	3280	2710		ug/Kg		83	60 - 130
2-Methylphenol	3280	2390		ug/Kg		73	49 - 130
Di-n-butyl phthalate	3280	2560		ug/Kg		78	65 - 130
3 & 4 Methylphenol	3280	2460		ug/Kg		75	50 - 130
Fluoranthene	3280	2540		ug/Kg		77	62 - 130
Naphthalene	3280	2290		ug/Kg		70	54 - 130
2-Nitroaniline	3280	2560		ug/Kg		78	52 - 130
Butyl benzyl phthalate	3280	3100		ug/Kg		94	65 - 134
3,3'-Dichlorobenzidine	3280	2850		ug/Kg		87	45 - 130
3-Nitroaniline	3280	2350		ug/Kg		72	42 - 130
4-Nitroaniline	3280	2590		ug/Kg		79	49 - 130
Benzo[a]anthracene	3280	2850		ug/Kg		87	62 - 130
Chrysene	3280	2910		ug/Kg		89	62 - 130
Nitrobenzene	3280	2230		ug/Kg		68	43 - 130
Bis(2-ethylhexyl) phthalate	3280	3230		ug/Kg		98	62 - 132
2-Nitrophenol	3280	2170		ug/Kg		66	45 - 130
Di-n-octyl phthalate	3280	2800		ug/Kg		85	59 - 146
4-Nitrophenol	3280	2530		ug/Kg		77	30 - 130
Benzo[b]fluoranthene	3280	2840		ug/Kg		87	53 - 130
Benzo[k]fluoranthene	3280	2810		ug/Kg		86	57 - 130
N-Nitrosodi-n-propylamine	3280	2320		ug/Kg		71	48 - 130
Benzo[a]pyrene	3280	2530		ug/Kg		77	68 - 131
N-Nitrosodiphenylamine	3280	3010		ug/Kg		92	62 - 130
Indeno[1,2,3-cd]pyrene	3280	3000		ug/Kg		92	52 - 130
Pentachlorophenol	3280	2890		ug/Kg		88	38 - 131
Dibenz(a,h)anthracene	3280	2670		ug/Kg		81	56 - 130
Phenanthrene	3280	2470		ug/Kg		75	61 - 130
Benzo[g,h,i]perylene	3280	2670		ug/Kg		81	54 - 130
Phenol	3280	2730		ug/Kg		83	46 - 130
Pyrene	3280	2800		ug/Kg		85	59 - 130
2,4,5-Trichlorophenol	3280	2350		ug/Kg		72	60 - 130
2,4,6-Trichlorophenol	3280	2460		ug/Kg		75	53 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*70*		*46 - 130*
2-Fluorobiphenyl	*71*		*58 - 130*
Terphenyl-d14 (Surr)	*92*		*60 - 130*
Phenol-d5 (Surr)	*85*		*49 - 130*
2-Fluorophenol (Surr)	*74*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*83*		*58 - 130*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-291010/4-A
Matrix: Water
Analysis Batch: 291919

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	10	U	10	1.1	ug/L		08/27/13 14:50	09/03/13 17:22	1
Acetophenone	10	U	10	0.57	ug/L		08/27/13 14:50	09/03/13 17:22	1
Bis(2-chloroethyl)ether	10	U	10	1.1	ug/L		08/27/13 14:50	09/03/13 17:22	1
bis (2-chloroisopropyl) ether	10	U	10	0.78	ug/L		08/27/13 14:50	09/03/13 17:22	1
Bis(2-chloroethoxy)methane	10	U	10	0.94	ug/L		08/27/13 14:50	09/03/13 17:22	1
Caprolactam	10	U	10	0.79	ug/L		08/27/13 14:50	09/03/13 17:22	1
4-Chloroaniline	20	U	20	2.2	ug/L		08/27/13 14:50	09/03/13 17:22	1
4-Chloro-3-methylphenol	10	U	10	1.0	ug/L		08/27/13 14:50	09/03/13 17:22	1
2-Chlorophenol	10	U	10	0.87	ug/L		08/27/13 14:50	09/03/13 17:22	1
1,1'-Biphenyl	10	U	10	0.58	ug/L		08/27/13 14:50	09/03/13 17:22	1
2-Chloronaphthalene	10	U	10	0.80	ug/L		08/27/13 14:50	09/03/13 17:22	1
2,4-Dichlorophenol	10	U	10	1.1	ug/L		08/27/13 14:50	09/03/13 17:22	1
Acenaphthylene	10	U	10	0.85	ug/L		08/27/13 14:50	09/03/13 17:22	1
2,4-Dimethylphenol	10	U	10	4.0	ug/L		08/27/13 14:50	09/03/13 17:22	1
Acenaphthene	10	U	10	0.76	ug/L		08/27/13 14:50	09/03/13 17:22	1
Dimethyl phthalate	10	U	10	0.99	ug/L		08/27/13 14:50	09/03/13 17:22	1
2,4-Dinitrophenol	50	U	50	10	ug/L		08/27/13 14:50	09/03/13 17:22	1
Dibenzofuran	10	U	10	0.79	ug/L		08/27/13 14:50	09/03/13 17:22	1
2,4-Dinitrotoluene	10	U	10	1.2	ug/L		08/27/13 14:50	09/03/13 17:22	1
2,6-Dinitrotoluene	10	U	10	1.1	ug/L		08/27/13 14:50	09/03/13 17:22	1
Diethyl phthalate	10	U	10	0.88	ug/L		08/27/13 14:50	09/03/13 17:22	1
4-Chlorophenyl phenyl ether	10	U	10	0.84	ug/L		08/27/13 14:50	09/03/13 17:22	1
Fluorene	10	U	10	0.96	ug/L		08/27/13 14:50	09/03/13 17:22	1
4,6-Dinitro-2-methylphenol	50	U	50	10	ug/L		08/27/13 14:50	09/03/13 17:22	1
4-Bromophenyl phenyl ether	10	U	10	0.77	ug/L		08/27/13 14:50	09/03/13 17:22	1
Hexachlorobenzene	10	U	10	0.79	ug/L		08/27/13 14:50	09/03/13 17:22	1
Hexachlorobutadiene	10	U	10	0.62	ug/L		08/27/13 14:50	09/03/13 17:22	1
Atrazine	10	U	10	1.2	ug/L		08/27/13 14:50	09/03/13 17:22	1
Hexachlorocyclopentadiene	10	U	10	2.5	ug/L		08/27/13 14:50	09/03/13 17:22	1
Hexachloroethane	10	U	10	0.76	ug/L		08/27/13 14:50	09/03/13 17:22	1
Anthracene	10	U	10	0.69	ug/L		08/27/13 14:50	09/03/13 17:22	1
Isophorone	10	U	10	0.90	ug/L		08/27/13 14:50	09/03/13 17:22	1
2-Methylnaphthalene	10	U	10	0.78	ug/L		08/27/13 14:50	09/03/13 17:22	1
Carbazole	10	U	10	0.71	ug/L		08/27/13 14:50	09/03/13 17:22	1
2-Methylphenol	10	U	10	0.89	ug/L		08/27/13 14:50	09/03/13 17:22	1
Di-n-butyl phthalate	10	U	10	0.83	ug/L		08/27/13 14:50	09/03/13 17:22	1
3 & 4 Methylphenol	10	U	10	1.3	ug/L		08/27/13 14:50	09/03/13 17:22	1
Fluoranthene	10	U	10	0.74	ug/L		08/27/13 14:50	09/03/13 17:22	1
Naphthalene	10	U	10	0.70	ug/L		08/27/13 14:50	09/03/13 17:22	1
2-Nitroaniline	50	U	50	1.3	ug/L		08/27/13 14:50	09/03/13 17:22	1
Butyl benzyl phthalate	10	U	10	1.2	ug/L		08/27/13 14:50	09/03/13 17:22	1
3,3'-Dichlorobenzidine	60	U	60	30	ug/L		08/27/13 14:50	09/03/13 17:22	1
3-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/03/13 17:22	1
4-Nitroaniline	50	U	50	5.0	ug/L		08/27/13 14:50	09/03/13 17:22	1
Benzo[a]anthracene	10	U	10	0.55	ug/L		08/27/13 14:50	09/03/13 17:22	1
Chrysene	10	U	10	0.51	ug/L		08/27/13 14:50	09/03/13 17:22	1
Nitrobenzene	10	U	10	0.73	ug/L		08/27/13 14:50	09/03/13 17:22	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.6	ug/L		08/27/13 14:50	09/03/13 17:22	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-291010/4-A
Matrix: Water
Analysis Batch: 291919

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	10	U	10	0.76	ug/L		08/27/13 14:50	09/03/13 17:22	1
Di-n-octyl phthalate	10	U	10	1.4	ug/L		08/27/13 14:50	09/03/13 17:22	1
4-Nitrophenol	50	U	50	1.9	ug/L		08/27/13 14:50	09/03/13 17:22	1
Benzo[b]fluoranthene	10	U	10	2.6	ug/L		08/27/13 14:50	09/03/13 17:22	1
Benzo[k]fluoranthene	10	U	10	1.2	ug/L		08/27/13 14:50	09/03/13 17:22	1
N-Nitrosodi-n-propylamine	10	U	10	0.72	ug/L		08/27/13 14:50	09/03/13 17:22	1
Benzo[a]pyrene	10	U	10	0.71	ug/L		08/27/13 14:50	09/03/13 17:22	1
N-Nitrosodiphenylamine	10	U	10	0.92	ug/L		08/27/13 14:50	09/03/13 17:22	1
Indeno[1,2,3-cd]pyrene	10	U	10	1.0	ug/L		08/27/13 14:50	09/03/13 17:22	1
Pentachlorophenol	50	U	50	2.0	ug/L		08/27/13 14:50	09/03/13 17:22	1
Dibenz(a,h)anthracene	10	U	10	1.0	ug/L		08/27/13 14:50	09/03/13 17:22	1
Phenanthrene	10	U	10	0.77	ug/L		08/27/13 14:50	09/03/13 17:22	1
Benzo[g,h,i]perylene	10	U	10	0.87	ug/L		08/27/13 14:50	09/03/13 17:22	1
Phenol	10	U	10	0.83	ug/L		08/27/13 14:50	09/03/13 17:22	1
Pyrene	10	U	10	0.63	ug/L		08/27/13 14:50	09/03/13 17:22	1
2,4,5-Trichlorophenol	10	U	10	1.2	ug/L		08/27/13 14:50	09/03/13 17:22	1
2,4,6-Trichlorophenol	10	U	10	0.85	ug/L		08/27/13 14:50	09/03/13 17:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*93*		*39 - 130*	*08/27/13 14:50*	*09/03/13 17:22*	*1*
2-Fluorobiphenyl	*92*		*38 - 130*	*08/27/13 14:50*	*09/03/13 17:22*	*1*
Terphenyl-d14 (Surr)	*89*		*10 - 143*	*08/27/13 14:50*	*09/03/13 17:22*	*1*
Phenol-d5 (Surr)	*87*		*25 - 130*	*08/27/13 14:50*	*09/03/13 17:22*	*1*
2-Fluorophenol (Surr)	*101*		*25 - 130*	*08/27/13 14:50*	*09/03/13 17:22*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*31 - 141*	*08/27/13 14:50*	*09/03/13 17:22*	*1*

Lab Sample ID: LCS 680-291010/5-A
Matrix: Water
Analysis Batch: 291919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291010

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	100	65.9		ug/L		66	59 - 142
Acetophenone	100	74.3		ug/L		74	54 - 130
Bis(2-chloroethyl)ether	100	83.9		ug/L		84	56 - 130
bis (2-chloroisopropyl) ether	100	86.4		ug/L		86	55 - 130
Bis(2-chloroethoxy)methane	100	83.8		ug/L		84	64 - 130
Caprolactam	100	89.9		ug/L		90	34 - 130
4-Chloroaniline	100	59.4		ug/L		59	42 - 130
4-Chloro-3-methylphenol	100	88.3		ug/L		88	60 - 130
2-Chlorophenol	100	79.0		ug/L		79	57 - 130
1,1'-Biphenyl	100	74.8		ug/L		75	54 - 130
2-Chloronaphthalene	100	74.0		ug/L		74	53 - 130
2,4-Dichlorophenol	100	84.1		ug/L		84	54 - 130
Acenaphthylene	100	85.9		ug/L		86	60 - 130
2,4-Dimethylphenol	100	60.7		ug/L		61	40 - 130
Acenaphthene	100	76.7		ug/L		77	55 - 130
Dimethyl phthalate	100	90.1		ug/L		90	69 - 130
2,4-Dinitrophenol	100	91.9		ug/L		92	20 - 165

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-291010/5-A
Matrix: Water
Analysis Batch: 291919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291010

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibenzofuran	100	84.6		ug/L		85	58 - 130
2,4-Dinitrotoluene	100	96.9		ug/L		97	63 - 130
2,6-Dinitrotoluene	100	85.6		ug/L		86	65 - 130
Diethyl phthalate	100	93.9		ug/L		94	70 - 130
4-Chlorophenyl phenyl ether	100	86.2		ug/L		86	57 - 130
Fluorene	100	85.9		ug/L		86	61 - 130
4,6-Dinitro-2-methylphenol	100	102		ug/L		102	45 - 134
4-Bromophenyl phenyl ether	100	79.3		ug/L		79	61 - 130
Hexachlorobenzene	100	74.0		ug/L		74	52 - 130
Hexachlorobutadiene	100	66.0		ug/L		66	36 - 130
Atrazine	100	79.8		ug/L		80	66 - 130
Hexachlorocyclopentadiene	100	13.7		ug/L		14	10 - 130
Hexachloroethane	100	59.0		ug/L		59	39 - 130
Anthracene	100	80.5		ug/L		80	61 - 130
Isophorone	100	79.7		ug/L		80	59 - 130
2-Methylnaphthalene	100	72.0		ug/L		72	52 - 130
Carbazole	100	97.0		ug/L		97	67 - 130
2-Methylphenol	100	80.7		ug/L		81	55 - 130
Di-n-butyl phthalate	100	91.3		ug/L		91	66 - 130
3 & 4 Methylphenol	100	81.3		ug/L		81	35 - 130
Fluoranthene	100	111		ug/L		111	56 - 130
Naphthalene	100	70.5		ug/L		70	50 - 130
2-Nitroaniline	100	92.1		ug/L		92	60 - 130
Butyl benzyl phthalate	100	98.0		ug/L		98	66 - 130
3,3'-Dichlorobenzidine	100	60.7		ug/L		61	27 - 130
3-Nitroaniline	100	81.2		ug/L		81	54 - 130
4-Nitroaniline	100	97.3		ug/L		97	54 - 130
Benzo[a]anthracene	100	84.3		ug/L		84	58 - 130
Chrysene	100	86.9		ug/L		87	59 - 130
Nitrobenzene	100	75.1		ug/L		75	56 - 130
Bis(2-ethylhexyl) phthalate	100	90.6		ug/L		91	62 - 130
2-Nitrophenol	100	79.8		ug/L		80	54 - 130
Di-n-octyl phthalate	100	84.7		ug/L		85	64 - 130
4-Nitrophenol	100	101		ug/L		101	38 - 130
Benzo[b]fluoranthene	100	76.1		ug/L		76	51 - 130
Benzo[k]fluoranthene	100	69.1		ug/L		69	53 - 130
N-Nitrosodi-n-propylamine	100	83.0		ug/L		83	64 - 130
Benzo[a]pyrene	100	70.6		ug/L		71	61 - 130
N-Nitrosodiphenylamine	100	81.3		ug/L		81	68 - 130
Indeno[1,2,3-cd]pyrene	100	84.9		ug/L		85	47 - 130
Pentachlorophenol	100	99.2		ug/L		99	42 - 138
Dibenz(a,h)anthracene	100	72.9		ug/L		73	55 - 130
Phenanthrene	100	84.8		ug/L		85	62 - 130
Benzo[g,h,i]perylene	100	72.9		ug/L		73	54 - 130
Phenol	100	80.7		ug/L		81	29 - 130
Pyrene	100	82.0		ug/L		82	60 - 130
2,4,5-Trichlorophenol	100	92.1		ug/L		92	61 - 130
2,4,6-Trichlorophenol	100	89.5		ug/L		89	57 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-291010/5-A
Matrix: Water
Analysis Batch: 291919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291010

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*78*		*39 - 130*
2-Fluorobiphenyl	*77*		*38 - 130*
Terphenyl-d14 (Surr)	*86*		*10 - 143*
Phenol-d5 (Surr)	*78*		*25 - 130*
2-Fluorophenol (Surr)	*89*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*96*		*31 - 141*

Lab Sample ID: 680-93550-15 MS
Matrix: Water
Analysis Batch: 292070

Client Sample ID: PZ03-08
Prep Type: Total/NA
Prep Batch: 291010

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	9.9	U	104	52.4	F	ug/L		51	59 - 142
Acetophenone	9.9	U	104	68.0		ug/L		65	54 - 130
Bis(2-chloroethyl)ether	9.9	U	104	76.3		ug/L		74	56 - 130
bis (2-chloroisopropyl) ether	9.9	U	104	79.1		ug/L		76	55 - 130
Bis(2-chloroethoxy)methane	9.9	U	104	64.0	F	ug/L		62	64 - 130
Caprolactam	9.9	U	104	74.3		ug/L		72	34 - 130
4-Chloroaniline	20	U	104	35.1	F	ug/L		34	42 - 130
4-Chloro-3-methylphenol	9.9	U	104	88.7		ug/L		85	60 - 130
2-Chlorophenol	9.9	U	104	75.9		ug/L		73	57 - 130
1,1'-Biphenyl	9.9	U	104	66.5		ug/L		64	54 - 130
2-Chloronaphthalene	9.9	U	104	67.1		ug/L		65	53 - 130
2,4-Dichlorophenol	9.9	U	104	81.2		ug/L		78	54 - 130
Acenaphthylene	9.9	U	104	73.9		ug/L		71	60 - 130
2,4-Dimethylphenol	9.9	U	104	75.3		ug/L		73	40 - 130
Acenaphthene	4.8	J	104	75.5		ug/L		68	55 - 130
Dimethyl phthalate	9.9	U	104	81.5		ug/L		78	69 - 130
2,4-Dinitrophenol	50	U	104	96.0		ug/L		93	20 - 165
Dibenzofuran	9.9	U	104	79.3		ug/L		76	58 - 130
2,4-Dinitrotoluene	9.9	U	104	92.5		ug/L		89	63 - 130
2,6-Dinitrotoluene	9.9	U	104	80.6		ug/L		78	65 - 130
Diethyl phthalate	9.9	U	104	93.1		ug/L		90	70 - 130
4-Chlorophenyl phenyl ether	9.9	U	104	85.3		ug/L		82	57 - 130
Fluorene	6.6	J	104	87.9		ug/L		78	61 - 130
4,6-Dinitro-2-methylphenol	50	U	104	97.1		ug/L		94	45 - 134
4-Bromophenyl phenyl ether	9.9	U	104	75.6		ug/L		73	61 - 130
Hexachlorobenzene	9.9	U	104	68.0		ug/L		66	52 - 130
Hexachlorobutadiene	9.9	U	104	59.7		ug/L		58	36 - 130
Atrazine	9.9	U	104	15.6	F	ug/L		15	66 - 130
Hexachlorocyclopentadiene	9.9	U	104	15.3		ug/L		15	10 - 130
Hexachloroethane	9.9	U	104	53.4		ug/L		51	39 - 130
Anthracene	9.9	U	104	75.9		ug/L		73	61 - 130
Isophorone	9.9	U	104	73.5		ug/L		71	59 - 130
2-Methylnaphthalene	9.9	U	104	66.4		ug/L		64	52 - 130
Carbazole	9.9	U	104	72.2		ug/L		70	67 - 130
2-Methylphenol	9.9	U	104	78.5		ug/L		76	55 - 130
Di-n-butyl phthalate	9.9	U	104	89.6		ug/L		86	66 - 130

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93550-15 MS
Matrix: Water
Analysis Batch: 292070

Client Sample ID: PZ03-08
Prep Type: Total/NA
Prep Batch: 291010

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
3 & 4 Methylphenol	9.9	U	104	80.2		ug/L		77	35 - 130
Fluoranthene	9.9	U	104	84.3		ug/L		81	56 - 130
Naphthalene	9.9	U	104	64.7		ug/L		62	50 - 130
2-Nitroaniline	50	U	104	77.3		ug/L		74	60 - 130
Butyl benzyl phthalate	9.9	U	104	92.9		ug/L		90	66 - 130
3,3'-Dichlorobenzidine	60	U	104	62	U F	ug/L		0	27 - 130
3-Nitroaniline	50	U	104	16.5	J F	ug/L		16	54 - 130
4-Nitroaniline	50	U	104	40.0	J F	ug/L		39	54 - 130
Benzo[a]anthracene	9.9	U	104	80.0		ug/L		77	58 - 130
Chrysene	9.9	U	104	80.7		ug/L		78	59 - 130
Nitrobenzene	9.9	U	104	69.1		ug/L		67	56 - 130
Bis(2-ethylhexyl) phthalate	9.9	U	104	93.9		ug/L		90	62 - 130
2-Nitrophenol	9.9	U	104	76.4		ug/L		74	54 - 130
Di-n-octyl phthalate	9.9	U	104	86.3		ug/L		83	64 - 130
4-Nitrophenol	50	U	104	102		ug/L		98	38 - 130
Benzo[b]fluoranthene	9.9	U	104	64.8		ug/L		62	51 - 130
Benzo[k]fluoranthene	9.9	U	104	62.5		ug/L		60	53 - 130
N-Nitrosodi-n-propylamine	9.9	U	104	79.0		ug/L		76	64 - 130
Benzo[a]pyrene	9.9	U	104	66.8		ug/L		64	61 - 130
N-Nitrosodiphenylamine	9.9	U	104	43.2	F	ug/L		42	68 - 130
Indeno[1,2,3-cd]pyrene	9.9	U	104	84.3		ug/L		81	47 - 130
Pentachlorophenol	50	U	104	103		ug/L		99	42 - 138
Dibenz(a,h)anthracene	9.9	U	104	69.2		ug/L		67	55 - 130
Phenanthrene	9.9	U	104	79.4		ug/L		77	62 - 130
Benzo[g,h,i]perylene	9.9	U	104	67.0		ug/L		65	54 - 130
Phenol	9.9	U	104	73.6		ug/L		71	29 - 130
Pyrene	9.9	U	104	78.2		ug/L		75	60 - 130
2,4,5-Trichlorophenol	9.9	U	104	87.8		ug/L		85	61 - 130
2,4,6-Trichlorophenol	9.9	U	104	81.1		ug/L		78	57 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*62*		*39 - 130*
2-Fluorobiphenyl	*60*		*38 - 130*
Terphenyl-d14 (Surr)	*39*		*10 - 143*
Phenol-d5 (Surr)	*61*		*25 - 130*
2-Fluorophenol (Surr)	*73*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*94*		*31 - 141*

Lab Sample ID: 680-93550-15 MSD
Matrix: Water
Analysis Batch: 291919

Client Sample ID: PZ03-08
Prep Type: Total/NA
Prep Batch: 291010

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzaldehyde	9.9	U	104	41.4	F	ug/L		40	59 - 142	24	50
Acetophenone	9.9	U	104	71.8		ug/L		69	54 - 130	5	50
Bis(2-chloroethyl)ether	9.9	U	104	77.7		ug/L		75	56 - 130	2	50
bis (2-chloroisopropyl) ether	9.9	U	104	77.9		ug/L		75	55 - 130	2	50
Bis(2-chloroethoxy)methane	9.9	U	104	76.6		ug/L		74	64 - 130	18	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93550-15 MSD
Matrix: Water
Analysis Batch: 291919

Client Sample ID: PZ03-08
Prep Type: Total/NA
Prep Batch: 291010

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Caprolactam	9.9	U	104	140	F	ug/L		135	34 - 130	61	50
4-Chloroaniline	20	U	104	16.3	J F	ug/L		16	42 - 130	73	50
4-Chloro-3-methylphenol	9.9	U	104	97.7		ug/L		94	60 - 130	10	50
2-Chlorophenol	9.9	U	104	78.0		ug/L		75	57 - 130	3	50
1,1'-Biphenyl	9.9	U	104	70.9		ug/L		69	54 - 130	6	50
2-Chloronaphthalene	9.9	U	104	70.7		ug/L		68	53 - 130	5	50
2,4-Dichlorophenol	9.9	U	104	85.2		ug/L		82	54 - 130	5	50
Acenaphthylene	9.9	U	104	82.9		ug/L		80	60 - 130	12	50
2,4-Dimethylphenol	9.9	U	104	82.5		ug/L		80	40 - 130	9	50
Acenaphthene	4.8	J	104	81.0		ug/L		74	55 - 130	7	50
Dimethyl phthalate	9.9	U	104	88.1		ug/L		85	69 - 130	8	50
2,4-Dinitrophenol	50	U	104	112		ug/L		108	20 - 165	15	50
Dibenzofuran	9.9	U	104	85.0		ug/L		82	58 - 130	7	50
2,4-Dinitrotoluene	9.9	U	104	105		ug/L		102	63 - 130	13	50
2,6-Dinitrotoluene	9.9	U	104	91.2		ug/L		88	65 - 130	12	50
Diethyl phthalate	9.9	U	104	98.1		ug/L		95	70 - 130	5	50
4-Chlorophenyl phenyl ether	9.9	U	104	86.1		ug/L		83	57 - 130	1	50
Fluorene	6.6	J	104	93.2		ug/L		84	61 - 130	6	50
4,6-Dinitro-2-methylphenol	50	U	104	101		ug/L		98	45 - 134	4	50
4-Bromophenyl phenyl ether	9.9	U	104	68.4		ug/L		66	61 - 130	10	50
Hexachlorobenzene	9.9	U	104	56.1		ug/L		54	52 - 130	19	50
Hexachlorobutadiene	9.9	U	104	55.5		ug/L		54	36 - 130	7	50
Atrazine	9.9	U	104	10	U F	ug/L		0	66 - 130	NC	50
Hexachlorocyclopentadiene	9.9	U	104	17.7		ug/L		17	10 - 130	14	50
Hexachloroethane	9.9	U	104	52.2		ug/L		50	39 - 130	2	50
Anthracene	9.9	U	104	73.9		ug/L		71	61 - 130	3	50
Isophorone	9.9	U	104	75.0		ug/L		72	59 - 130	2	50
2-Methylnaphthalene	9.9	U	104	68.4		ug/L		66	52 - 130	3	50
Carbazole	9.9	U	104	92.8		ug/L		90	67 - 130	25	50
2-Methylphenol	9.9	U	104	84.4		ug/L		82	55 - 130	7	50
Di-n-butyl phthalate	9.9	U	104	84.8		ug/L		82	66 - 130	5	50
3 & 4 Methylphenol	9.9	U	104	86.6		ug/L		84	35 - 130	8	50
Fluoranthene	9.9	U	104	84.9		ug/L		82	56 - 130	1	50
Naphthalene	9.9	U	104	67.1		ug/L		65	50 - 130	4	50
2-Nitroaniline	50	U	104	97.6		ug/L		94	60 - 130	23	50
Butyl benzyl phthalate	9.9	U	104	84.6		ug/L		82	66 - 130	9	50
3,3'-Dichlorobenzidine	60	U	104	62	U F	ug/L		0	27 - 130	NC	50
3-Nitroaniline	50	U	104	15.5	J F	ug/L		15	54 - 130	6	50
4-Nitroaniline	50	U	104	27.7	J F	ug/L		27	54 - 130	36	50
Benzo[a]anthracene	9.9	U	104	70.6		ug/L		68	58 - 130	12	50
Chrysene	9.9	U	104	72.5		ug/L		70	59 - 130	11	50
Nitrobenzene	9.9	U	104	73.3		ug/L		71	56 - 130	6	50
Bis(2-ethylhexyl) phthalate	9.9	U	104	71.9		ug/L		69	62 - 130	27	50
2-Nitrophenol	9.9	U	104	80.7		ug/L		78	54 - 130	5	50
Di-n-octyl phthalate	9.9	U	104	67.7		ug/L		65	64 - 130	24	50
4-Nitrophenol	50	U	104	136	F	ug/L		132	38 - 130	29	50
Benzo[b]fluoranthene	9.9	U	104	59.1		ug/L		57	51 - 130	9	50
Benzo[k]fluoranthene	9.9	U	104	58.5		ug/L		57	53 - 130	7	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-93550-15 MSD
Matrix: Water
Analysis Batch: 291919

Client Sample ID: PZ03-08
Prep Type: Total/NA
Prep Batch: 291010

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
N-Nitrosodi-n-propylamine	9.9	U	104	82.9		ug/L		80	64 - 130	5	50
Benzo[a]pyrene	9.9	U	104	56.6	F	ug/L		55	61 - 130	16	50
N-Nitrosodiphenylamine	9.9	U	104	48.1	F	ug/L		46	68 - 130	11	50
Indeno[1,2,3-cd]pyrene	9.9	U	104	65.3		ug/L		63	47 - 130	25	50
Pentachlorophenol	50	U	104	110		ug/L		106	42 - 138	7	50
Dibenz(a,h)anthracene	9.9	U	104	61.1		ug/L		59	55 - 130	12	50
Phenanthrene	9.9	U	104	79.6		ug/L		77	62 - 130	0	50
Benzo[g,h,i]perylene	9.9	U	104	56.5		ug/L		55	54 - 130	17	50
Phenol	9.9	U	104	79.8		ug/L		77	29 - 130	8	50
Pyrene	9.9	U	104	75.4		ug/L		73	60 - 130	4	50
2,4,5-Trichlorophenol	9.9	U	104	99.4		ug/L		96	61 - 130	12	50
2,4,6-Trichlorophenol	9.9	U	104	92.5		ug/L		89	57 - 130	13	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*70*		*39 - 130*
2-Fluorobiphenyl	*71*		*38 - 130*
Terphenyl-d14 (Surr)	*40*		*10 - 143*
Phenol-d5 (Surr)	*72*		*25 - 130*
2-Fluorophenol (Surr)	*78*		*25 - 130*
2,4,6-Tribromophenol (Surr)	*116*		*31 - 141*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 680-290745/6
Matrix: Solid
Analysis Batch: 290745

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/26/13 11:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*85*		*70 - 131*		*08/26/13 11:49*	*1*

Lab Sample ID: LCS 680-290745/7
Matrix: Solid
Analysis Batch: 290745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	934		ug/Kg		93	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*83*		*70 - 131*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCSD 680-290745/8
Matrix: Solid
Analysis Batch: 290745

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	927		ug/Kg		93	64 - 133	1	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*89*		*70 - 131*

Lab Sample ID: MB 680-290971/17
Matrix: Solid
Analysis Batch: 290971

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/27/13 15:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*91*		*70 - 131*		*08/27/13 15:49*	*1*

Lab Sample ID: LCS 680-290971/18
Matrix: Solid
Analysis Batch: 290971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	975		ug/Kg		98	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*87*		*70 - 131*

Lab Sample ID: LCSD 680-290971/19
Matrix: Solid
Analysis Batch: 290971

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	892		ug/Kg		89	64 - 133	9	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*86*		*70 - 131*

Lab Sample ID: MB 680-291184/5
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	12.8	J	50	11	ug/L			08/28/13 10:51	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: MB 680-291184/5
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	92		70 - 130		08/28/13 10:51	1

Lab Sample ID: LCS 680-291184/6
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	200	156		ug/L		78	70 - 148

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	87		70 - 130

Lab Sample ID: LCSD 680-291184/7
Matrix: Water
Analysis Batch: 291184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	200	156		ug/L		78	70 - 148	0	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	88		70 - 130

Lab Sample ID: MB 680-291258/7
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/28/13 16:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	99		70 - 131		08/28/13 16:41	1

Lab Sample ID: LCS 680-291258/6
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1000	995		ug/Kg		99	64 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	90		70 - 131

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: LCSD 680-291258/8
Matrix: Solid
Analysis Batch: 291258

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	954		ug/Kg		95	64 - 133	4	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*86*		*70 - 131*

Lab Sample ID: MB 680-291393/7
Matrix: Solid
Analysis Batch: 291393

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	250	U	250	19	ug/Kg			08/29/13 11:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*90*		*70 - 131*		*08/29/13 11:46*	*1*

Lab Sample ID: LCS 680-291393/8
Matrix: Solid
Analysis Batch: 291393

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			1000	878		ug/Kg		88	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*89*		*70 - 131*

Lab Sample ID: LCSD 680-291393/9
Matrix: Solid
Analysis Batch: 291393

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			1000	1020		ug/Kg		102	64 - 133	15	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*89*		*70 - 131*

Lab Sample ID: MB 680-291550/8
Matrix: Solid
Analysis Batch: 291550

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	5000	U	5000	380	ug/Kg			08/30/13 12:05	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics) (Continued)

Lab Sample ID: MB 680-291550/8
Matrix: Solid
Analysis Batch: 291550

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	94		70 - 131		08/30/13 12:05	1

Lab Sample ID: LCS 680-291550/9
Matrix: Solid
Analysis Batch: 291550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C10			40000	36000		ug/Kg		90	64 - 133		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	94		70 - 131

Lab Sample ID: LCSD 680-291550/10
Matrix: Solid
Analysis Batch: 291550

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10			40000	37400		ug/Kg		94	64 - 133	4	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	99		70 - 131

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 490-103111/1-A
Matrix: Water
Analysis Batch: 103307

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103111

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	36.2	J	100	28	ug/L		08/28/13 07:23	08/28/13 17:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	85		50 - 150	08/28/13 07:23	08/28/13 17:09	1

Lab Sample ID: LCS 490-103111/2-A
Matrix: Water
Analysis Batch: 103307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103111

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			1000	542		ug/L		54	46 - 132		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	77		50 - 150

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: MB 490-103148/1-A
Matrix: Solid
Analysis Batch: 103532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103148

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5000	U	5000	1400	ug/Kg		08/28/13 08:56	08/29/13 17:31	1
ORO C24-C40	2800	J	5000	1400	ug/Kg		08/28/13 08:56	08/29/13 17:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*83*		*50 - 150*	*08/28/13 08:56*	*08/29/13 17:31*	*1*

Lab Sample ID: LCS 490-103148/2-A
Matrix: Solid
Analysis Batch: 103532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103148

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	40000	30300		ug/Kg		76	54 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*88*		*50 - 150*

Lab Sample ID: MB 490-104020/1-A
Matrix: Water
Analysis Batch: 104122

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	100	U	100	28	ug/L		08/30/13 15:58	09/01/13 00:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*90*		*50 - 150*	*08/30/13 15:58*	*09/01/13 00:52*	*1*

Lab Sample ID: LCS 490-104020/2-A
Matrix: Water
Analysis Batch: 104122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 104020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	1000	851		ug/L		85	46 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*98*		*50 - 150*

Lab Sample ID: MB 490-104903/1-A
Matrix: Solid
Analysis Batch: 104870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	5000	U	5000	1400	ug/Kg		09/05/13 12:12	09/06/13 02:24	1
ORO C24-C40	1500	J	5000	1400	ug/Kg		09/05/13 12:12	09/06/13 02:24	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: MB 490-104903/1-A
Matrix: Solid
Analysis Batch: 104870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104903

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	*75*		*50 - 150*	*09/05/13 12:12*	*09/06/13 02:24*	*1*

Lab Sample ID: LCS 490-104903/2-A
Matrix: Solid
Analysis Batch: 104870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 104903

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			40000	33800		ug/Kg		84	54 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	*88*		*50 - 150*

GC/MS VOA

Prep Batch: 189751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	5035	
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	5035	
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	5035	
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	5035	
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	5035	
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	5035	
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	5035	
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	5035	
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	5035	
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	5035	
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	5035	
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	5035	

Analysis Batch: 190016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	8260B	189751
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	8260B	189751
LCS 400-190016/1000	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 400-190016/11	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 400-190016/4	Method Blank	Total/NA	Solid	8260B	

Analysis Batch: 190203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-13	PZ02-08	Total/NA	Water	8260B	
680-93550-14	PZ03-04	Total/NA	Water	8260B	
680-93550-15	PZ03-08	Total/NA	Water	8260B	
680-93550-16	TB01 (082213)	Total/NA	Water	8260B	
LCS 400-190203/1000	Lab Control Sample	Total/NA	Water	8260B	
MB 400-190203/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 190276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	8260B	189751
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	8260B	189751
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	8260B	189751
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	8260B	189751
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	8260B	189751
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	8260B	189751
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	8260B	189751
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	8260B	189751
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	8260B	189751
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	8260B	189751
LCS 400-190276/1000	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 400-190276/3	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 400-190276/5	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 290868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	3546	
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	3546	
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	3546	
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	3546	
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	3546	
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	3546	
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	3546	
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	3546	
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	3546	
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	3546	
LCS 680-290868/20-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-290868/19-A	Method Blank	Total/NA	Solid	3546	

Prep Batch: 291010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-13	PZ02-08	Total/NA	Water	3520C	
680-93550-15	PZ03-08	Total/NA	Water	3520C	
680-93550-15 MS	PZ03-08	Total/NA	Water	3520C	
680-93550-15 MSD	PZ03-08	Total/NA	Water	3520C	
680-93588-1	PZ03-04	Total/NA	Water	3520C	
LCS 680-291010/5-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-291010/4-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 291044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	8270D	290868
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	8270D	290868
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	8270D	290868
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	8270D	290868
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	8270D	290868
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	8270D	290868
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	8270D	290868
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	8270D	290868
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	8270D	290868
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	8270D	290868
LCS 680-290868/20-A	Lab Control Sample	Total/NA	Solid	8270D	290868
MB 680-290868/19-A	Method Blank	Total/NA	Solid	8270D	290868

Prep Batch: 291642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	3546	
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	3546	

Analysis Batch: 291919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	8270D	291642
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	8270D	291642
680-93550-15 MSD	PZ03-08	Total/NA	Water	8270D	291010
680-93588-1	PZ03-04	Total/NA	Water	8270D	291010
LCS 680-291010/5-A	Lab Control Sample	Total/NA	Water	8270D	291010
MB 680-291010/4-A	Method Blank	Total/NA	Water	8270D	291010

GC/MS Semi VOA (Continued)

Analysis Batch: 292070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-13	PZ02-08	Total/NA	Water	8270D	291010
680-93550-15	PZ03-08	Total/NA	Water	8270D	291010
680-93550-15 MS	PZ03-08	Total/NA	Water	8270D	291010

GC VOA

Analysis Batch: 290745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	8015C	290836
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	8015C	290836
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	8015C	290836
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	8015C	290836
LCS 680-290745/7	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290745/8	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290745/6	Method Blank	Total/NA	Solid	8015C	

Prep Batch: 290836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	5035	
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	5035	
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	5035	
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	5035	
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	5035	
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	5035	
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	5035	
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	5035	
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	5035	
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	5035	
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	5035	
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	5035	

Analysis Batch: 290971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	8015C	290836
LCS 680-290971/18	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-290971/19	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-290971/17	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 291184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-13	PZ02-08	Total/NA	Water	8015C	
680-93550-14	PZ03-04	Total/NA	Water	8015C	
680-93550-15	PZ03-08	Total/NA	Water	8015C	
LCS 680-291184/6	Lab Control Sample	Total/NA	Water	8015C	
LCSD 680-291184/7	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 680-291184/5	Method Blank	Total/NA	Water	8015C	

Analysis Batch: 291258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	8015C	290836

GC VOA (Continued)

Analysis Batch: 291258 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-291258/6	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-291258/8	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-291258/7	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 291393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	8015C	290836
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	8015C	290836
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	8015C	290836
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	8015C	290836
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	8015C	290836
LCS 680-291393/8	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-291393/9	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-291393/7	Method Blank	Total/NA	Solid	8015C	

Analysis Batch: 291550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	8015C	290836
LCS 680-291550/9	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-291550/10	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-291550/8	Method Blank	Total/NA	Solid	8015C	

GC Semi VOA

Prep Batch: 103111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-13	PZ02-08	Total/NA	Water	3510C	
680-93550-17	PZ02-08 (DRO-SGT)	Total/NA	Water	3510C	
680-93588-1	PZ03-04	Total/NA	Water	3510C	
680-93588-2	PZ03-04 (DRO-SGT)	Total/NA	Water	3510C	
LCS 490-103111/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 490-103111/1-A	Method Blank	Total/NA	Water	3510C	

Prep Batch: 103148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	3550C	
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	3550C	
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	3550C	
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	3550C	
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	3550C	
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	3550C	
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	3550C	
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	3550C	
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	3550C	
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	3550C	
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	3550C	
LCS 490-103148/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-103148/1-A	Method Blank	Total/NA	Solid	3550C	

GC Semi VOA (Continued)

Analysis Batch: 103307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-13	PZ02-08	Total/NA	Water	8015C	103111
680-93550-17	PZ02-08 (DRO-SGT)	Total/NA	Water	8015C	103111
680-93588-1	PZ03-04	Total/NA	Water	8015C	103111
680-93588-2	PZ03-04 (DRO-SGT)	Total/NA	Water	8015C	103111
LCS 490-103111/2-A	Lab Control Sample	Total/NA	Water	8015C	103111
MB 490-103111/1-A	Method Blank	Total/NA	Water	8015C	103111

Analysis Batch: 103532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	8015C	103148
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	8015C	103148
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	8015C	103148
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	8015C	103148
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	8015C	103148
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	8015C	103148
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	8015C	103148
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	8015C	103148
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	8015C	103148
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	8015C	103148
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	8015C	103148
LCS 490-103148/2-A	Lab Control Sample	Total/NA	Solid	8015C	103148
MB 490-103148/1-A	Method Blank	Total/NA	Solid	8015C	103148

Prep Batch: 104020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-15	PZ03-08	Total/NA	Water	3510C	
680-93550-19	PZ03-08 (DRO-SGT)	Total/NA	Water	3510C	
LCS 490-104020/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 490-104020/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 104122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-15	PZ03-08	Total/NA	Water	8015C	104020
680-93550-19	PZ03-08 (DRO-SGT)	Total/NA	Water	8015C	104020
LCS 490-104020/2-A	Lab Control Sample	Total/NA	Water	8015C	104020
MB 490-104020/1-A	Method Blank	Total/NA	Water	8015C	104020

Analysis Batch: 104870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	8015C	104903
LCS 490-104903/2-A	Lab Control Sample	Total/NA	Solid	8015C	104903
MB 490-104903/1-A	Method Blank	Total/NA	Solid	8015C	104903

Prep Batch: 104903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	3550C	
LCS 490-104903/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-104903/1-A	Method Blank	Total/NA	Solid	3550C	

General Chemistry

Analysis Batch: 290860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-93550-1	SB03-06 (0.0-1.0)	Total/NA	Solid	Moisture	
680-93550-2	SB03-06 (2.5-3.5)	Total/NA	Solid	Moisture	
680-93550-3	SB03-07 (1.5-2.5)	Total/NA	Solid	Moisture	
680-93550-4	SB03-07 (4.5-5.5)	Total/NA	Solid	Moisture	
680-93550-5	SB03-08 (1.0-2.0)	Total/NA	Solid	Moisture	
680-93550-6	SB03-08 (3.0-4.0)	Total/NA	Solid	Moisture	
680-93550-7	SB03-09 (1.0-2.0)	Total/NA	Solid	Moisture	
680-93550-8	SB03-09 (3.5-4.5)	Total/NA	Solid	Moisture	
680-93550-9	SB03-10 (0.5-1.5)	Total/NA	Solid	Moisture	
680-93550-10	SB03-10 (5.5-6.5)	Total/NA	Solid	Moisture	
680-93550-11	SB03-05 (0.0-1.0)	Total/NA	Solid	Moisture	
680-93550-12	SB03-05 (3.5-4.5)	Total/NA	Solid	Moisture	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-06 (0.0-1.0)

Lab Sample ID: 680-93550-1

Date Collected: 08/22/13 08:45
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 65.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:10	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190016	08/28/13 18:26	CAR	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 20:13	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 15:50	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 18:52	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-06 (2.5-3.5)

Lab Sample ID: 680-93550-2

Date Collected: 08/22/13 08:55
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:10	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190016	08/28/13 18:49	CAR	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 14:36	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 16:10	AJMC	TAL SAV
Total/NA	Prep	3550C			104903	09/05/13 12:12	AJK	TAL NSH
Total/NA	Analysis	8015C		1	104870	09/06/13 04:11	JLF	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-07 (1.5-2.5)

Lab Sample ID: 680-93550-3

Date Collected: 08/22/13 10:00
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:12	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 13:06	ARM	TAL PEN
Total/NA	Prep	3546			291642	08/30/13 14:23	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291919	09/03/13 20:23	SMC	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	290971	08/27/13 18:31	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 19:24	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-07 (4.5-5.5)

Lab Sample ID: 680-93550-4

Date Collected: 08/22/13 10:10
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 74.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:12	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 13:34	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 15:24	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 16:49	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 19:40	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-08 (1.0-2.0)

Lab Sample ID: 680-93550-5

Date Collected: 08/22/13 10:30
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 75.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:12	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 14:02	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 15:48	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	290745	08/26/13 17:09	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 19:56	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-08 (3.0-4.0)

Lab Sample ID: 680-93550-6

Date Collected: 08/22/13 10:40
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:12	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 14:29	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 16:13	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	291258	08/28/13 22:59	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 20:12	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-09 (1.0-2.0)

Lab Sample ID: 680-93550-7

Date Collected: 08/22/13 10:50
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 76.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:13	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 14:57	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 16:37	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	291393	08/29/13 13:08	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 20:28	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-09 (3.5-4.5)

Lab Sample ID: 680-93550-8

Date Collected: 08/22/13 11:00
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 82.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:13	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 15:25	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 17:01	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	291393	08/29/13 13:28	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 20:44	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-10 (0.5-1.5)

Lab Sample ID: 680-93550-9

Date Collected: 08/22/13 11:30
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 58.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:13	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 15:52	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 17:25	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	291393	08/29/13 13:48	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 21:00	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: SB03-10 (5.5-6.5)

Lab Sample ID: 680-93550-10

Date Collected: 08/22/13 11:40
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:13	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 16:20	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 17:50	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	291393	08/29/13 14:07	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 21:16	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-05 (0.0-1.0)

Lab Sample ID: 680-93550-11

Date Collected: 08/22/13 09:15
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 80.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:13	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 16:48	ARM	TAL PEN
Total/NA	Prep	3546			290868	08/26/13 14:24	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291044	08/27/13 18:14	SMP	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	291393	08/29/13 14:27	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 21:32	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Client Sample ID: SB03-05 (3.5-4.5)

Lab Sample ID: 680-93550-12

Date Collected: 08/22/13 09:25
Matrix: Solid
Date Received: 08/23/13 09:28
Percent Solids: 81.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			189751	08/26/13 08:14	ARM	TAL PEN
Total/NA	Analysis	8260B		1	190276	08/30/13 17:15	ARM	TAL PEN
Total/NA	Prep	3546			291642	08/30/13 14:23	JCS	TAL SAV
Total/NA	Analysis	8270D		1	291919	09/03/13 20:49	SMC	TAL SAV
Total/NA	Prep	5035			290836	08/26/13 09:31	FES	TAL SAV
Total/NA	Analysis	8015C		1	291550	08/30/13 13:44	AJMC	TAL SAV
Total/NA	Prep	3550C			103148	08/28/13 08:56	JLP	TAL NSH
Total/NA	Analysis	8015C		1	103532	08/29/13 21:48	JML	TAL NSH
Total/NA	Analysis	Moisture		1	290860	08/26/13 11:20	MDK	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: PZ02-08

Lab Sample ID: 680-93550-13

Date Collected: 08/22/13 14:00
Matrix: Water
Date Received: 08/23/13 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190203	08/30/13 00:46	WPD	TAL PEN
Total/NA	Prep	3520C			291010	08/27/13 14:50	RBS	TAL SAV
Total/NA	Analysis	8270D		1	292070	09/04/13 12:38	SMC	TAL SAV
Total/NA	Analysis	8015C		1	291184	08/28/13 13:25	AJMC	TAL SAV
Total/NA	Prep	3510C			103111	08/28/13 07:23	CLH	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/28/13 18:12	JML	TAL NSH

Client Sample ID: PZ03-04

Lab Sample ID: 680-93550-14

Date Collected: 08/22/13 12:30
Matrix: Water
Date Received: 08/23/13 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190203	08/30/13 01:12	WPD	TAL PEN
Total/NA	Analysis	8015C		1	291184	08/28/13 13:50	AJMC	TAL SAV

Client Sample ID: PZ03-08

Lab Sample ID: 680-93550-15

Date Collected: 08/22/13 13:08
Matrix: Water
Date Received: 08/23/13 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190203	08/30/13 01:37	WPD	TAL PEN
Total/NA	Prep	3520C			291010	08/27/13 14:50	RBS	TAL SAV
Total/NA	Analysis	8270D		1	292070	09/04/13 13:04	SMC	TAL SAV
Total/NA	Analysis	8015C		1	291184	08/28/13 14:16	AJMC	TAL SAV
Total/NA	Prep	3510C			104020	08/30/13 15:58	CLH	TAL NSH
Total/NA	Analysis	8015C		10	104122	09/01/13 11:22	JLF	TAL NSH

Client Sample ID: TB01 (082213)

Lab Sample ID: 680-93550-16

Date Collected: 08/22/13 00:00
Matrix: Water
Date Received: 08/23/13 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	190203	08/30/13 02:03	WPD	TAL PEN

Client Sample ID: PZ02-08 (DRO-SGT)

Lab Sample ID: 680-93550-17

Date Collected: 08/22/13 14:00
Matrix: Water
Date Received: 08/23/13 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			103111	08/28/13 07:23	CLH	TAL NSH
Total/NA	Analysis	8015C		1	103307	08/28/13 18:44	JML	TAL NSH

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Client Sample ID: PZ03-08 (DRO-SGT)

Lab Sample ID: 680-93550-19

Date Collected: 08/22/13 13:08
Matrix: Water
Date Received: 08/23/13 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			104020	08/30/13 15:58	CLH	TAL NSH
Total/NA	Analysis	8015C		5	104122	09/01/13 11:37	JLF	TAL NSH

Client Sample ID: PZ03-04

Lab Sample ID: 680-93588-1

Date Collected: 08/22/13 12:30
Matrix: Water
Date Received: 08/24/13 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			291010	08/27/13 14:50	RBS	TAL SAV
Total/NA	Analysis	8270D		1	291919	09/03/13 19:06	SMC	TAL SAV
Total/NA	Prep	3510C			103111	08/28/13 07:23	CLH	TAL NSH
Total/NA	Analysis	8015C		25	103307	08/29/13 11:20	JML	TAL NSH

Client Sample ID: PZ03-04 (DRO-SGT)

Lab Sample ID: 680-93588-2

Date Collected: 08/22/13 12:30
Matrix: Water
Date Received: 08/24/13 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			103111	08/28/13 12:47	CLH	TAL NSH
Total/NA	Analysis	8015C		25	103307	08/29/13 11:36	JML	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CSXT CHAIN/PROJECT ☆

ARCADIS
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ID#: 130822

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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Lab Work Order #

Send Results to:

Contact & Company Name: MEGAN KELLNER ARCADIS
Telephone: 410.987.3200
Address: 1114 BENFIELD BLVD.
Fax: 410.907.4342
City: Millersville State: MD Zip: 21108
E-mail Address: megan.kellner@arcadis-us.com
Project Name/Location (City, State): CSX CAMAK / BRUNSWICK RAIL YARD
Project #: MD000843.0011.00004
Sampler's Printed Name: LAUREN LAMP
Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	8015C-GRO	8260B-(MeO) VOCs	8270D	8015C-DRO	8260B-(MeO) Fuel Oxygenates	8015C-DRO DRO/SGT	8015C-GRO	8270D-TCL	REMARKS
						Terracore	Terracore	—	—	HCL	HCL	HCL	—					
								1xTC	1xTC	1	1	2	3	2	1			
						TC	TC	4oz JAR	4oz JAR	40 ml VOA	40 ml VOA	Ambers						
SB03-09 (3.5-4.0)	8/22/13	1100		✓	SO	X	X											
SB03-09 (3.5-4.5)		1100		✓				X	X									
SB03-10 (0.5-1.0)		1130		✓		X	X											
SB03-10 (0.5-1.5)		1130		✓	☆			X	X									
SB03-10 (5.5-6.0)		1140		✓	SO	X	X											
SB03-10 (5.5-6.5)		1140		✓				X	X									
SB03-05 (0.5-1.0)		0915		✓		X	X											
SB03-05 (0.0-1.0)		0915		✓				X	X									2-8°C / 4.0°C
SB03-05 (4.0-4.5)	↓	0925		✓	☆	X	X											
SB03-05 (3.5-4.5)	8/22/13	0925		✓	SO			X	X									
PZ02-08	8/21/13	1400		✓	GW	NO BTEX						X	X	X	X			☆
PZ03-04	8/22/13	1230		✓	GW							X	X	X	X			
PZ03-08	8/22/13	1308		✓	GW							X	X	X	X			HAS 4 AMBERS FOR 8015C-GRO AND 2 AMBERS FOR 8270D
TB01 (082213)	8/22/13	—	—	—	—	NO BTEX	X											

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: G. Other: H. Other:

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 10. Other:

Matrix Key: SO - Soil SE - Sediment NL - NAPL/Oil W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other:

Special Instructions/Comments: CSXT PROJECT INFO
PN: 9415381
CSXT CONTACT: PAUL KURZANSKI LOGON: ENV33683

Special QA/QC Instructions(✓): CSXT STANDARD (LEVEL II)
680-93550

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: TEST AMERICA	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: LAUREN LAMP	Printed Name: Paul Gayleard	Printed Name:	Printed Name: E. Barnett
☑ Cooler packed with ice (✓)		Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: CSXT STANDARD 14 DAYS	Sample Receipt:	Firm: ARCADIS	Firm/Courier: TestAmerica	Firm/Courier:	Firm: TA SAV
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 8-22-13/1645	Date/Time: 8/22/13 /1650	Date/Time:	Date/Time: 08/23/13 0928

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☆ DRO + SILICA + ARO-SGT Ambers NOT received — 8/23/13

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CSX T CHAIN *

ARCADIS
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ID#: 130822

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order #

Send Results to:

Contact & Company Name: MEGAN KELLNER ARCADIS	Telephone: (410) 987.0032
Address: 1114 BENFIELD BLVD.	Fax: 410.907.4342
City: MILLERSVILLE State: MD Zip: 21108	E-mail Address: megan.kellner@arcadis-us.com
Project Name/Location (City, State): CSX CANAL/BRUNSWICK RAIL YARD MD	Project #: MD000843.0011.00004
Sampler's Printed Name: LAUREN LAMP	Sampler's Signature: Lauren Lamp

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	8015C - GRO	8260B - (MOD) VOC's	8270D SIM	8015C - DRO
						Terracore		1+TC	Terracore				
						Terracore		1+TC	1+TC				
						—		1	40 ml VOA Jar				
						—		1	4 oz. Jar				
SB03-06 (0.5-1.0)	8/22/13	0845		✓	SO					X	X		
SB03-06 (0.0-1.0)		0845		✓								X	X
SB03-06 (3.0-3.5)		0855		✓						X	X		
SB03-06 (2.5-3.5)		0855		✓								X	X
SB03-07 (1.5-2.0)		1000		✓						X	X		
SB03-07 (1.5-2.5)		1000		✓	SO							X	X
SB03-07 (4.5-5.0)		1010		✓						X	X		
SB03-07 (4.5-5.5)	8/22/13	1010		✓								X	X
SB03-08 (1.5-2.0)		1030		✓						X	X		
SB03-08 (1.0-2.0)		1030		✓								X	X
SB03-08 (3.0-3.5)		1040		✓	SO					X	X		
SB03-08 (3.0-4.0)		1040		✓								X	X
SB03-09 (1.5-2.0)		1050		✓						X	X		
SB03-09 (1.0-2.0)	8/22/13	1050		✓	SO							X	X

Keys

Preservation Key: A. H_2SO_4; B. HCL; C. HNO_3; D. NaOH; E. None; F. Other: ____; G. Other: ____; H. Other: ____

Container Information Key: 1. 40 ml Vial; 2. 1 L Amber; 3. 250 ml Plastic; 4. 500 ml Plastic; 5. Encore; 6. 2 oz. Glass; 7. 4 oz. Glass; 8. 8 oz. Glass; 9. Other: ____; 10. Other: ____

Matrix Key: SO - Soil; W - Water; T - Tissue; SE - Sediment; SL - Sludge; A - Air; NL - NAPL/Oil; SW - Sample Wipe; Other: ____

REMARKS

680 —
93550
2.8°C
4.0°C

Special Instructions/Comments: CSXT PROJECT INFO
PN: 941538I PROJECT NAME: C+O CANAL/BRUNSWICK RAIL YARD, MD
CSXT CONTACT: PAUL KURZANSKI LWON: ENV33683

Special QA/QC Instructions (✓): ☒ CSXT STANDARD 14 DAYS CSXT STANDARD (LEVEL II)

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: TEST AMERICA	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: LAUREN LAMP	Printed Name: Paul Gayleard	Printed Name:	Printed Name: E. Barnett
☒ Cooler packed with ice (✓)		Signature: Lauren Lamp	Signature: Paul Gayleard	Signature:	Signature:
Specify Turnaround Requirements: CSXT STANDARD 14 DAYS	Sample Receipt:	Firm: ARCADIS	Firm/Courier: Test America	Firm/Courier:	Firm: TA SAV
Shipping Tracking #:	Condition/Cooler Temp: ____	Date/Time: 8-22-13/1645	Date/Time: 8/22/13 1650	Date/Time:	Date/Time: 08/23/13 0928

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CSXT CHAIN

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ID#: 130823-2

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #

Send Results to:

Contact & Company Name: MEGAN KELLNER / ARCADIS	Telephone: 410.987.3200
Address: 1114 BENFIELD BLVD	Fax: 410.907.4342
City: MILLERSVILLE State: MD Zip: 21108	E-mail Address: megan.kellner@arcadis-us.com
Project Name/Location (City, State): CSXT CHATTANOOGA / BRUNSWICK RAILYARD	Project #: MD000843.0011.00004
Sampler's Printed Name: LAUREN LAMP	Sampler's Signature:

Preservative	NONE	HCL	HCL
Filtered (✓)			
# of Containers	1	1	
Container Information	AMBER	AMBER	

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270D	SVOC	8015-B DRO	8015-C DRO-SGT
PZ03-04	8/22/13	1230		X	GW	X			
PZ03-04	8/22/13	1230		X	GW		X		

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

REMARKS

THIS GOES TO TA SAVANNAH

THIS GOES TO TA NASHVILLE

680-93588 Chain of Custody

1.6°C
680-93588

Special Instructions/Comments: CSXT PROJECT INFO
PN: 9415381 PROJECT NAME: CHO CANAL / BRUNSWICK RAILYARD STATE: MD
CSXT CONTACT: PAUL KURZANSKI ANON: ENV33683

Special QA/QC Instructions(✓): X CSXT STANDARD (LEVEL II)

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: TEST AMERICA	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: LAUREN LAMP	Printed Name:	Printed Name: Ray Gayleard	Printed Name: KEATON CONNER
X Cooler packed with ice (✓)		Signature:	Signature: Ken Ives	Signature:	Signature:
Specify Turnaround Requirements: CSXT STANDARD - 14 DAYS	Sample Receipt:	Firm: ARCADIS	Firm/Courier: TestAmerica	Firm/Courier: TestAmerica	Firm: TA SV
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 8-23-13 / 1455	Date/Time: 8-23-2013 / 1455	Date/Time: 8/23/13 / 1610	Date/Time: 08/24/13 0838

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

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9/9/2013

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93550-1

Login Number: 93550

List Source: TestAmerica Savannah

List Number: 1

Creator: Barnett, Eddie T

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	One liter for -13 and two liters for -14 not received in Savannah
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93550-1

Login Number: 93550
List Number: 1
Creator: Gambill, Shane

List Source: TestAmerica Nashville
List Creation: 08/23/13 05:42 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93550-1

Login Number: 93550
List Number: 2
Creator: Gambill, Shane

List Source: TestAmerica Nashville
List Creation: 08/23/13 05:44 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93550-1

Login Number: 93550
List Number: 1
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/23/13 01:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9°C IR2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93550-1

Login Number: 93550
List Number: 2
Creator: Meade, Chris J

List Source: TestAmerica Pensacola
List Creation: 08/23/13 02:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9°C IR2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93550-1

Login Number: 93588

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-93550-1

Login Number: 93588
List Number: 1
Creator: McBride, Mike

List Source: TestAmerica Nashville
List Creation: 08/24/13 11:03 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	07-31-14
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-13 *
Arkansas DEQ	State Program	6	88-0692	02-01-14 *
California	NELAP	9	3217CA	07-31-14 *
Colorado	State Program	8	N/A	12-31-13
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-13 *
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14
South Carolina	State Program	4	98001	06-30-13 *
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13
West Virginia DEP	State Program	3	94	09-30-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-Q	06-30-13 *

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Laboratory: TestAmerica Nashville (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-15
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-13
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14
Arizona	State Program	9	AZ0710	01-11-14
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-14
Georgia	State Program	4	N/A	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Savannah

Client: ARCADIS U.S., Inc.
Project/Site: CSX C&O Canal Brunswick, MD

TestAmerica Job ID: 680-93550-1

Laboratory: TestAmerica Pensacola (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	200041	10-09-13
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-13
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-13 *
Michigan	State Program	5	9912	06-30-13 *
New Jersey	NELAP	2	FL006	06-30-13 *
North Carolina DENR	State Program	4	314	12-31-13
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-14
Rhode Island	State Program	1	LAO00307	12-31-13
South Carolina	State Program	4	96026	06-30-13 *
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-91732-1
Client Project/Site: C&O Canal Brunswick Railyd

For:
ARCADIS U.S., Inc.
1114 Benfield Blvd.
Suite A
Millersville, Maryland 21108

Attn: Joshua Wilson

Authorized for release by:
7/12/2013 2:05:01 PM

Lisa Harvey, Project Manager II
lisa.harvey@testamericainc.com

Job ID: 680-91732-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: C&O Canal Brunswick Railyd
Report Number: 680-91732-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 06/26/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.2 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Sample NPS MW-18 (8.0-8.5) (680-91732-1) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

GASOLINE RANGE ORGANICS (GRO)
Sample NPS MW-18 (8-9) (680-91732-2) was analyzed for gasoline range organics (GRO) in accordance with SW 846 8015C DRO.

DIESEL RANGE ORGANICS (DRO)
Sample NPS MW-18 (8-9) (680-91732-2) was analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Method(s) 8015C: Surrogate recovery for the following sample(s) was outside control limits: NPS MW-18 (8-9) (680-91732-2).
Re-extraction and/or re-analysis was performed with concurring results. Both sets of data have been reported.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: C&O Canal Brunswick Railyd

TestAmerica Job ID: 680-91732-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-91732-1	NPS MW-18 (8.0-8.5)	Solid	06/24/13 12:50	06/26/13 10:57
680-91732-2	NPS MW-18 (8-9)	Solid	06/24/13 12:50	06/26/13 10:57

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: C&O Canal Brunswick Railyd

TestAmerica Job ID: 680-91732-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S., Inc.
Project/Site: C&O Canal Brunswick Railyd

TestAmerica Job ID: 680-91732-1

Client Sample ID: NPS MW-18 (8.0-8.5)
Date Collected: 06/24/13 12:50
Date Received: 06/26/13 10:57

Lab Sample ID: 680-91732-1
Matrix: Solid
Percent Solids: 79.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22	U	22	6.3	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Benzene	4.3	U	4.3	0.42	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Bromodichloromethane	4.3	U	4.3	0.73	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Bromoform	4.3	U	4.3	0.54	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Bromomethane	4.3	U	4.3	1.2	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Carbon disulfide	4.3	U	4.3	1.0	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Carbon tetrachloride	4.3	U	4.3	1.5	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Chlorobenzene	4.3	U	4.3	0.45	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Chloroethane	4.3	U	4.3	1.6	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Chloroform	4.3	U	4.3	0.51	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Chloromethane	4.3	U	4.3	0.86	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
cis-1,2-Dichloroethene	4.3	U	4.3	0.66	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
cis-1,3-Dichloropropene	4.3	U	4.3	1.0	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Cyclohexane	4.3	U	4.3	0.81	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Dibromochloromethane	4.3	U	4.3	0.75	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,2-Dibromo-3-Chloropropane	4.3	U	4.3	2.9	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,2-Dichlorobenzene	4.3	U	4.3	0.61	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,3-Dichlorobenzene	4.3	U	4.3	0.82	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,4-Dichlorobenzene	4.3	U	4.3	0.71	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Dichlorodifluoromethane	4.3	U	4.3	1.1	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,1-Dichloroethane	4.3	U	4.3	0.72	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,2-Dichloroethane	4.3	U	4.3	0.71	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,1-Dichloroethene	4.3	U	4.3	0.65	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,2-Dichloropropane	4.3	U	4.3	0.64	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Diisopropyl ether	4.3	U	4.3	0.48	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Ethylbenzene	4.3	U	4.3	0.53	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Ethylene Dibromide	4.3	U	4.3	0.42	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Ethyl tert-butyl ether	4.3	U	4.3	0.48	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
2-Hexanone	22	U	22	4.3	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Isopropylbenzene	4.3	U	4.3	0.59	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Methyl acetate	4.3	U	4.3	4.0	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Methylcyclohexane	4.3	U	4.3	0.75	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Methylene Chloride	13	U	13	8.6	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Methyl Ethyl Ketone	22	U	22	3.5	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
methyl isobutyl ketone	22	U	22	3.5	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Methyl tert-butyl ether	4.3	U	4.3	0.86	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Naphthalene	4.3	U	4.3	0.86	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Styrene	4.3	U	4.3	0.66	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Tert-amyl methyl ether	4.3	U	4.3	0.38	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
tert-Butyl alcohol	4.3	U	4.3	2.9	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,1,2,2-Tetrachloroethane	4.3	U	4.3	0.62	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Tetrachloroethene	4.3	U	4.3	0.73	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Toluene	4.3	U	4.3	0.61	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
trans-1,2-Dichloroethene	4.3	U	4.3	0.66	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
trans-1,3-Dichloropropene	4.3	U	4.3	0.80	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,2,4-Trichlorobenzene	4.3	U	4.3	0.63	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,1,1-Trichloroethane	4.3	U	4.3	0.95	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,1,2-Trichloroethane	4.3	U	4.3	0.80	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Trichloroethene	4.3	U	4.3	0.42	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1

Client Sample ID: NPS MW-18 (8.0-8.5)

Lab Sample ID: 680-91732-1

Date Collected: 06/24/13 12:50
Matrix: Solid
Date Received: 06/26/13 10:57
Percent Solids: 79.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	**6.3**		4.3	0.82	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	U	4.3	1.7	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Vinyl chloride	4.3	U	4.3	0.80	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1
Xylenes, Total	8.6	U	8.6	1.6	ug/Kg	☼	07/01/13 10:10	07/08/13 16:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*	*07/01/13 10:10*	*07/08/13 16:04*	*1*
Dibromofluoromethane	*95*		*79 - 123*	*07/01/13 10:10*	*07/08/13 16:04*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*07/01/13 10:10*	*07/08/13 16:04*	*1*

Client Sample ID: NPS MW-18 (8-9)

Lab Sample ID: 680-91732-2

Date Collected: 06/24/13 12:50
Matrix: Solid
Date Received: 06/26/13 10:57
Percent Solids: 84.0

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**0.034**	**J**	0.30	0.023	mg/Kg	☼	07/08/13 09:21	07/08/13 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*116*		*70 - 131*	*07/08/13 09:21*	*07/08/13 13:16*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**12**		3.9	2.5	mg/Kg	☼	06/27/13 16:39	07/01/13 15:00	1
Oil Range Organics (C20-C36)	24	U	24	24	mg/Kg	☼	06/27/13 16:39	07/01/13 15:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*29*	*X*	*56 - 135*	*06/27/13 16:39*	*07/01/13 15:00*	*1*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4.1**		3.9	2.5	mg/Kg	☼	07/05/13 19:20	07/11/13 07:53	1
Oil Range Organics (C20-C36)	24	U	24	24	mg/Kg	☼	07/05/13 19:20	07/11/13 07:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*57*		*56 - 135*	*07/05/13 19:20*	*07/11/13 07:53*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-184710/4
Matrix: Solid
Analysis Batch: 184710

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg			07/08/13 12:23	1
Benzene	5.0	U	5.0	0.49	ug/Kg			07/08/13 12:23	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg			07/08/13 12:23	1
Bromoform	5.0	U	5.0	0.63	ug/Kg			07/08/13 12:23	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg			07/08/13 12:23	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg			07/08/13 12:23	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg			07/08/13 12:23	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg			07/08/13 12:23	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg			07/08/13 12:23	1
Chloroform	5.0	U	5.0	0.59	ug/Kg			07/08/13 12:23	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			07/08/13 12:23	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			07/08/13 12:23	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg			07/08/13 12:23	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg			07/08/13 12:23	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg			07/08/13 12:23	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg			07/08/13 12:23	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg			07/08/13 12:23	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg			07/08/13 12:23	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg			07/08/13 12:23	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg			07/08/13 12:23	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg			07/08/13 12:23	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg			07/08/13 12:23	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg			07/08/13 12:23	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg			07/08/13 12:23	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg			07/08/13 12:23	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg			07/08/13 12:23	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg			07/08/13 12:23	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg			07/08/13 12:23	1
2-Hexanone	25	U	25	5.0	ug/Kg			07/08/13 12:23	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg			07/08/13 12:23	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg			07/08/13 12:23	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg			07/08/13 12:23	1
Methylene Chloride	15	U	15	10	ug/Kg			07/08/13 12:23	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg			07/08/13 12:23	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg			07/08/13 12:23	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			07/08/13 12:23	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg			07/08/13 12:23	1
Styrene	5.0	U	5.0	0.76	ug/Kg			07/08/13 12:23	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg			07/08/13 12:23	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg			07/08/13 12:23	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg			07/08/13 12:23	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg			07/08/13 12:23	1
Toluene	5.0	U	5.0	0.70	ug/Kg			07/08/13 12:23	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg			07/08/13 12:23	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg			07/08/13 12:23	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg			07/08/13 12:23	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg			07/08/13 12:23	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg			07/08/13 12:23	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-184710/4
Matrix: Solid
Analysis Batch: 184710

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	5.0	U	5.0	0.48	ug/Kg			07/08/13 12:23	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg			07/08/13 12:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg			07/08/13 12:23	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg			07/08/13 12:23	1
Xylenes, Total	10	U	10	1.9	ug/Kg			07/08/13 12:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 122*		*07/08/13 12:23*	*1*
Dibromofluoromethane	*97*		*79 - 123*		*07/08/13 12:23*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*07/08/13 12:23*	*1*

Lab Sample ID: LCS 400-184710/1000
Matrix: Solid
Analysis Batch: 184710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	203		ug/Kg		101	43 - 150
Benzene	50.0	48.1		ug/Kg		96	74 - 119
Bromodichloromethane	50.0	49.4		ug/Kg		99	68 - 128
Bromoform	50.0	48.7		ug/Kg		97	54 - 125
Bromomethane	50.0	44.8		ug/Kg		90	25 - 150
Carbon disulfide	50.0	47.3		ug/Kg		95	26 - 150
Carbon tetrachloride	50.0	50.5		ug/Kg		101	70 - 128
Chlorobenzene	50.0	48.4		ug/Kg		97	80 - 116
Chloroethane	50.0	43.3		ug/Kg		87	22 - 150
Chloroform	50.0	48.0		ug/Kg		96	74 - 119
Chloromethane	50.0	44.0		ug/Kg		88	36 - 147
cis-1,2-Dichloroethene	50.0	48.2		ug/Kg		96	68 - 126
cis-1,3-Dichloropropene	50.0	49.5		ug/Kg		99	68 - 125
Cyclohexane	50.0	47.2		ug/Kg		94	62 - 126
Dibromochloromethane	50.0	51.7		ug/Kg		103	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	49.4		ug/Kg		99	57 - 123
1,2-Dichlorobenzene	50.0	50.0		ug/Kg		100	76 - 120
1,3-Dichlorobenzene	50.0	49.7		ug/Kg		99	78 - 118
1,4-Dichlorobenzene	50.0	49.4		ug/Kg		99	77 - 118
Dichlorodifluoromethane	50.0	39.9		ug/Kg		80	44 - 145
1,1-Dichloroethane	50.0	47.6		ug/Kg		95	61 - 128
1,2-Dichloroethane	50.0	47.4		ug/Kg		95	70 - 125
1,1-Dichloroethene	50.0	47.1		ug/Kg		94	62 - 130
1,2-Dichloropropane	50.0	49.2		ug/Kg		98	64 - 129
Diisopropyl ether	50.0	48.5		ug/Kg		97	46 - 144
Ethylbenzene	50.0	49.8		ug/Kg		100	78 - 120
Ethylene Dibromide	50.0	50.3		ug/Kg		101	78 - 119
Ethyl tert-butyl ether	50.0	48.5		ug/Kg		97	60 - 128
2-Hexanone	200	203		ug/Kg		101	54 - 140
Isopropylbenzene	50.0	51.0		ug/Kg		102	78 - 119
Methyl acetate	250	238		ug/Kg		95	52 - 139
Methylcyclohexane	50.0	48.3		ug/Kg		97	65 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-184710/1000
Matrix: Solid
Analysis Batch: 184710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	44.6		ug/Kg		89	45 - 150
Methyl Ethyl Ketone	200	205		ug/Kg		102	62 - 126
methyl isobutyl ketone	200	200		ug/Kg		100	56 - 137
Methyl tert-butyl ether	50.0	47.6		ug/Kg		95	69 - 124
Naphthalene	50.0	48.3		ug/Kg		97	64 - 126
Styrene	50.0	51.1		ug/Kg		102	66 - 132
Tert-amyl methyl ether	50.0	47.7		ug/Kg		95	65 - 124
tert-Butyl alcohol	500	456		ug/Kg		91	12 - 150
1,1,2,2-Tetrachloroethane	50.0	48.3		ug/Kg		97	67 - 120
Tetrachloroethene	50.0	51.2		ug/Kg		102	74 - 126
Toluene	50.0	48.6		ug/Kg		97	76 - 120
trans-1,2-Dichloroethene	50.0	49.1		ug/Kg		98	65 - 130
trans-1,3-Dichloropropene	50.0	50.6		ug/Kg		101	65 - 126
1,2,4-Trichlorobenzene	50.0	46.9		ug/Kg		94	72 - 126
1,1,1-Trichloroethane	50.0	50.6		ug/Kg		101	72 - 121
1,1,2-Trichloroethane	50.0	49.5		ug/Kg		99	75 - 118
Trichloroethene	50.0	50.5		ug/Kg		101	76 - 122
Trichlorofluoromethane	50.0	42.6		ug/Kg		85	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.8		ug/Kg		96	74 - 123
Vinyl chloride	50.0	47.5		ug/Kg		95	52 - 134
Xylenes, Total	100	99.2		ug/Kg		99	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*94*		*72 - 122*
Dibromofluoromethane	*97*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 400-184710/5
Matrix: Solid
Analysis Batch: 184710

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	172		ug/Kg		86	43 - 150	16	30
Benzene	50.0	41.1		ug/Kg		82	74 - 119	16	30
Bromodichloromethane	50.0	42.1		ug/Kg		84	68 - 128	16	30
Bromoform	50.0	39.0		ug/Kg		78	54 - 125	22	30
Bromomethane	50.0	37.0		ug/Kg		74	25 - 150	19	30
Carbon disulfide	50.0	40.4		ug/Kg		81	26 - 150	16	30
Carbon tetrachloride	50.0	43.7		ug/Kg		87	70 - 128	14	30
Chlorobenzene	50.0	41.8		ug/Kg		84	80 - 116	15	30
Chloroethane	50.0	35.3		ug/Kg		71	22 - 150	20	30
Chloroform	50.0	41.0		ug/Kg		82	74 - 119	16	30
Chloromethane	50.0	36.8		ug/Kg		74	36 - 147	18	30
cis-1,2-Dichloroethene	50.0	40.8		ug/Kg		82	68 - 126	17	30
cis-1,3-Dichloropropene	50.0	41.7		ug/Kg		83	68 - 125	17	30
Cyclohexane	50.0	40.4		ug/Kg		81	62 - 126	15	30
Dibromochloromethane	50.0	43.5		ug/Kg		87	65 - 131	17	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-184710/5
Matrix: Solid
Analysis Batch: 184710

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane			50.0	38.9		ug/Kg		78	57 - 123	24	30
1,2-Dichlorobenzene			50.0	42.5		ug/Kg		85	76 - 120	16	30
1,3-Dichlorobenzene			50.0	41.8		ug/Kg		84	78 - 118	17	30
1,4-Dichlorobenzene			50.0	42.4		ug/Kg		85	77 - 118	15	30
Dichlorodifluoromethane			50.0	32.8		ug/Kg		66	44 - 145	20	30
1,1-Dichloroethane			50.0	40.9		ug/Kg		82	61 - 128	15	30
1,2-Dichloroethane			50.0	40.1		ug/Kg		80	70 - 125	17	30
1,1-Dichloroethene			50.0	40.8		ug/Kg		82	62 - 130	14	30
1,2-Dichloropropane			50.0	41.4		ug/Kg		83	64 - 129	17	30
Diisopropyl ether			50.0	41.6		ug/Kg		83	46 - 144	15	30
Ethylbenzene			50.0	43.4		ug/Kg		87	78 - 120	14	30
Ethylene Dibromide			50.0	42.0		ug/Kg		84	78 - 119	18	30
Ethyl tert-butyl ether			50.0	40.9		ug/Kg		82	60 - 128	17	30
2-Hexanone			200	162		ug/Kg		81	54 - 140	22	30
Isopropylbenzene			50.0	43.1		ug/Kg		86	78 - 119	17	30
Methyl acetate			250	192		ug/Kg		77	52 - 139	22	30
Methylcyclohexane			50.0	41.1		ug/Kg		82	65 - 126	16	30
Methylene Chloride			50.0	39.2		ug/Kg		78	45 - 150	13	30
Methyl Ethyl Ketone			200	166		ug/Kg		83	62 - 126	21	30
methyl isobutyl ketone			200	163		ug/Kg		81	56 - 137	21	30
Methyl tert-butyl ether			50.0	39.0		ug/Kg		78	69 - 124	20	30
Naphthalene			50.0	40.5		ug/Kg		81	64 - 126	18	30
Styrene			50.0	43.8		ug/Kg		88	66 - 132	15	30
Tert-amyl methyl ether			50.0	40.4		ug/Kg		81	65 - 124	17	30
tert-Butyl alcohol			500	393		ug/Kg		79	12 - 150	15	30
1,1,2,2-Tetrachloroethane			50.0	39.6		ug/Kg		79	67 - 120	20	30
Tetrachloroethene			50.0	44.3		ug/Kg		89	74 - 126	14	30
Toluene			50.0	42.2		ug/Kg		84	76 - 120	14	30
trans-1,2-Dichloroethene			50.0	41.4		ug/Kg		83	65 - 130	17	30
trans-1,3-Dichloropropene			50.0	42.2		ug/Kg		84	65 - 126	18	30
1,2,4-Trichlorobenzene			50.0	40.0		ug/Kg		80	72 - 126	16	30
1,1,1-Trichloroethane			50.0	42.4		ug/Kg		85	72 - 121	18	30
1,1,2-Trichloroethane			50.0	41.9		ug/Kg		84	75 - 118	17	30
Trichloroethene			50.0	43.8		ug/Kg		88	76 - 122	14	30
Trichlorofluoromethane			50.0	38.6		ug/Kg		77	65 - 132	10	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne			50.0	40.4		ug/Kg		81	74 - 123	17	30
Vinyl chloride			50.0	40.4		ug/Kg		81	52 - 134	16	30
Xylenes, Total			100	85.9		ug/Kg		86	70 - 120	14	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*72 - 122*
Dibromofluoromethane	*95*		*79 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 680-283832/5
Matrix: Solid
Analysis Batch: 283832

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	0.25	U	0.25	0.019	mg/Kg			07/08/13 12:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*94*		*70 - 131*		*07/08/13 12:56*	*1*

Lab Sample ID: LCS 680-283832/3
Matrix: Solid
Analysis Batch: 283832

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	1.00	0.942		mg/Kg		94	64 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*100*		*70 - 131*

Lab Sample ID: LCSD 680-283832/4
Matrix: Solid
Analysis Batch: 283832

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	1.00	1.01		mg/Kg		101	64 - 133	7	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*109*		*70 - 131*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 680-283381/19-A
Matrix: Solid
Analysis Batch: 284074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 283381

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	3.3	U	3.3	2.1	mg/Kg		07/05/13 19:20	07/11/13 00:24	1
Oil Range Organics (C20-C36)	20	U	20	20	mg/Kg		07/05/13 19:20	07/11/13 00:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*81*		*56 - 135*	*07/05/13 19:20*	*07/11/13 00:24*	*1*

Lab Sample ID: LCS 680-283381/20-A
Matrix: Solid
Analysis Batch: 284074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 283381

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	33.2	13.8		mg/Kg		42	19 - 171

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: LCS 680-283381/20-A
Matrix: Solid
Analysis Batch: 284074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 283381

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	42	X	56 - 135

Lab Sample ID: LCS 680-283381/23-A
Matrix: Solid
Analysis Batch: 284074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 283381

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Oil Range Organics (C20-C36)			66.1	72.4		mg/Kg		109	50 - 150		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	90		56 - 135

GC/MS VOA

Prep Batch: 184079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-1	NPS MW-18 (8.0-8.5)	Total/NA	Solid	5035	

Analysis Batch: 184710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-1	NPS MW-18 (8.0-8.5)	Total/NA	Solid	8260B	184079
LCS 400-184710/1000	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 400-184710/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 400-184710/4	Method Blank	Total/NA	Solid	8260B	

GC VOA

Analysis Batch: 283832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-2	NPS MW-18 (8-9)	Total/NA	Solid	8015C	283949
LCS 680-283832/3	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-283832/4	Lab Control Sample Dup	Total/NA	Solid	8015C	
MB 680-283832/5	Method Blank	Total/NA	Solid	8015C	

Prep Batch: 283949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-2	NPS MW-18 (8-9)	Total/NA	Solid	5030B	

GC Semi VOA

Prep Batch: 282208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-2	NPS MW-18 (8-9)	Total/NA	Solid	3546	

Analysis Batch: 282730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-2	NPS MW-18 (8-9)	Total/NA	Solid	8015C	282208

Prep Batch: 283381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-2 - RE	NPS MW-18 (8-9)	Total/NA	Solid	3546	
LCS 680-283381/20-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 680-283381/23-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-283381/19-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 284074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-283381/20-A	Lab Control Sample	Total/NA	Solid	8015C	283381
LCS 680-283381/23-A	Lab Control Sample	Total/NA	Solid	8015C	283381
MB 680-283381/19-A	Method Blank	Total/NA	Solid	8015C	283381

Analysis Batch: 284075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-91732-2 - RE	NPS MW-18 (8-9)	Total/NA	Solid	8015C	283381

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: C&O Canal Brunswick Railyd

TestAmerica Job ID: 680-91732-1

Client Sample ID: NPS MW-18 (8.0-8.5)

Lab Sample ID: 680-91732-1

Date Collected: 06/24/13 12:50
Matrix: Solid
Date Received: 06/26/13 10:57
Percent Solids: 79.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			184079	07/01/13 10:10	CR	TAL PEN
Total/NA	Analysis	8260B		1	184710	07/08/13 16:04	LRS	TAL PEN

Client Sample ID: NPS MW-18 (8-9)

Lab Sample ID: 680-91732-2

Date Collected: 06/24/13 12:50
Matrix: Solid
Date Received: 06/26/13 10:57
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			283949	07/08/13 09:21	AJM	TAL SAV
Total/NA	Analysis	8015C		1	283832	07/08/13 13:16	AJM	TAL SAV
Total/NA	Prep	3546			282208	06/27/13 16:39	JCS	TAL SAV
Total/NA	Analysis	8015C		1	282730	07/01/13 15:00	SSP	TAL SAV
Total/NA	Prep	3546	RE		283381	07/05/13 19:20	JCS	TAL SAV
Total/NA	Analysis	8015C	RE	1	284075	07/11/13 07:53	SSP	TAL SAV

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CSX TRANSPORTATION — CHAIN OF CUSTODY

COC # 130624-1

LABORATORY INFORMATION

- [x] TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
- [ ] TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
- [ ] TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
- [ ] TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
- [ ] TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
- [ ] TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method: lab courier

Shipment Tracking No: —

CSXT PROJECT INFORMATION

Proj. State (State of Origin):

CSXT Project Number: 9415381

Proj. City:

CSXT Project Name: C&O Canal/Brunswick Rail Yard

CSXT Contact: Raghu Chakrathi

LWON: ENV 33683

CONSULTANT INFORMATION

Company: ARCADIS, Inc

Project #:

PM: Megan Kellner

Address: 1114 Benfield Blvd

Email: megan.kellner@arcadis-us.com

City, State, Zip: Millersville MD 21108

Phone: (410) 987-0892 410-987-4392

Turnaround Time:

- [ ] 1 Day Rush
- [ ] 2 Day Rush
- [ ] 3 Day Rush
- [ ] Standard 6-13 Days
- Specify # Days: _____
- [x] Standard 14 Days
- [ ] Other _____

Preservative Codes:

0 = No Preservatives; 1 = Hydrochloric Acid; 2 = Nitric Acid; 3 = Sulfuric Acid; 4 = Sodium Thiosulfate; 5 = Sodium Hydroxide; 6 = Other Ascorbic Acid

Deliverables:

- [x] CSXT Standard (Level II)
- [ ] Level III
- [ ] Level IV
- [ ] Other Deliv: _____
- [ ] EDD Required, Format: _____

Matrix Codes:

GW = Groundwater; WW = Waste Water; SW = Surface Water; SO = Soil; SL = Sludge; OI = Oil; SOL = Other Solid; LIQ = Liquid

SAMPLE INFORMATION

Sample Identification	Containers: Number & Type	Sample Collection: Date	Time	Sampler	Filtered: Y or N	Type: Comp or Grab	Matrix: Code	Note ➡ Pres. Code: TPH GRO (SOIL)	TPH-DRO/ORO (SOIL)	Full-suite VOCs (SOIL)	METHODS FOR ANALYSIS	COMMENTS	LAB USE
NPS MW-18 (8.0-8.5)	1x4oz jar	6/24/13	1250	KEM	N	Grab	SO			X			
NPS MW-18 (8-9)	1x2oz jar	6/24/13	"	"	"	"	SO	X					
NPS MW-18 (8-9)	1x4oz	6/24/13	"	"	"	"	SO		X				

Relinquished By:	Date/Time:	Received By:	Date/Time:	Comments & Special Analytical Requirements:
	6/24/13/1800		6/25/13/1216	680-91732
Paul Shepard	6/25/13/1350		06/26/13 1054	2.2 °C
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By Laboratory:	Date/Time:	Lab Remarks:	LAB USE: Custody Intact ☐ Yes ☐ No	Custody Seal # / LAB Log Number #

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

7/12/2013

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-91732-1

Login Number: 91732

List Number: 1

Creator: Barnett, Eddie T

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-91732-1

Login Number: 91732
List Number: 1
Creator: Nak, Deend

List Source: TestAmerica Pensacola
List Creation: 06/27/13 08:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9°C IR-2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: C&O Canal Brunswick Railyd

TestAmerica Job ID: 680-91732-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	07-31-13
A2LA	ISO/IEC 17025		399.01	02-28-15
Arkansas DEQ	State Program	6	88-0692	02-01-14 *
California	NELAP	9	3217CA	07-31-13
Colorado	State Program	8	N/A	12-31-13
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13
Iowa	State Program	7	353	07-01-13 *
Kentucky	State Program	4	90084	12-31-13
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Louisiana	NELAP	6	LA100015	12-31-13
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13
Montana	State Program	8	CERT0081	01-01-14
Nebraska	State Program	7	TestAmerica-Savannah	06-30-13 *
New Jersey	NELAP	2	GA769	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13
North Carolina DHHS	State Program	4	13701	07-31-13
Oklahoma	State Program	6	9984	08-31-13
Pennsylvania	NELAP	3	68-00474	06-30-13 *
Puerto Rico	State Program	2	GA00006	01-01-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13
West Virginia DEP	State Program	3	94	09-30-13
Wisconsin	State Program	5	999819810	08-31-13

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-13 *
Arizona	State Program	9	AZ0710	01-11-14
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-14
Georgia	State Program	4	N/A	06-30-13 *
Illinois	NELAP	5	200041	10-09-13
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-13
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-13

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: C&O Canal Brunswick Railyd

TestAmerica Job ID: 680-91732-1

Laboratory: TestAmerica Pensacola (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Massachusetts	State Program	1	M-FL094	06-30-13 *
Michigan	State Program	5	9912	06-30-13 *
New Hampshire	NELAP	1	2505	08-16-13
New Jersey	NELAP	2	FL006	06-30-13 *
North Carolina DENR	State Program	4	314	12-31-13
Oklahoma	State Program	6	9810	08-31-13
Pennsylvania	NELAP	3	68-00467	01-31-14
Rhode Island	State Program	1	LAO00307	12-31-13
South Carolina	State Program	4	96026	06-30-13 *
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	08-31-13

* Expired certification is currently pending renewal and is considered valid.

ARCADIS

Appendix F

NewFields Fingerprinting Report

November 5, 2013

Paul Kurzanski
CSX Transportation, Inc.
500 Water Street, J-275
Jacksonville, Florida 32202

Chemical Fingerprinting of
On-Site LPHs and C&O Canal Soils/Sediment
CSXT Brunswick Yard
Brunswick, Maryland

Dear Mr. Kurzanski,

At your request NewFields Companies, LLC is pleased to provide you with the chemical fingerprinting results surrounding our analysis of:

(1) five liquid phase hydrocarbons (LPH) samples collected from on-site monitoring wells at the CSX Transportation, Inc. (CSXT) Brunswick Yard (the Yard) and
(2) ten soils/sediments from nine borings within the Chesapeake and Ohio (C&O) Canal prism footprint south of the Yard (Fig. 1).

The Yard, which has been an active rail yard since 1892, is located adjacent to the C&O Canal (Fig.1). LPH has been recognized to exist in multiple on-site monitoring wells since 1992. Efforts to delineate, contain, and/or recover the LPH have been on-going for approximately 20 years. These efforts had shown the LPH accumulation located west of the former roundhouse was stable and/or decreasing. However, in January 2013 LPH was observed in wells east of the former roundhouse (MW-39 and MW-70), which previously had not contained LPH. The recent appearance of LPH east of the former roundhouse, in part, promulgated the chemical fingerprinting of selected LPHs described herein (Table 1).

The C&O Canal, located on National Park Service property south of the Yard, had once been an active canal but is presently swampy and vegetated (Fig. 1). Investigations of *sediments* and *soils* – terms used to respectively describe samples *above* and *below* the Canal's clay liner – since the early 1990s had indicated the sporadic occurrence of LPH in some sediments and soils in three areas (Areas 1, 2, and 3; Fig. 1). At the request of the Maryland Department of the Environment (MDE), CSXT is presently conducting an investigation of the Canal's soils and sediments, which promulgated the chemical fingerprinting of selected sediment and soil samples described herein (Table 1).

The objectives for the analysis of the LPH and soil/sediment samples included:

(1) determine the degree of homo/heterogeneity among, and to the degree possible the "age(s)" of, the LPHs, with emphasis on comparing the long-extant LPH accumulation west of the former roundhouse *versus* the more recently-appearing LPH east of the former roundhouse;
(2) determine the character of any petroleum or other type of contamination in soils and sediments from the C&O Canal; and
(3) compare the specific character of any petroleum represented by the on-site LPHs to any petroleum encountered in the Canal's soils and sediments.

Sampling and Analyses

The five LPH samples (Table 1) were collected in September 12 and 16, 2013 and shipped to Alpha Laboratory in Mansfield, Massachusetts (Alpha) on September 16, 2013. The samples arrived safely at Alpha on September 19, 2013. A copy of the chain-of-custody is attached to this letter.

The LPHs were analyzed using analytical methods that have been described in detail elsewhere,[1] namely:

(1) *TPH and Selected Alkane Quantification and Fingerprinting*: a modified EPA Method 8015D was used to determine the TPH concentration (C_9-C_{44}) and concentrations of *n*-alkanes (C_9-C_{40}) and selected (C_{15}-C_{20}) acyclic isoprenoids (e.g., pristane and phytane), and simultaneously provide a detailed fingerprint of the hydrocarbons present in each sample. This analysis allowed for characterization of the general boiling range(s) and type(s) of petroleum or other product(s) present, as well as the degree(s) of weathering. A method blank (B), lab control sample (LCS), lab control sample duplicate (LCSD) and sample duplicate (D) were prepared and analyzed for quality control (QC).

(2) *PAH Quantification and Fingerprinting*: a modified EPA Method 8270D was used to determine the concentrations of 51 semi-volatile compounds or compound groups, included Priority Pollutant PAHs, alkylated PAHs, and sulfur-containing aromatics. These features can reveal specific characteristics of petroleum fuels, e.g., diesel fuels. A method blank (B), lab control sample (LCS), lab control sample duplicate (LCSD), reference crude oil, and sample duplicate (D) were prepared and analyzed for quality control QC.

(3) *Total Sulfur Determination*: ASTM D5453-93 was used to determine the total sulfur content of LPHs using *uv*-fluorescence. This analysis provided a basis to characterize the sulfur content of the precursor fuels, particularly any diesel component. (This analysis was subcontracted to Triton Analytics, Houston.)

The 10 soil/sediment samples from the C&O Canal prism footprint borings analyzed herein (Table 1) were collected in August 2013. These samples were a subset of the 60 samples sent to Alpha on Aug. 23, which had arrived safely on Aug. 24, 2013. A copy of the chain-of-custody is attached to this letter. These 60 samples were grab samples from the same intervals as were sent to Test America for TPH-DRO, TPH-ORO, and SVOC (Method 8270) analysis. Upon receipt and review of these Test America results, 10 of the 60 samples were selected for chemical fingerprinting by NewFields. The basis for selecting these 10 samples included the DRO, ORO, and/or SVOC concentrations, the character of the DRO/ORO GC/FID chromatograms, and field observations, used in combination with attempts to represent soils or sediments from each Area (Table 1).

The 10 soil/sediment samples selected were analyzed using the same *TPH and Selected Alkane Quantification and Fingerprinting* method described above. Prior to analysis the samples were serially extracted (3-times) in dichloromethane. After concentrating the extracts were processed (cleaned) through alumina using EPA Method 3611 in order to remove polar compounds. Three of the samples' extracts were further analyzed using the same *PAH Quantification and Fingerprinting* method described above. These three samples were selected for PAH

[1] Douglas, G.D., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., and McCarthy, K.J. (2007) Chemical fingerprinting of hydrocarbons and polychlorinated biphenyls. In: *Introduction to Environmental Forensics, 2nd Ed.*, B. Murphy and R. Morrison, Eds., Academic Press, New York, pp. 317-459.

fingerprinting because they had the highest concentrations of SVOC per the Test America 8270 results.

Results

The complete Alpha data reports (ETRs# L13186627, 1309010, and 1310009) are being maintained by NewFields but can be made available upon request. Full size GC/FID chromatograms and all tabulated concentration results are attached to this letter.

On-Site LPH Characterization:

Appearance: The LPHs studied varied in their appearance as per the photograph shown in Figure 2. The LPHs collected from the four wells west of the former roundhouse ranged in color from translucent amber (MW-56) to opaque, dark brown (MW-55 and MW-49), with the LPH from MW-37 appearing intermediate (Fig. 2A-D). The LPH from MW-70, east of the former roundhouse, was reddish-brown (Fig. 2E), which is notable in light of the red dye required to be used in off-road diesel.

TPH and Chromatographic Character: The LPHs were comprised of 100% measureable TPH (Table 2A). This means that all of the mass of the LPHs was chromatographable and reported to the C_8 to C_{44} (TPH) range.

The GC/FID fingerprints for the five LPHs are shown in Figure 3. Inspection of this reveals that all five of the LPHs studied are nearly exclusively comprised of chemicals that boil within the diesel range (C_{10}-C_{28}). Only traces of hydrocarbons within the gasoline range (C_{10}-) are present and no residual range (C_{28}+) compounds are present (Fig. 3).

The dominant feature within the diesel range in each of the samples is a broad "hump", referred to as the unresolved complex mixture (UCM). The UCM is a long-recognized chromatographic feature that is typical of petroleum.[2] The shape of the UCM can reveal something about the type(s) of parent petroleum comprising the LPH. The UCM in each of the LPHs studied is uni-modal and symmetrical (i.e. exhibits a gradual rise-and-fall) reaching a maximum around C_{15} (Fig. 3), which is typical of middle distillate fuels.[3] Thus, **all five LPHs studied are comprised exclusively of middle distillate fuel, e.g., diesel fuel #2**.

The resolved compounds (peaks) atop the UCM humps are different among the samples (Fig. 3). Specifically, resolved compounds in the four LPHs collected from wells west of the former roundhouse are all dominated by alkyl-naphthalenes and acyclic isoprenoids (Fig. 3A-D). The isoprenoids include compounds with 13 to 20 carbons, including pristane (Pr) and phytane (Ph). The alkylated naphthalenes and isoprenoids are considered relatively resistant to weathering (biodegradation and water-washing).[4] Their prominence in the MW-56, MW-55, MW-49 and MW-37 LPHs indicates **the four LPHs west of the former roundhouse are each significantly, and comparably, weathered.** The consistency in the

[2] Blumer, M. and Sass, J. (1972) Indigenous and petroleum-derived hydrocarbons in polluted sediment. Mar. Pollut. Bull. 3: 92-94.

[3] Stout, S.A., Uhler, A.D., McCarthy, K.J. and Emsbo-Mattingly, S.D. (2002). The influences of refining on petroleum fingerprinting – Part 3. Distillate fuel production practices. *Contaminated Soil, Sediment & Water*, Jan/Feb Issue, pp. 6-11.

[4] Kaplan, I.R., Galperin, Y., Alimi, H., Lee, R.P., and Lu, S.-T. (1996). Patterns of chemical changes during environmental alteration of hydrocarbon fuels. Ground Water Monitoring and Remediation, Fall 1996, 113-124.

degree of weathering of these four LPH is notable in light of their different appearance/color (Fig. 2), which emphasizes that color is not necessarily a good indicator of chemical composition.

On the other hand, the dominant resolved compounds (peaks) in the MW-70 LPH's chromatogram are n-alkanes that range from n-C_8 to n-C_{28} (Fig. 1E). n-Alkanes are the most abundant compounds present in fresh distillate fuels[3] but they are considered susceptible to weathering (biodegradation).[4] **The LPH east of the former roundhouse, as represented by the sample from MW-70, shows little to no evidence of weathering.** This marked difference in the degrees of weathering among the LPHs studied east *versus* west of the former roundhouse is reflected in the higher nC_{17}/Pr and nC_{18}/Ph ratios for the MW-70 LPH (Table 2B).

Decalins, PAHs and Sulfur-Containing Aromatics: The LPHs studied contained between 12,501 and 62,190 mg/kg of total PAHs (TPAH51),[5] or 1.25 to 6.22 wt% of the LPHs (Table 2A). Each LPH contained markedly lower concentrations of the 16 Priority Pollutant PAHs (TPAH16), which comprised between 4.4 and 6.0 percent of the TPAH51 (Table 2A). **Higher concentrations of PAHs were present in the four LPHs west of the former roundhouse**, owing to the concentrating effect that weathering (i.e., biodegradation of n-alkanes) has had on these LPHs. This difference is also reflected in these LPHs' higher percentage of TPH asTPAH51 (0.09 to 0.12%) compared to the unweathered MW-70 LPH (0.01%; Table 2A).

The distributions of the PAHs in each of the LPHs studied, as well as the decalins[6] and benzothiophenes, are shown in Figure 4. As expected based upon the GC/FID results (above), each LPH contains compounds within the diesel range. There are no significant concentrations of higher molecular weight PAHs (HPAHs) containing 4- to 6-rings.

As is typical of weathered diesel fuels,[7] each LPH west of the former roundhouse is dominated by alkylated naphthalenes (N2-N4; Fig. 4A-D). However, the unweathered diesel fuel comprising the MW-70 LPH is dominated by decalins (D0-D4; Fig. 4E). The predominance of decalins over naphthalenes is (in my experience) atypical of most unweathered 'historic' diesel fuels.[8] However, as the refining of diesel fuel has become increasingly complicated, hydrotreatment of distillate feedstocks has become more common. Decalins are formed from the hydrotreatment of naphthalenes,[9] which (1) may explain their relative prominence in the MW-70 LPH and, in turn, (2) indicate that **the unweathered diesel fuel comprising the MW-70 LPH is more typical of modern, hydrotreated diesel fuel (than historic, non-hydrotreated diesel fuel)**.

Sulfur Content: The sulfur content of the LPHs studied varied. The four LPHs west of the former roundhouse contained between 2200 and 2970 ppm of total sulfur (Table 2A). The MW-70 LPH from east of the former roundhouse contained only 728 ppm of total sulfur (Table 2A). The implications of this difference are discussed further in the next section.

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[5] This is defined as the sum of all 51 analytes ranging from naphthalene to benzo(ghi)perylene on the attached data tables.

[6] Decalins are compounds with two, fused saturated, 6-member rings, i.e., decahydronaphthalenes.

[7] Stout, S.A., Uhler, A.D., and McCarthy, K.J. (2006) Chemical characterization and sources of distillate fuels in the subsurface, Mandan, North Dakota. *Environ. Forensics*, **7(3)**: 267-282.

[8] Stout, S.A., unpublished data. 'Historic' refers to diesel fuels refined prior to the widespread use of deep hydrodesulfurization over the past 20 years or so.

[9] Pines, H. (1981). The Chemistry of Catalytic Hydrocarbon Conversions, Academic Press, New York, 305 pp.

Assessment of the "Age" of the LPHs/Diesel Fuel

The degree of weathering of LPH is not necessarily a good proxy for the length of *time* petroleum has spent in the environment (i.e., its "age").[10] The reason for this is that the length of time spent in the environment is not the only factor. Specifically, the *rate* of weathering of petroleum is also important and it depends on numerous site-specific factors that will vary of many scales (e.g., oxygen availability, temperature, chemical concentrations, etc.). Therefore, it is the combined effect of the *rate* of weathering and the *time* spent in the environment that dictates the *degree* of weathering in any LPH. That is,

Degree of Weathering = Rate x Time

Thus, the degree of weathering alone cannot determine the *absolute* "age" of petroleum in the environment. However, varying degrees of weathering among LPHs that have accumulated under a comparable set of site-specific factors may reveal differences in their *relative* "ages". At the Site, where site-specific factors may not vary widely, the unweathered character of the MW-70 LPH compared to the severely weathered character of the other LPHs would seem to suggest that **the release(s) giving rise to the MW-70 LPH occurred much more recently that the release(s) giving rise to the LPHs west of the former roundhouse**.

A more defensible (quantitative) means to assess the "age" of the LPHs studied is the concentration of sulfur. The basis for this approach is that the maximum permissible concentration of sulfur in most distillate fuels was reduced by regulations over the past 20 years. For example, all types of diesel fuels sold before October 1993 typically contained an average of 2500 ppm sulfur,[11] and are now referred to a high sulfur diesel (HSD). In October 1993 the maximum permissible concentration of sulfur in *on-road* diesel fuels was reduced to 500 ppm, which are now referred to as low sulfur diesel (LSD). In September 2006 the maximum permissible limit was further reduced to 15 ppm.[12] These "modern" on-road diesel fuels are referred to as ultra-low sulfur diesel (ULSD).

Given the rail yard operations at the Site, and the likely prominence of *off-road*, including locomotive, diesel fuel at the Site, it is necessary to consider how the sulfur regulations concerning off-road diesel fuels have progressed over time. Off-road diesel fuels historically contained an average of 2500 ppm sulfur before 1993. The generally high concentrations of sulfur varied around 2500 ppm after October 1993 depending on the supplier. However, in June 2007, all off-road fuels (except marine diesels) were required to contain less than 500 ppm total sulfur (LSD) and in June 2012, the maximum permissible sulfur in locomotive diesel was further reduced to 15 ppm (ULSD).

The LPH samples west of the former roundhouse contained between 2200 and 2970 ppm total sulfur, and averaged 2673 ppm (Table 2A). These values are typical of the average value (~2500 ppm) for off-road diesel fuel in use for decades prior to 2007. This indicates **the LPHs west of the former roundhouse are comprised of historic HSD** (which is no surprise given that LPH was first discovered in this area in the early 1990s).

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[10] Stout, S.A. and Wang, Z. (2008) Diagnostic compounds for fingerprinting petroleum in the environment. In: *Environmental Forensics*, R.E. Hester and R.M. Harrison, Eds., Royal Soc. Chem., Issues in Environmental Science and Technology Publ. No. 26, London, pp. 54-104.

[11] EPA (2000). Fuel standard feasibility. In: Heavy Duty Standards/Diesel Fuel RIA EPA420-R-00-026, 122 p.

[12] 40CFR Parts 69, 80, and 86. Some exemptions were available until June 2010, when all on-road diesel nationwide needed to meet the 15 ppm standard.

The MW-70 LPH, however, contained only 728 ppm of total sulfur (Table 2A) and this LPH only recently appeared east of the former roundhouse. This concentration is lower than was typical of historic HSD in use before June 2007(~2500 ppm), but is higher than LSD (<500 ppm) or ULSD (<15 ppm) used since that time. Thus, it can be argued that **the MW-70 LPH is likely a *mixture* of HSD, LSD, and modern ULSD diesel fuel**.

C&O Canal Soil and Sediment Characterization:

The chemical fingerprinting of the 10 selected samples from the C&O Canal prism footprint are discussed separately for each of the three Areas studied (Fig. 1; Table 1). Data from these samples are compiled in Table 2.

Area 1: TPH and Chromatographic Character: Four samples from three borings from Area 1 were included in this study; both a sediment and soil (above and below the clay liner, respectively) were studied from the SB01-04 location (Table 1). The TPH concentrations in all but one of the Area 1 samples were below 100 ppm, the exception being the soil from SB01-04 (6.0-7.0), which contained 1260 ppm $TPH_{(C9-C44)}$ (Table 2A).[13]

The GC/FID fingerprints for the four Area 1 samples studied are shown in Figure 5. The chromatogram for the SB01-04 (6.0-7.0) soil (Fig. 5B) exhibits the same general features as the LPHs west of the former roundhouse (Fig. 3A-D); e.g., a prominent diesel range UCM with no n-alkanes. Thus, **the SB01-04 (6.0-7.0) soil below the clay liner in Area 1 contains a weathered diesel fuel** (Table 2C). Qualitative comparison to the LPHs west of the former roundhouse fingerprints (Fig. 3) reveals the diesel in the SB01-04 soil is somewhat more highly weathered than the LPHs, as the former contains less alkyl-naphthalenes and lower isoprenoids relative to Pr and Ph (Fig. 5B). A quantitative comparison based upon diagnostic ratios, however, cannot be performed since the SB01-04 (6.0-7.0) soil was not analyzed for PAHs and sulfur-containing aromatics. Therefore, **at present, it cannot be determined if the weathered diesel fuel in the SB01-04 (6.0-7.0) sample is HSD, such as exists in the on-site LPHs west of the roundhouse.**

The other three Area 1 samples with low $TPH_{(C9-C44)}$ concentrations (<100 ppm) each exhibit highly comparable fingerprints (Fig. 5A, C and D), which allows them to be described together. Each of these samples contains compounds predominantly within the late diesel range and residual range (C_{25}+). The most prominent compounds within this range are odd-carbon numbered n-alkanes between n-C_{25} and n-C_{33} (Fig. 5A, C, and D). The prominence of odd-carbon numbered n-alkanes in this range is a feature typical of many modern sediments and is the result of naturally-occurring hydrocarbons derived from degrading plant cuticles.[14] Other compounds in the residual range appear consistent with the variety of microbial- and plant-derived terpenoids that are also typical of modern sediments.[15] In summary, the features of **the low concentrations of $TPH_{(C9-C44)}$ in the SB01-04 (0.0-1.5), SB01-05 (8.0-9.0), and SB01-07 (0.5-1.5) samples are consistent with modern, natural organic matter (NOM)**, i.e., plant debris.

[13] $TPH_{(C9-C44)}$ refers to the total concentration between C9 and C44, and therefore includes the DRO (C10-C28) and ORO (C28+) ranges.

[14] The predominance of odd carbon *n*-alkanes results from the decarboxylation of even carbon *n*-alkyl fatty acids that are present in plant waxes. Eglinton, G. and Hamilton, R.J. (1967) Leaf epicuticular waxes. Science 156: 1322-1335.

[15] Stout, S.A. and Uhler, A.D. (2003) Distinguishing "background" hydrocarbons from contamination using chemical fingerprinting. *Environ. Claims. J.*, **15(2)**: 241-259.

In addition, the two sediment samples from above the clay liner [SB01-07 (0.5-1.5) and SB01-04 (0.0-1.5)] each also appear to contain a trace amount of an asymmetrical UCM spanning the diesel and residual ranges (Fig. 5A and D) that suggests they each also contain a trace of petroleum.[2] [There is no such UCM evident in the SB01-05 (8.0-9.0) sample (Fig. 5C).] The presence of a trace amount of broad-boiling petroleum in sediment above the clay liner is supported by the PAH results discussed below (see discussion of Fig. 8A). Notably, this petroleum present is <u>not</u> diesel fuel (which is narrower boiling) but is more consistent with the mixed petroleum typical of urban runoff.[16] Collectively, these features indicate **the two canal sediment samples from Area 1 appear to contain a mixture of NOM with a trace amount of urban runoff** (Table 2C). Perhaps not surprisingly, **only NOM is evident in the deeper soil sample collected from below the clay liner** [SB01-05 (8.0-9.0), Fig. 5C and Table 2C].

Area 2: TPH and Chromatographic Character: Two samples from two borings from Area 2 were included in this study; one sediment and one soil from different locations (Fig. 1; Table 1). The $TPH_{(C9-C44)}$ concentration in the sediment from SB02-05 (0.5-1.5) was 549 ppm *versus* only 44 ppm in the soil from SB02-09 (4.5-5.5) (Table 2A).

The GC/FID fingerprints for the two Area 2 samples studied are shown in Figure 6. The sediment collected above the liner exhibits a long broad, asymmetrical UCM that spans the diesel and residual ranges (Fig. 6A). Resolved compounds (peaks) atop the UCM include numerous alkylated naphthalenes and isoprenoids, along with C_{25}+ odd-carbon n-alkanes and terpenoids. The presence of this petroleum – along with combustion-derived (pyrogenic) PAHs as supported by the PAH results discussed below – indicates **the SB02-05 (0.5-1.5) soil sample contains a mixture of NOM and urban runoff** (Table 2C). Trace amounts (lower concentrations) of the same type of urban runoff were evident in the canal sediment samples from Area 1 described above [i.e., SB01-04 (0.0-1.0) and SB01-07 (0.5-1.5); Fig. 5A and D]. Again, perhaps not surprisingly, **only NOM is evident in the deeper soil sample collected from below the clay liner** [SB02-09 (4.5-5.5), Fig. 6B and Table 2C].

As was also observed in the Area 1, it would appear that the **sediments above the clay liner appear to be impacted by urban runoff while soils below the clay liner are not**.

Area 3: TPH and Chromatographic Character: Four samples from Area 3 were included in this study; two sediments and two soils, all from different locations (Table 1 and Fig. 1). The $TPH_{(C9-C44)}$ concentrations in the sediments ranged from 165 ppm [(SB03-10 (0.5-1.5)] to 2730 ppm [SB03-06 (0.0-1.0); Table 2A]. Both soils studied contained the virtually identical concentrations of 235 and 236 ppm $TPH_{(C9-C44)}$ [SB03-07 4.5-5.5) and SB03-08 (3.0-4.00); Table 2A].

The GC/FID fingerprints for the four Area 3 samples studied are shown in Figure 7. Three of the four samples exhibit symmetrical UCM humps that span the diesel range (Fig. 7A-C). Varying amounts of alkyl-naphthalenes and isoprenoids also are evident in each sample. As described above, these features indicate that **the sediment from SB03-06 (0.0-1.0) and soils from SB03-07 (4.5-5.5) and SB03-08 (3.0-4.0) all contain weathered diesel fuel, the highest concentration (2730 ppm $TPH_{(C9-C44)}$) occurring in the SB03-06 (0.0-1.0) sediment sample**. Lesser amounts of C_{25}+ odd-carbon n-alkanes and terpenoids are also evident indicating each sample (Fig. 7) indicating that each sample also contains some NOM.

[16] Stout, S.A., Uhler, A.D., and Emsbo-Mattingly, S.D. (2004) Comparative evaluation of background anthropogenic hydrocarbons in surficial sediments from nine urban waterways. *Environ. Sci. Technol.*, **38(11)**: 2987-2994.

The sediment sample from SB03-10 (0.5-1.5) also contains NOM, but the UCM hump in this sample appears distinct, as it spans only the latter "half" of the diesel range (Fig. 7D). Severe evaporation of diesel fuel will yield a UCM with this profile. Therefore, the distinct appearance of this sample's fingerprint indicates that **the trace concentration of diesel fuel present in the SB03-10 (0.5-1.5) sediment is simply more highly evaporated than the weathered diesel fuel present in the other three samples from Area 3**.

In Areas 1 and 2 the sediments collected above the canal's clay liner had each contained an urban runoff component (see above; Table 2C). **An urban runoff component may also be present in the sediments from Area 3**; however, in these sediments the presence of weathered diesel fuel likely tends to "mask" any obvious impact of urban runoff in the GC/FID fingerprints. The presence of trace amounts of combustion-derived (pyrogenic) PAHs in the SB03-06 (0.0-1.0) sediment, however, suggests some urban runoff is also present (see PAH results below).

Decalins, PAHs and Sulfur-Containing Aromatics: The scope of this study warranted that only three samples from the Canal be analyzed for these compounds. The samples from each Area that had contained the highest concentrations of SVOCs based upon the Test America Method 8270 results) were selected for detailed fingerprinting. All three were sediment samples collected above the Canal's clay liner, *viz*. SB01-07 (0.5-1.5), SB02-05 (0.5-1.5), and SB03-06 (0.0-1.0).[17]

Figure 8 shows the histograms showing the concentrations and distributions of decalins, PAHs and sulfur-containing aromatics in the selected samples (Fig. 8A-C). For ease of comparison, the histogram for one of the diesel-composed LPHs is included (Fig. 8D reproduced from Fig. 4A).

The two sediment samples from Area 1 and 2 contained 5.04 and 36 ppm of TPAH51 (Table 2A).[5] Despite these varying concentrations the distribution (fingerprint) of these two samples' PAHs are remarkably similar (Fig. 8A-B). Both samples contained a full suite of lower and higher molecular weight PAHs (LPAH and HPAH). Most homologues exhibit a dominance of PAHs containing 1 to 3 alkyl groups (e.g., N1 or PA1) over the corresponding non-alkylated, Priority Pollutant PAHs (e.g., N0 or P0), as is typical of petroleum-derived PAHs.[18] The presence of both LPAH and HPAH clearly indicates, however, that the petroleum present in these sediment samples is broader boiling than diesel fuel (which overwhelmingly contains LPAHs; Fig. 8D). As described above, this broad-boiling petroleum is more consistent with the mixed petroleum typical of urban runoff.[16]

Notably, however, both sediments contain an excess of high molecular weight Priority Pollutant PAHs that are atypical of petroleum (see dark blue bars to the right of Fig. 8A-B). These HPAHs are typical of combustion-derived (pyrogenic) PAHs formed from the incomplete combustion of organic matter (e.g., exhaust soot) and are common components of urban runoff.[18] **The apparent mixture of broad-boiling petrogenic PAHs and pyrogenic HPAHs indicates (and supports the GC/FID fingerprint results) that the SB01-07 (0.5-1.5) and SB02-05 (0.5-1.5) sediments are impacted by urban runoff.** The higher concentration of TPH and PAH in the SB02-05 (0.5-1.5) sample simply speaks to a higher input of urban runoff in this sample (Area 2?) than in the SB01-07 (0.5-1.5) sample (Area 1?).

[17] Test America data indicated the total Priority Pollutant PAHs in these samples were 4.4, 4.1 and 5.0 ppm, respectively.

[18] Boehm, P.D. (2006) Polycyclic aromatic hydrocarbons. In: Environmental Forensics, Contaminant Specific Guide. R.D. Morrison and B.L. Murphy, Eds., Academic Press, New York, pp. 314-337.

The sediment sample from Area 3 contained 43 ppm TPAH51(Table 2A) that was dominated by LPAHs (Fig. 8C). These LPAHs are reasonably attributable to the dominant weathered diesel fuel component recognized in this sample (e.g., Fig. 7A). As such, it is not surprising its histogram resembles the diesel-composed LPHs (Fig. 8C-D). This sediment, however, also contains HPAHs, including the Priority Pollutant HPAHs, which are not attributable to weathered diesel fuel. Instead these HPAHs indicate that, **in addition to the dominant, weathered diesel fuel component, the SB03-06 (0.0-1.0) sediment also contains an urban runoff component** (as had exclusively occurred in the SB01-07 (0.5-1.5) and SB02-05 (0.5-1.5) sediments described above).

Comparison of On-Site and Off-Site Diesel Fuel: The detailed PAH data provide an opportunity to compare the specific type of diesel fuels represented by the on-site LPHs *versus* the diesel fuel component found in the SB03-06 (0.0-1.0) sediment. However, because the sediment samples also contained an urban runoff component, the issue of mixing confounds a direct comparison.

Nonetheless, Figure 9 shows cross-plots of two sets of diagnostic ratios that can reflect differences among distillate fuels.[7] Fig. 9A shows the ratios of C2- and C3-dibenzothiophenes to C2- and C3-phenanthrenes/ anthracenes. Both ratios (DBT2/PA2 and DBT3/PA3) will increase with sulfur content. As such (given the sulfur results described above), it is not surprising that the four LPHs west of the former roundhouse exhibit higher ratios than the MW-70 LPH east of the former roundhouse (Table 2B). The two Canal sediments containing only urban runoff contained comparably low, relative abundances of sulfur (Table 2B and Fig. 9A).

The SB03-06 (0.0-1.0) sediment from Area 3 was shown to contain a mixture of diesel fuel with urban runoff (see above; Table 2C). Because the diesel fuel component was weathered, it is not reasonably attributable to the unweathered, recent ULSD that is prominent in the MW-70 LPH east of the former roundhouse. However, the intermediate ratios for this sediment suggest it is possible that a mixture of historic, high sulfur diesel (represented by the LPHs west of the former roundhouse) with urban runoff could produce intermediate DBT2/PA2 and DBT3/PA3 ratios observed for the SB03-06 (0.0-1.0) sediment (Fig. 9A). The same intermediate result is found upon comparison of the methyl-phenanthrene ratios (MPI1 and MPI2) shown in Figure 9B. As such, **a contribution of historic diesel fuel from the Yard to this Area 3 sediment cannot be confirmed or ruled out**.

Conclusions

Chemical fingerprinting analysis of LPHs from four on-site monitoring wells west of the former roundhouse (MW-56, MW-55, MW-37, and MW-49) and one on-site monitoring well east of the former roundhouse (MW-70) allow for the following conclusions:

(1) All five LPHs studied are comprised exclusively of middle distillate fuel, e.g., diesel fuel #2.

(2) The four LPHs west of the former roundhouse are each significantly, but comparably, weathered, whereas the LPH east of the former roundhouse shows little to no evidence of weathering.

(3) The LPHs west of the former roundhouse appear fairly homogeneous and typical of historic, high sulfur diesel fuels. However, the prominence of decalins and markedly lower sulfur content of the LPH sample from MW-70 indicate it is more typical of modern (hydrotreated and lower sulfur) diesel fuel.

Chemical fingerprinting of five soils (collected below the clay liner) and five sediments (collected above the clay liner) from Areas 1, 2, and 3 within the C&O Canal prism footprint (Table 1) have recognized three sources of $TPH_{(C9-C44)}$, *viz*. natural organic matter (NOM), urban runoff, and diesel fuel.

(4) Varying amounts of NOM are pervasive in the soils and sediments from the Canal, logically owing to the ubiquitous occurrence of plant debris.

(5) Urban runoff has variably-impacted sediments collected above the Canal's clay liner in all three Areas, contributing up to 549 ppm $TPH_{(C9-C44)}$. Urban runoff has not impacted soils below the Canal's clay liner.

(6) Diesel fuel has impacted some soil below the Canal's clay liner in Area 1 (1270 ppm $TPH_{(C9-C44)}$) and Area 3 (235 and 236 ppm $TPH_{(C9-C44)}$) and sediments above the Canal's clay liner in Area 3 (2730 ppm $TPH_{(C9-C44)}$).

The available data cannot confirm or rule out the possible contribution of historic diesel fuel from the Yard to Areas 1 or 3.

Please let me know if you have any questions on the data or content of this letter.

Sincerely,

Scott A. Stout, Ph.D., P.G.
Sr. Consulting Geochemist

Attachments:
Table 2 column header definitions
Chain of custody documents
GC/FID Chromatograms
Tabulated TPH, alkanes, PAH and sulfur results

Table 1: Inventory of samples included in this study.

Client ID	Alpha Lab ID	Location	Matrix*	Date Collected
Brunswick Yard				
MW-56 (091213)	1310009-01	on-site	LPH	09/12/2013
MW-55 (091213)	1310009-02	on-site	LPH	09/12/2013
MW-37 (091213)	1310009-03	on-site	LPH	09/12/2013
MW-49 (091213)	1310009-04	on-site	LPH	09/12/2013
MW-70 (091613)	1310009-05	on-site	LPH	09/16/2013
C&O Canal				
SB01-04 (0.0-1.0)	1309010-01	Area 1	Sediment	08/19/2013
SB01-04 (6.0-7.0)	1309010-02	Area 1	Soil	08/19/2013
SB01-05 (8.0-9.0)	1309010-03	Area 1	Soil	08/19/2013
SB01-07 (0.5-1.5)	1309010-04	Area 1	Sediment	08/20/2013
SB02-05 (0.5-1.5)	1309010-05	Area 2	Sediment	08/20/2013
SB02-09 (4.5-5.5)	1309010-06	Area 2	Soil	08/21/2013
SB03-06 (0.0-1.0)	1309010-07	Area 3	Sediment	08/22/2013
SB03-07 (4.5-5.5)	1309010-08	Area 3	Soil	08/22/2013
SB03-08 (3.0-4.0)	1309010-09	Area 3	Soil	08/22/2013
SB03-10 (0.5-1.5)	1309010-10	Area 3	Sediment	08/22/2013

*sediment and soil respectively describe samples above and below the Canal's clay liner

Table 2: Tabulated results for the LPHs and C&O Canal soils/sediment samples studied. (A) Concentrations and percentages, (B) selected diagnostic ratios, and (C) overall characterization of samples' composition. Note concentrations in LPHs and soils/sediments are both in ppm but are not directly comparable (mg/kg_{LPH} vs mg/kg_{dry}). NA – not analyzed. See attachments for column header definitions.

A

Client ID	TPH (ppm)	TPAH51 (ppm)	TPAH16 (ppm)	%TPAH51 as TPAH16	%TPH as TPAH51	%TPH as TPAH16	Total Sulfur (ppm)
MW-56	1,140,000	62,190	3,722	5.99	0.005	0.0003	2640
MW-55	1,100,000	59,723	2,846	4.76	0.005	0.0003	2880
MW-37	1,140,000	51,503	2,534	4.92	0.005	0.0002	2200
MW-49	1,070,000	51,442	2,893	5.62	0.005	0.0003	2970
MW-70	1,040,000	12,501	549	4.39	0.001	0.0001	728
SB01-04 (0.0-1.0)	81	NA	NA	NA	NA	NA	NA
SB01-04 (6.0-7.0)	1260	NA	NA	NA	NA	NA	NA
SB01-05 (8.0-9.0)	23	NA	NA	NA	NA	NA	NA
SB01-07 (0.5-1.5)	78	5.04	1.7	34.25	0.01	0.002	NA
SB02-05 (0.5-1.5)	549	36	9.3	25.78	0.01	0.002	NA
SB02-09 (4.5-5.5)	44	NA	NA	NA	NA	NA	NA
SB03-06 (0.0-1.0)	2730	43	6.6	15.30	0.00	0.0002	NA
SB03-07 (4.5-5.5)	235	NA	NA	NA	NA	NA	NA
SB03-08 (3.0-4.0)	236	NA	NA	NA	NA	NA	NA
SB03-10 (0.5-1.5)	165	NA	NA	NA	NA	NA	NA

B

Client ID	Pr/Ph	nC17/Pr	nC18/Ph	CPI	DBT2/ PA2	DBT3/ PA3	MPI 1	MPI 2	MPR
MW-56	2.2	0.1	0.0	0.00	0.57	0.82	1.25	1.32	2.79
MW-55	2.2	0.1	0.0	0.00	0.56	0.80	1.29	1.37	2.75
MW-37	1.9	0.1	0.0	0.00	0.52	0.74	1.26	1.34	2.71
MW-49	2.3	0.1	0.0	0.00	0.49	0.70	1.29	1.37	2.49
MW-70	1.7	1.6	2.0	0.00	0.42	0.50	1.54	1.52	1.68
SB01-04 (0.0-1.0)	5.0	0.7	2.6	5.11	NA	NA	NA	NA	NA
SB01-04 (6.0-7.0)	0.0	0.0	0.0	2.36	NA	NA	NA	NA	NA
SB01-05 (8.0-9.0)	0.9	1.3	3.4	6.98	NA	NA	NA	NA	NA
SB01-07 (0.5-1.5)	3.6	0.8	2.0	4.73	0.20	0.23	0.71	0.85	2.00
SB02-05 (0.5-1.5)	6.0	0.6	2.9	3.78	0.20	0.24	0.68	0.84	1.76
SB02-09 (4.5-5.5)	2.7	0.5	2.0	4.78	NA	NA	NA	NA	NA
SB03-06 (0.0-1.0)	1.9	0.0	0.0	2.83	0.39	0.42	0.89	1.06	2.33
SB03-07 (4.5-5.5)	2.1	0.2	0.3	4.08	NA	NA	NA	NA	NA
SB03-08 (3.0-4.0)	1.9	0.0	0.0	3.31	NA	NA	NA	NA	NA
SB03-10 (0.5-1.5)	1.8	0.5	0.8	5.50	NA	NA	NA	NA	NA

C

Client ID	Overall Characterization
MW-56	weathered diesel fuel
MW-55	weathered diesel fuel
MW-37	weathered diesel fuel
MW-49	weathered diesel fuel
MW-70	unweathered diesel fuel
SB01-04 (0.0-1.0)	NOM/trace urban runoff
SB01-04 (6.0-7.0)	weathered diesel fuel
SB01-05 (8.0-9.0)	natural organic matter (NOM)
SB01-07 (0.5-1.5)	NOM/trace urban runoff
SB02-05 (0.5-1.5)	urban runoff
SB02-09 (4.5-5.5)	natural organic matter (NOM)
SB03-06 (0.0-1.0)	weathered diesel fuel/trace urban runoff
SB03-07 (4.5-5.5)	trace weathered diesel fuel w/ NOM
SB03-08 (3.0-4.0)	trace weathered diesel fuel
SB03-10 (0.5-1.5)	NOM/trace weathered diesel fuel

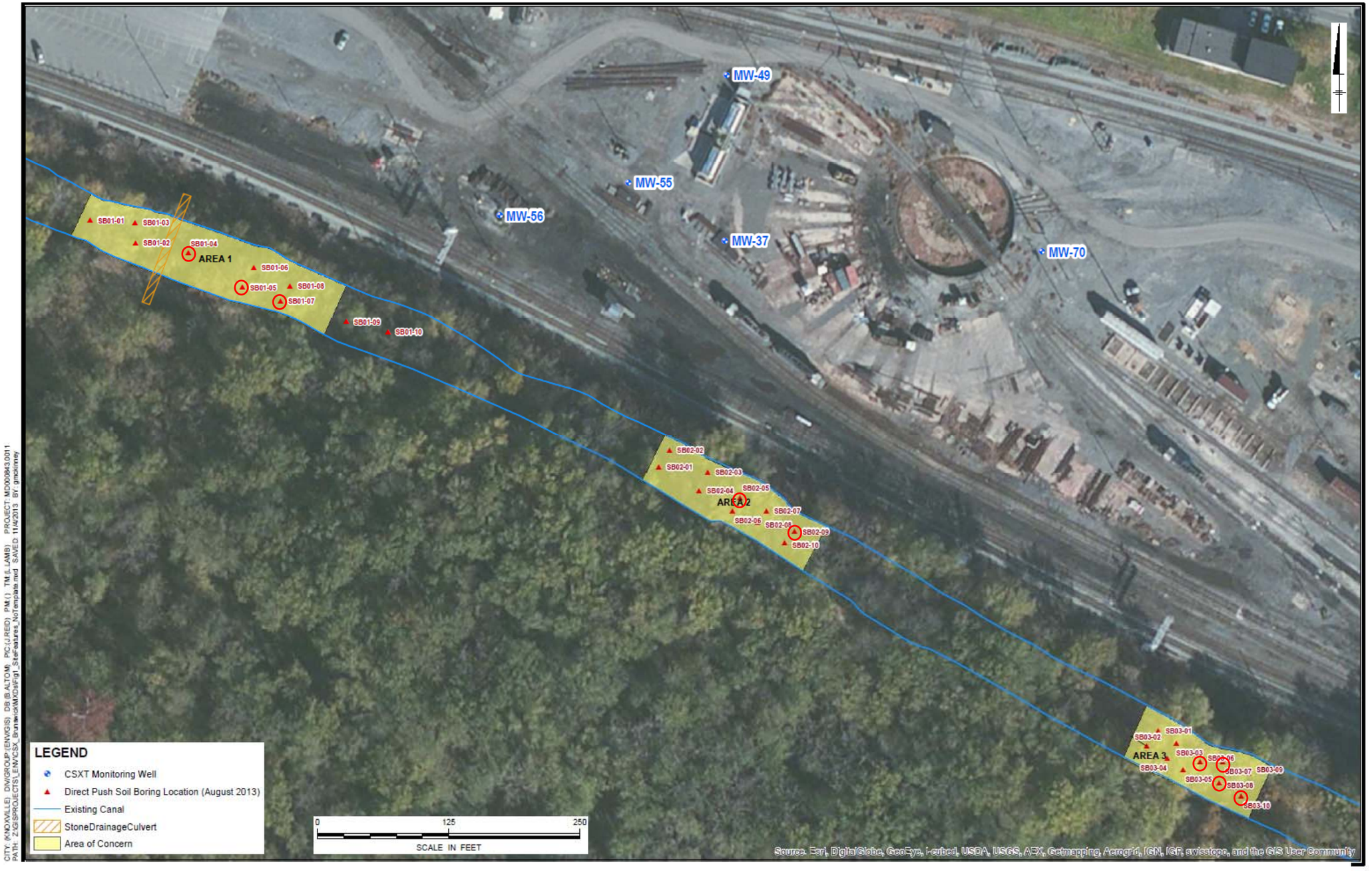

Figure 1: Map showing the locations of the five on-site monitoring wells sampled for LPHs (blue labels) and locations of the 10 off-site soil/sediments (red circles) included in this fingerprinting study. See Table 1 for sample inventory. Preliminary (TestAmerica DRO/ORO and SVOC) data from all 30 off-site borings in the C&O Canal (boundaries in blue) were used in selecting the 10 soils from nine borings for fingerprinting.

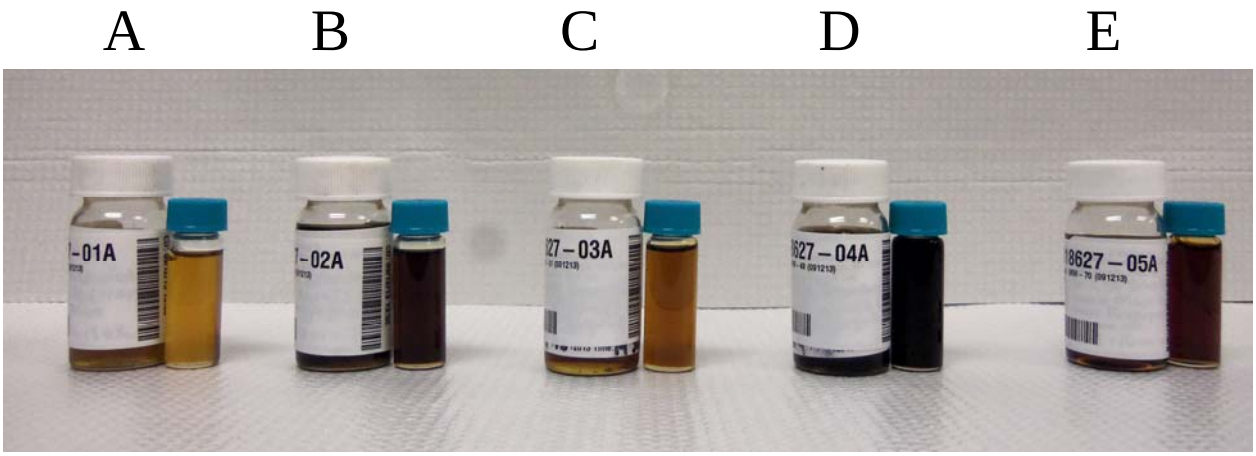

Figure 2: Photograph of the LPHs studied (as received by Alpha): (A) MW-56, (B) MW-55, (C) MW-37, (D) MW-49, and (E) MW-70.

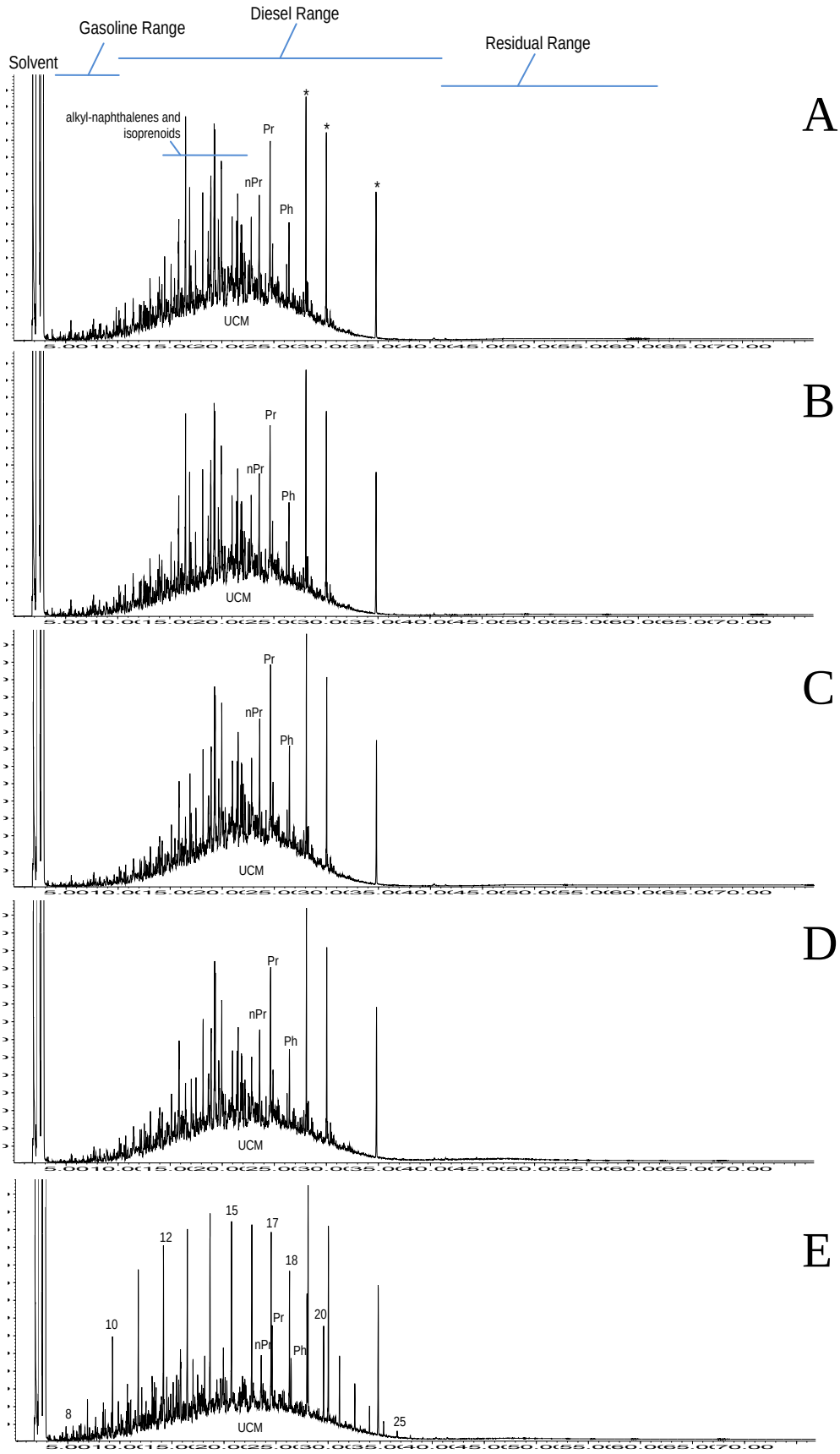

Figure 3: GC/FID chromatograms for the LPHs studied: (A) MW-56, (B) MW-55, (C) MW-49, (D) MW-37, and (E) MW-70. Pr-pristane; Ph-phytane; nPr-norpristane; UCM-unresolved complex mixture; #-n-alkane carbon number. See attached data tables for absolute concentrations of n-alkanes and isoprenoids; *-internal standards.

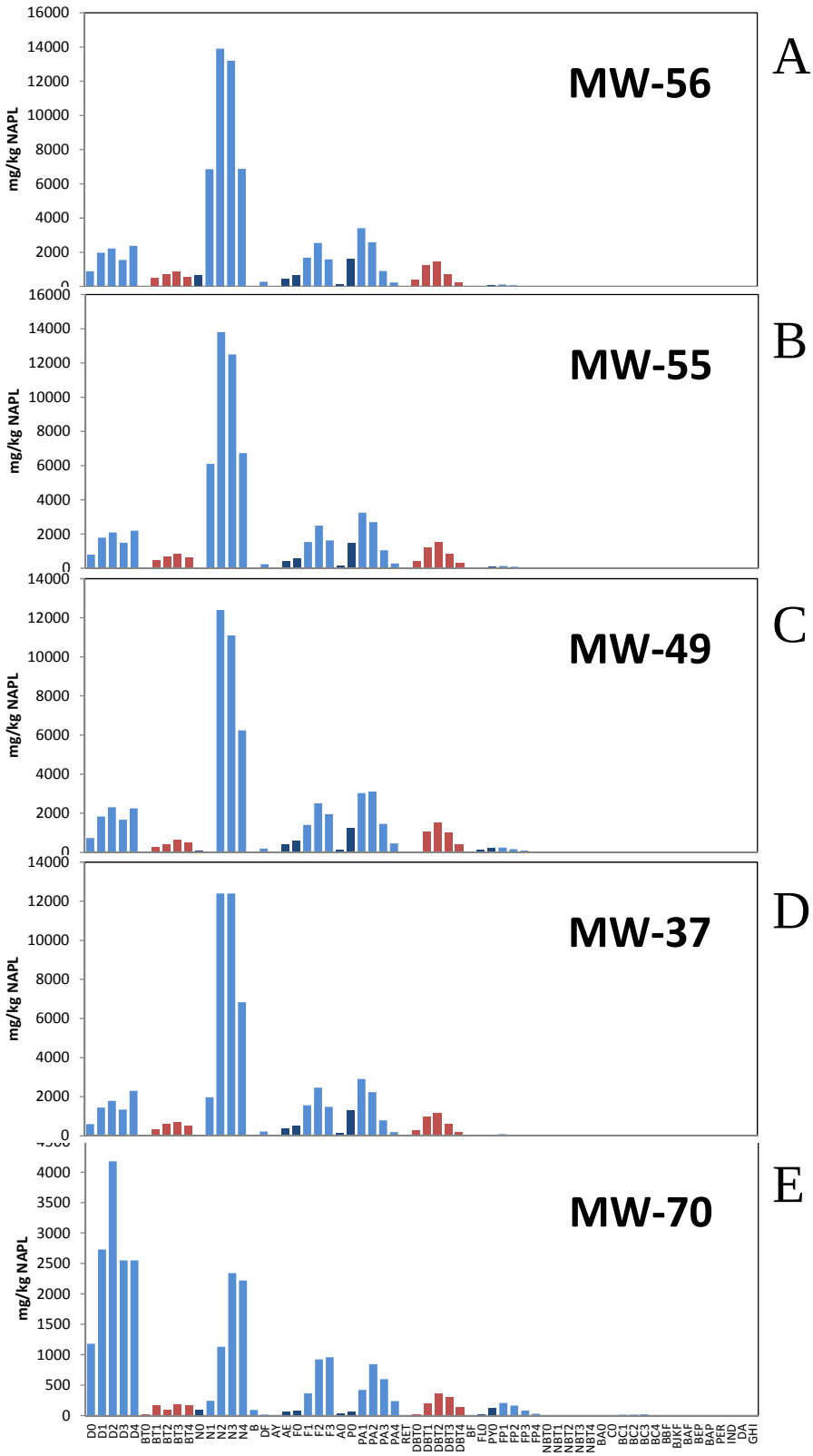

Figure 4: Histograms showing the concentrations of decalins, PAHs, and sulfur-containing aromatics in the LPHs studied: (A) MW-56, (B) MW-55, (C) MW-49, (D) MW-37, and (E) MW-70. See attached data tables for absolute concentrations and compound abbreviations. (Dk. Blue: Priority Pollutant PAHs; Red: sulfur-containing aromatics).

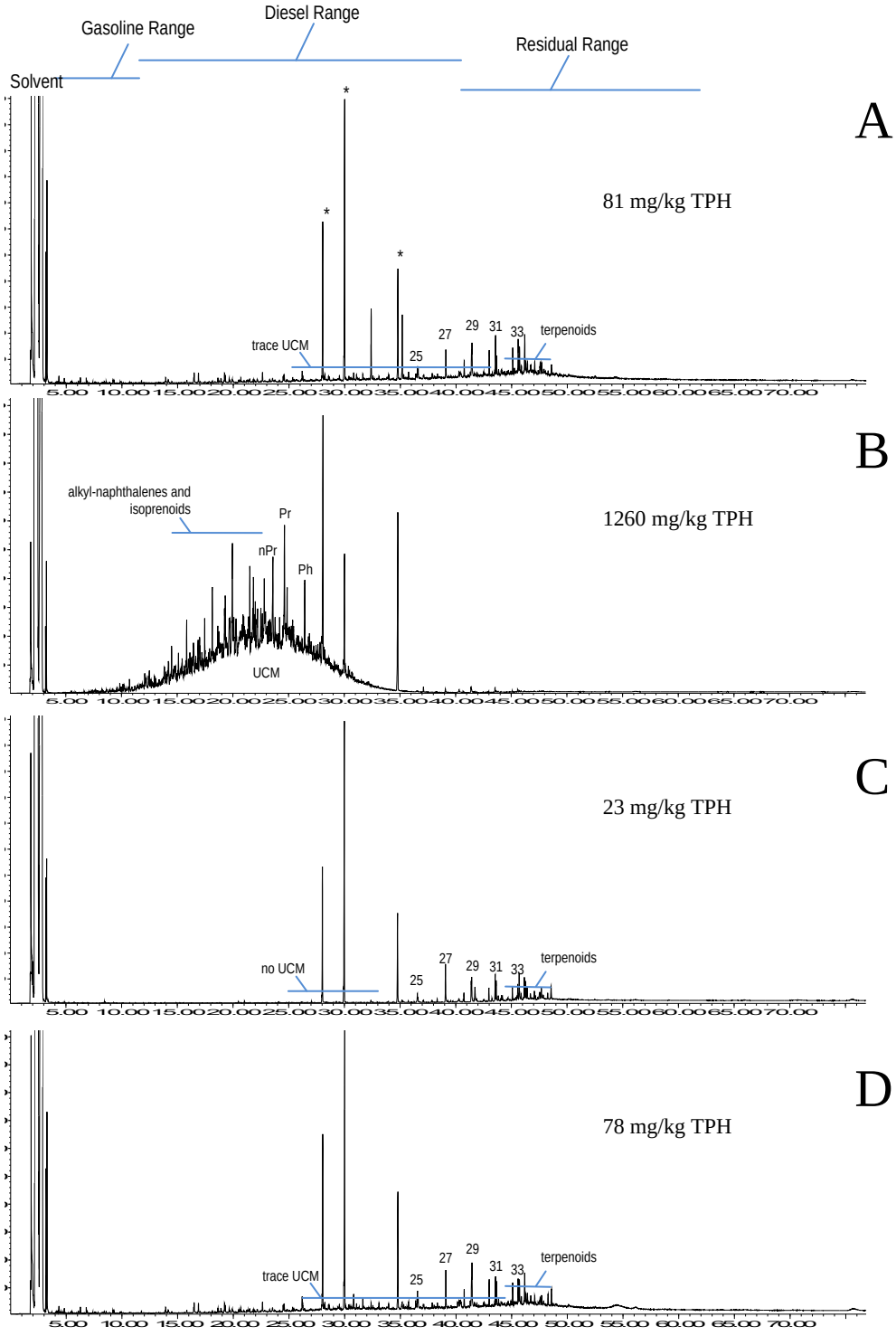

Figure 5: GC/FID chromatograms and TPH (C9-C44) for the soils/sediments from Area 1 of the C&O Canal prism footprint (see Fig. 1): (A) SB01-04 (0.0-1.5), (B) SB01-04 (6.0-7.0), (C) SB01-05 (8.0-9.0), and (D) SB01-07 (0.5-1.5). Pr-pristane; Ph-phytane; nPr-norpristane; UCM-unresolved complex mixture; #-n-alkane carbon number. See attached data tables for absolute concentrations of n-alkanes and isoprenoids; *-internal standards.

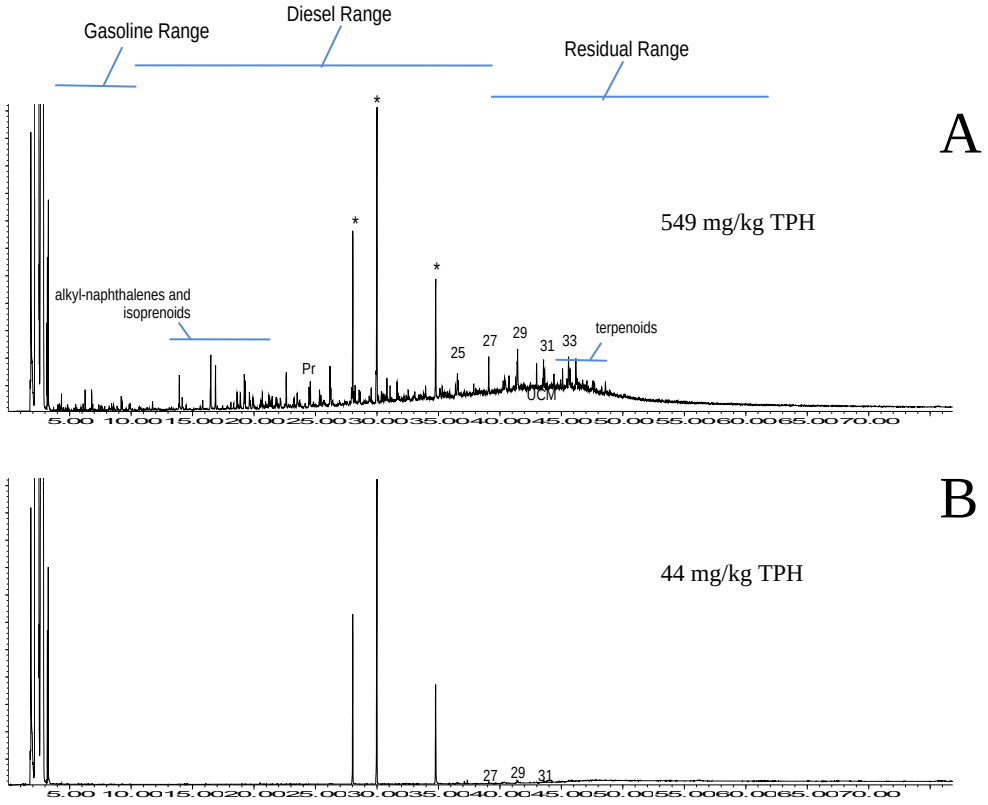

Figure 6: GC/FID chromatograms and TPH (C9-C44) for the soils/sediments from Area 2 of the C&O Canal prism footprint (see Fig. 1): (A) SB02-05 (0.5-1.5) and (B) SB02-09 (4.5-5.5). Pr-pristane; Ph-phytane; nPr-norpristane; UCM-unresolved complex mixture; #-n-alkane carbon number. See attached data tables for absolute concentrations of n-alkanes and isoprenoids; *-internal standards.

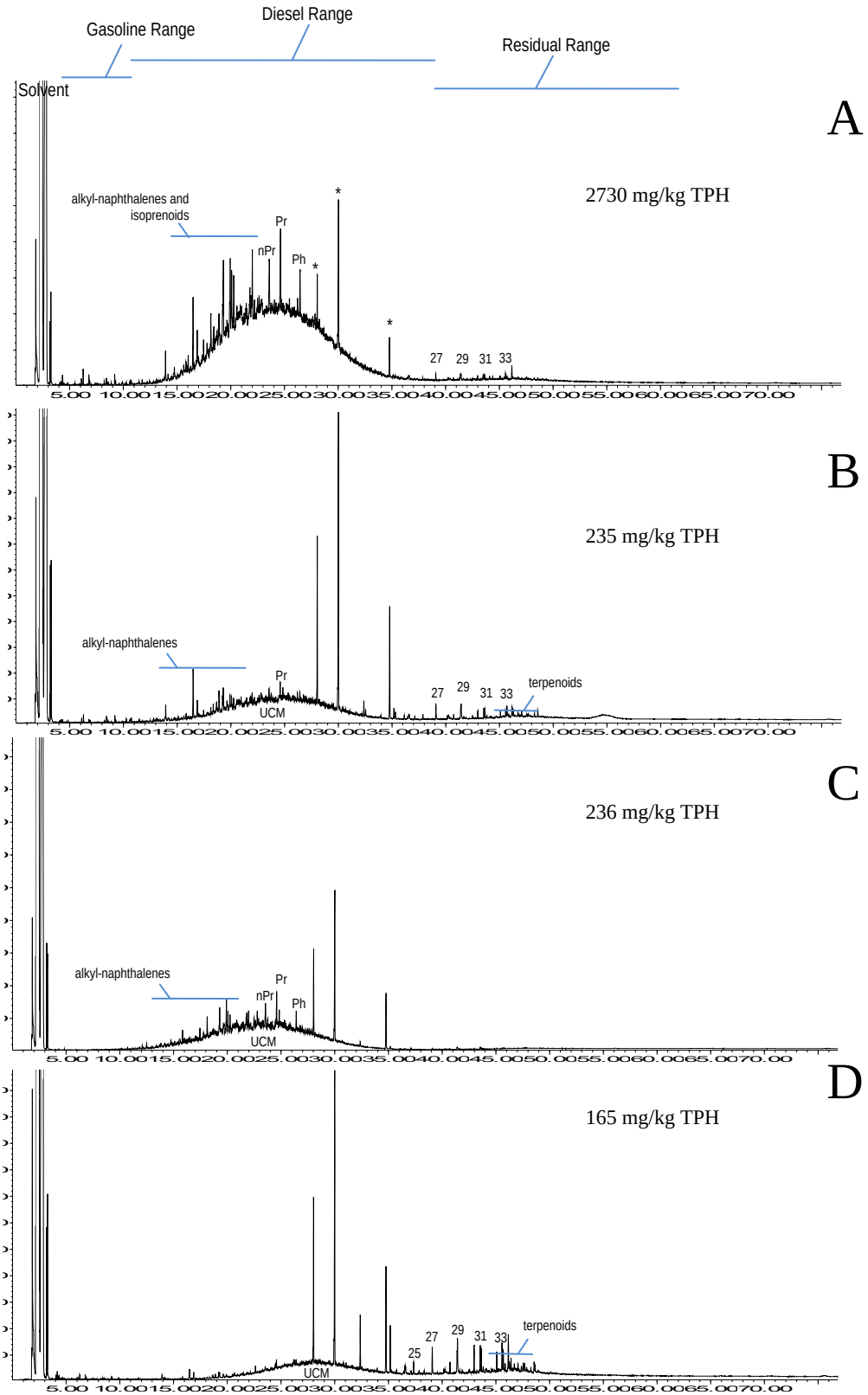

Figure 7: GC/FID chromatograms and TPH (C9-C44) for the soils/sediments from Area 3 of the C&O Canal prism footprint (see Fig. 1): (A) SB03-06 (0.0-1.0), (B) SB03-07 (4.5-5.5), (C) SB03-08 (3.0-4.0), and (D) SB03-10 (0.5-1.5). Pr-pristane; Ph-phytane; nPr-norpristane; UCM-unresolved complex mixture; #-n-alkane carbon number. See attached data tables for absolute concentrations of n-alkanes and isoprenoids; *-internal standards.

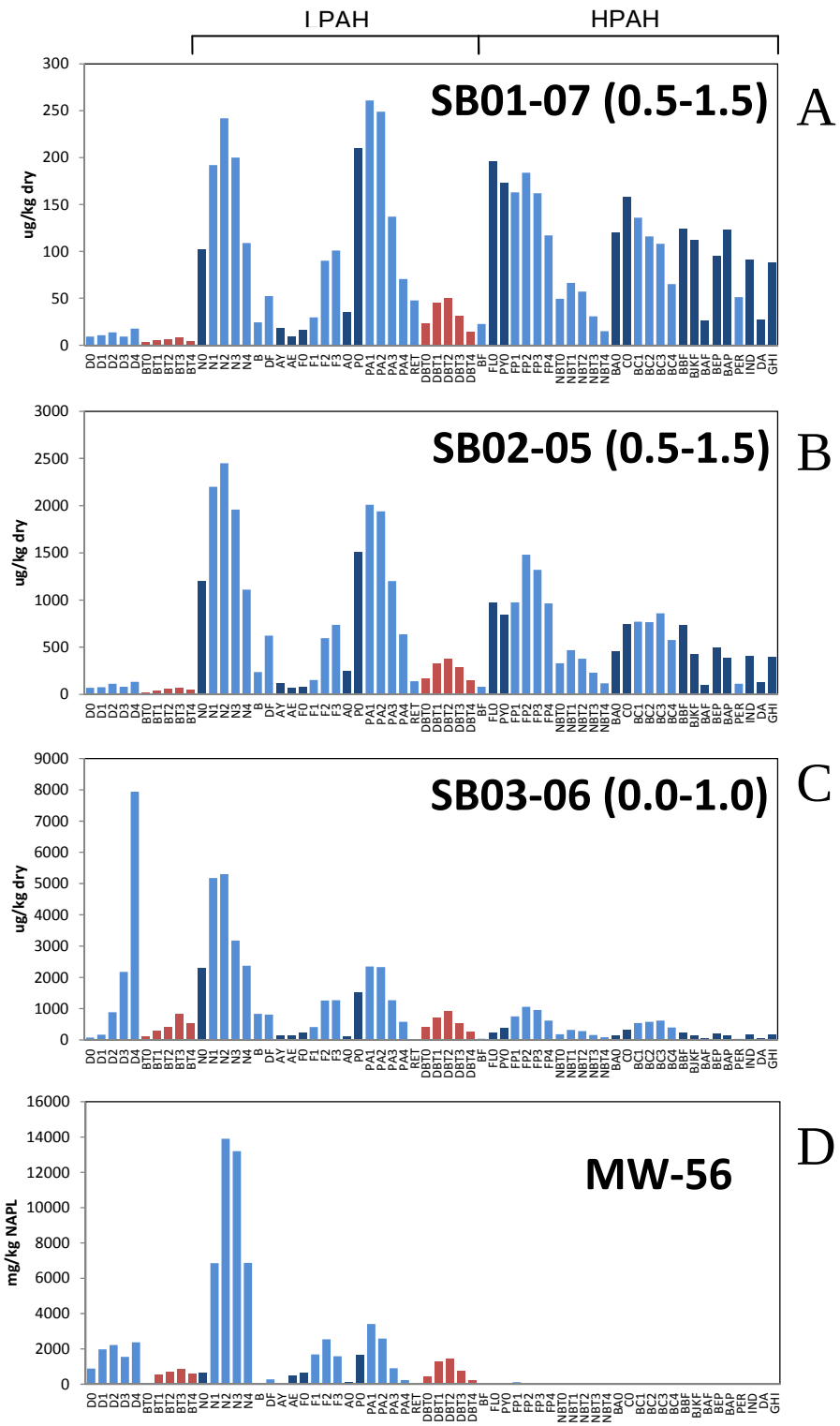

Figure 8: Histograms showing the concentrations of decalins, PAHs, and sulfur-containing aromatics in the C&O Canal sediments studied: (A) SB01-07 (0.5-1.5), (B) SB02-05 (0.5-1.5), and (C) SB03-06 (0.0-1.0). (D) Shows the same for one of the on-site LPHs (MW-56) for comparison. See attached data tables for absolute concentrations and compound abbreviations. (Dk. Blue: Priority Pollutant PAHs; Red: sulfur-containing aromatics).

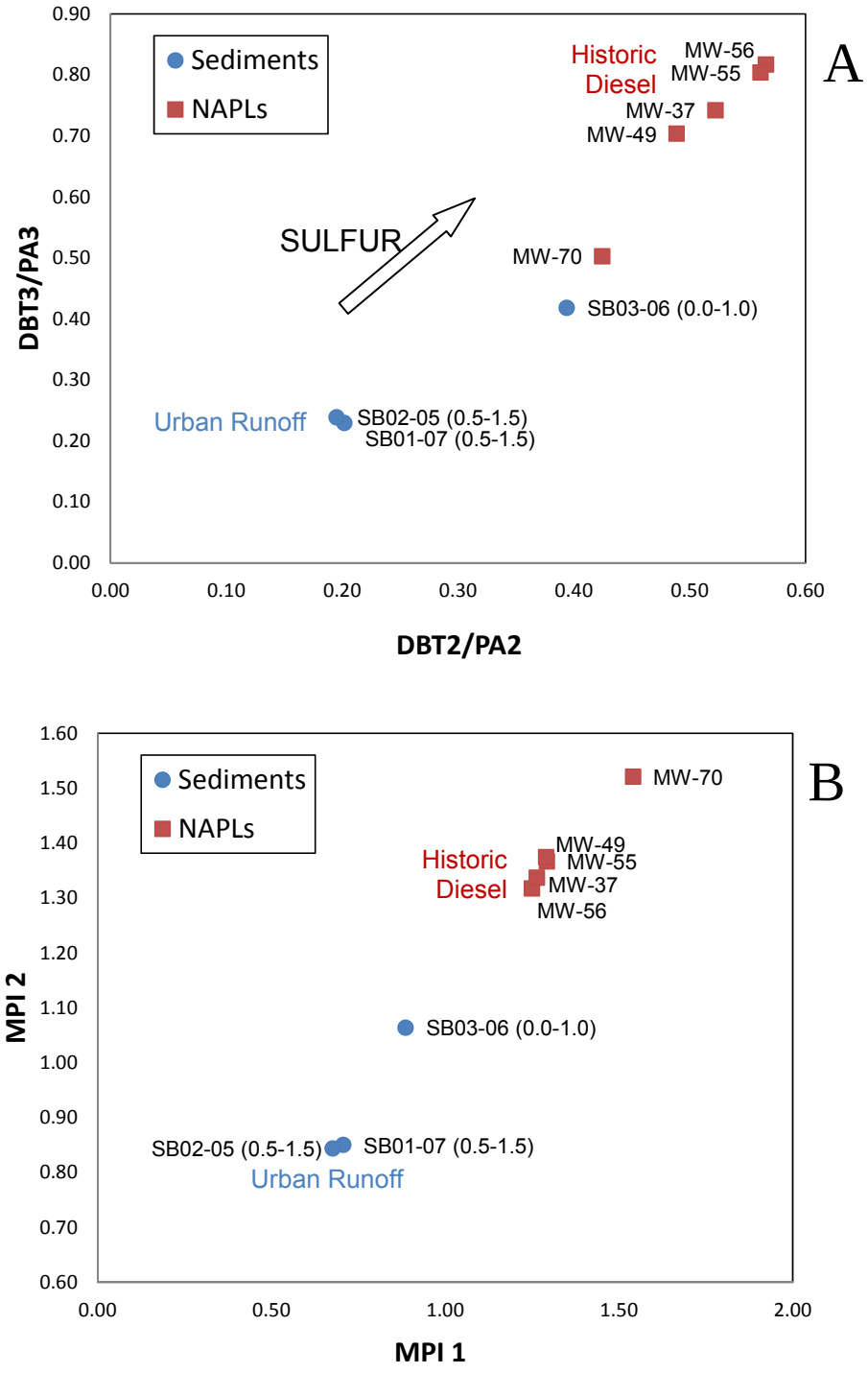

Figure 9: Cross-plots showing diagnostic features of the LPHs and C&O Canal sediments studied based upon (A) relative abundance of sulfur-containing aromatics and (B) distribution of methyl-phenanthrene isomers. Data from Table 2B. (Dk. Blue: Priority Pollutant PAHs; Red: sulfur-containing aromatics).

ATTACHMENTS

Table 2 column header definitions

Column Header	Definition
TPH (ppm)	total petroleum hydrocarbons C9-C44
TPAH51 (ppm)	total PAHs, sum of 51 analytes from naphthalene to benzo(ghi)perylene on attached data tables
TPAH16 (ppm)	total of 16 Priority Pollutant PAHs only
%TPAH51 as TPAH16	percentage of total PAHs (51) that are Priority Pollutant PAHs (16)
%TPH as TPAH51	percentage of TPH that occurs as TPAH51
%TPH as TPAH16	percentage of TPH that occurs as TPAH16
nC17/Pr	n-hexadecane/pristane
nC18/Ph	n-octadecane/phytane
CPI	Carbon Preference Index per Stout et al. (2002)
DBT2/ PA2	C2-dibenzothiophenes/C2-phenanthrenes & anthracenes
DBT3/ PA3	C3-dibenzothiophenes/C3-phenanthrenes & anthracenes
MPI 1	methylphenanthrene index 1 per Stout et al. (2002)
MPI 2	methylphenanthrene index 2 per Stout et al. (2002)
MPR	methylphenanthrene ratio Stout et al. (2002)

Stout et al. (2002) Chemical fingerprinting of Hydrocarbons, In: Introduction to Environmental Forensics, B. Murphy and R. Morrison, Eds., Academic Press, New York, p. 135-260.

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ID#: 130823-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #:

Send Results to:

Contact & Company Name: MEGAN KELLNER/ARCADIS	Telephone: 410.987.3200
Address: 1114 BENFIELD BLVD.	Fax: 410.907.4342
City: MILLERSVILLE State: MD Zip: 21108	E-mail Address: Megan.Kellner@arcadis-us.com
Project Name/Location (City, State): C&O CANAL BRUNSWICK RAIL YARD	Project #: MD000843.0011.00004
Sampler's Printed Name: LAUREN LAMP	Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (X) Comp	Type (X) Grab	Matrix	Preservative	Filtered (Y/N)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD: Filing & Printing	REMARKS
SB01-01 (1.0-2.0)	8/19/13	1230		X	SO	NONE		1	4.0z SO,G JAR	X	HOLD ALL SAMPLES UNTIL ANALYTICAL RESULTS ARE IN FROM TEST AMERICA
SB01-01 (9.0-10.0)		1235		X						X	
SB01-02 (0.5-1.5)		1425		X						X	
SB01-02 (5.0-6.0)		1435		X						X	
SB01-03 (0.5-1.5)		1400		X						X	
SB01-03 (5.0-6.0)		1430		X	SO					X	
SB01-04 (0.0-1.0)		1530		X						X	
SB01-04 (5.0-6.0)		1535		X						X	
SB01-05 (1.0-2.0)		1615		X						X	
SB01-05 (6.5-7.5)		1620		X						X	
SB01-06 (1.5-2.5)		1645		X	SO					X	
SB01-06 (8.5-9.5)	8/19/13	1650		X						X	
SB01-07 (0.5-1.5)	8/20/13	0830		X						X	
SB01-07 (9.0-10.0)	8/20/13	0840		X	SO					X	

Keys

Preservation Key: A: HCl, SO; B: HCl; C: HNO3; D: NaOH; E: None; F: Other; G: Other; H: Other

Container Information Key: 1: 40ml Vial; 2: 1L Amber; 3: 250 ml Plastic; 4: 500 ml Plastic; 5: Encore; 6: 2oz. Glass; 7: 4oz. Glass; 8: 8oz. Glass; 9: Other; 10: Other

Matrix Key: SO: Soil; SE: Sediment; NL: NAPL/Oil; W: Water; SL: Sludge; SW: Sample Wipe; T: Tissue; A: Air; Other

Special Instructions/Comments: CSXT PROJECT INFO
PN: 941538I NAME: C&O CANAL / BRUNSWICK RAIL YARD STATE: ~~MD~~ MD

Special QA/QC Instructions(✓): CSXT STANDARD (LEVEL II)
CSXT CONTACT: PAUL KURZANSKI
LWON: CNV33683

Laboratory Information and Receipt

Lab Name: ALPHA ANALYTICAL
X Cooler packed with ice (✓)
Specify Turnaround Requirements: ~~CSXT STANDARD~~ LML
Shipping Tracking #:
Cooler Custody Seal (✓): ☐ Intact ☐ Not Intact
Sample Receipt: Condition/Cooler Temp:

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: LAUREN LAMP	Printed Name: Paul Walukevich	Printed Name:	Printed Name:
Signature:	Signature: Paul D. Waluk	Signature:	Signature:
Firm: ARCADIS	Firm/Courier: Alpha Analytical	Firm/Courier:	Firm:
Date/Time: 8-23-13 / 1500	Date/Time: 8/24/13 1053	Date/Time:	Date/Time:

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results; YELLOW – Lab copy; PINK – Retained by ARCADIS

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ID#: 130823-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #:

Send Results to:
Contact & Company Name:
Telephone:
Address:
Fax:
City / State / Zip: SEE PAGE 1
E-mail Address:

Project Name/Location (City, State):
Project #: MD000843.0011.00004
Sampler's Printed Name: LAUREN LAMP
Sampler's Signature:

Preservative: None
Filtered (✓):
of Containers: 1
Container Information: 4 oz SOIL JAR

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key: A: H2SO4 B: HCL C: HNO3 D: NaOH E: None F: Other ____ G: Other ____ H: Other ____

Container Information Key: 1: 40 ml Vial 2: 1L Amber 3: 250 ml Plastic 4: 500 ml Plastic 5: Encore 6: 2 oz. Glass 7: 4 oz. Glass 8: 8 oz. Glass 9: Other ____ 10: Other ____

Matrix Key: SO: Soil SE: Sediment NL: NAPL/Oil SW: Water SL: Sludge SW: Sample Wipe T: Tissue A: Air Other ____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Fingerprinting	REMARKS
SB01-08 (1.5-2.5)	8/20/13	0900		X	SO	X	Had Samples Until Data In From TA
SB01-08 (9.0-10.0)		0910		X		X	
SB01-09 (0.0-1.0)		0930		X		X	
SB01-09 (4.0-5.0)		0940		X		X	
SB01-10 (0.0-1.0)		1015		X		X	
SB01-10 (4.0-5.0)		1025		X		X	
SB02-01 (0.0-1.0)		1115		X		X	
SB02-01 (7.0-8.0)		1125		X		X	
SB02-02 (0.0-1.0)		1145		X		X	
SB02-02 (4.5-5.5)		1150		X		X	
SB02-03 (0.5-1.5)		1410		X	SO	X	
SB02-03 (5.0-6.0)		1415		X		X	
SB02-04 (0.5-1.5)		1425		X		X	
SB02-04 (7.0-8.0)	8/20/13	1430		X	SO	X	

Special Instructions/Comments: SEE PG 1

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt
Lab Name:
☐ Cooler packed with ice (✓)
Specify Turnaround Requirements:
Shipping Tracking #:
Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact
Sample Receipt
Condition/Cooler Temp:

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: LAUREN LAMP	Printed Name: Paul Waldkevich	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: ARCADIS	Firm/Courier: Alpha Analytical	Firm/Courier:	Firm:
Date/Time: 8-23-13 1500	Date/Time: 8/24/13 1053	Date/Time:	Date/Time:

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

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ID#: 130823-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #:

Send Results to:
Contact & Company Name: SEE Pg
Address:
City State Zip
Telephone:
Fax:
E-mail Address:

Project Name/Location (City, State):
Project #: MD000843.0011.00004

Sampler's Printed Name: LAUREN LAMP
Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD: Fingerprinting	REMARKS
SB02-05 (0.5-1.5)	8/20/13	1450		X	SO	None		1	4 oz Soil Jar	X	
SB02-05 (7.0-8.0')		1500		X						X	
SB02-06 (0.5-1.5)		1525		X						X	
SB02-06 (6.5-7.5)	8/20/13	1535		X						X	
SB02-07 (0.5-1.5)	8/21/13	0850		X	SO					X	
SB02-07 (5.5-6.5)		0900		X						X	
SB02-08 (0.5-1.5)		0910		X						X	
SB02-08 (7.0-8.0)		0920		X						X	
SB02-09 (0.5-1.5)		1000		X						X	
SB02-09 (4.5-5.5)		1010		X	SO					X	
SB02-10 (0.5-1.5)		1020		X						X	
SB02-10 (5.0-6.0)		1030		X						X	
SB03-01 (0.5-1.5)		1230		X						X	
SB03-01 (5.0-6.0)	8/24/13	1240		X	SO					X	

HOLD SAMPLES UNTIL ANALYTICAL DATA IN FROM TA

Keys

Preservation Key: A: H2SO4 B: HCl C: HNO3 D: NaOH E: None F: Other ____ G: Other ____ H: Other ____

Container Information Key: 1: 40 ml Vial 2: 1 L Amber 3: 250 ml Plastic 4: 500 ml Plastic 5: Encore 6: 2 oz. Glass 7: 4 oz. Glass 8: 8 oz. Glass 9: Other ____ 10: Other ____

Matrix Key: SO - Soil SE - Sediment NL - NAPL Oil SW - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other ____

Special Instructions/Comments: SEE Pg 1

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: LAUREN LAMP	Printed Name: Paul Waldkirch	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)		Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt	Firm: ARCADIS	Firm/Courier: Alpha Analytical	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 8-23-13/1500	Date/Time: 8/24/13 1053	Date/Time:	Date/Time:

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

CSXT

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#: 130823-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #:

Send Results to:
Contact & Company Name:
Address:
City State Zip
Telephone:
Fax:
E-mail Address:

SEE PAGE 1

Project Name/Location (City, State):
Project #: MD000843.0011.00004
Sampler's Printed Name: LAUREN LAMP
Sampler's Signature:

Preservative: None
Filtered (✓):
# of Containers: 1
Container Information: 4 oz. Soil JAR

PARAMETER ANALYSIS & METHOD: Fingerprinted

Keys

Preservation Key: A- H2SO4, B- HCl, C- HNO3, D- NaOH, E- None, F- Other, G- Other, H- Other

Container Information Key: 1- 40 ml Vial, 2- 1 L Amber, 3- 250 ml Plastic, 4- 500 ml Plastic, 5- Encore, 6- 2 oz. Glass, 7- 4 oz. Glass, 8- 8 oz. Glass, 9- Other, 10- Other

Matrix Key: SO- Soil, SE- Sediment, NL- NAPL/Oil, SW- Water, SL- Sludge, SW- Sample Wipe, TI- Tissue, A- Air, Other

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Fingerprinted	REMARKS
SB03-02 (0.0-1.0)	8/21/13	1250		X	SO	X	HOLD SAMPLES UNTIL DATA IN FROM TA
SB03-02 (3.0-4.0)		1300		X		X	
SB03-03 (0.5-1.5)		1320		X		X	
SB03-03 (3.0-4.0)		1330		X		X	
SB03-04 (0.5-1.5)		1350		X		X	
SB03-04 (4.0-5.0)	8/21/13	1400		X	SO	X	
SB03-06 (0.0-1.0)	8/22/13	0845		X		X	
SB03-06 (2.5-3.5)		0855		X		X	
SB03-05 (0.0-1.0)		0915		X		X	
SB03-05 (3.5-4.5)		0925		X		X	
SB03-07 (1.5-2.5)		1000		X	SO	X	
SB03-07 (4.5-5.5)		1010		X		X	
SB03-08 (1.0-2.0)		1030		X		X	
SB03-08 (3.0-4.0)	8/22/13	1040		X	SO	X	

Special Instructions/Comments:
SEE PG 1

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: LAUREN LAMP	Printed Name: Paul Walukevich	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt	Firm: ARCADIS	Firm/Courier: Alpha Analytical	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 8-23-13 / 1500	Date/Time: 8/24/13 1053	Date/Time:	Date/Time:

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

CSXT

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Infrastructure · Water · Environment · Buildings

ID#: 130823-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #:

Send Results to:

Contact & Company Name: PG 1

Telephone:

Address:

Fax:

City State Zip SEE

E-mail Address:

Project Name/Location (City, State):

Project #: MD000843.0011.00004

Sampler's Printed Name: LAUREN LAMP

Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD: Fingerprinting
SB03-09 (1.0-2.0)	8/22/13	1050		X	SO	NONE		1	4 OZ. SOIL JAR	X
SB03-09 (3.5-4.5)		1100		X	SO					X
SB03-10 (0.5-1.5)		1130		X	SO					X
SB03-10 (5.5-6.5)	8/22/13	1140		X	SO					X

Keys

Preservation Key: A: H2SO4; B: HCL; C: HNO3; D: NaOH; E: None; F: Other ____; G: Other ____; H: Other ____

Container Information Key: 1: 40 ml Vial; 2: 1 L Amber; 3: 250 ml Plastic; 4: 500 ml Plastic; 5: Encore; 6: 2 oz. Glass; 7: 4 oz. Glass; 8: 8 oz. Glass; 9: Other ____; 10: Other ____

Matrix Key: SO: Soil; SE: Sediment; NL: NAPL/Oil; WW: Water; SL: Sludge; SW: Sample Wipe; T: Tissue; A: Air; O: Other ____

REMARKS

HOLD SAMPLES UNTIL ANALYTICAL DATA IN FROM TA

Special Instructions/Comments:

SEE PG 1 →

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: LAUREN LAMP	Printed Name: Paul Waltewski	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature: Paul P. Waltewski	Signature:	Signature:
Specify Turnaround Requirements	Sample Receipt	Firm: ARCADIS	Firm/Courier: Alpha Analytical	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 8-23-13/1500	Date/Time: 8/24/13 1053	Date/Time:	Date/Time:

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: 4318627

Client Information

Client: ARCADIS
Address: 1114 BENFIELD BLVD.
MILLERSVILLE, MD 21108
Phone: 410-987-3200
Fax: 410-907-4342
Email: megan.kellner@arcadis-us.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: CSX BRUNSWICK RAIL YARD | C&O CANAL
Project Location: BRUNSWICK, MD
Project #:
Project Manager: MEGAN KELLNER
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
EXCEPTED QUANTITY	CLASS 3

CSXT

Other Project Specific Requirements/Comments/Detection Limits: CSX PROJECT
CSXT PROJECT #: 941538I CSXT PROJECT NAME: C&O CANAL/BRUNSWICK RAIL YARD
CSXT CONTACT: PAUL KURZANSKI LWON: ENV33683
PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here: ☐

ANALYSIS: FINGERPRINT

SAMPLE HANDLING
Filtration
☐ Done
☒ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	FINGERPRINT	TOTAL # BOTTLES
L1318627-1	MW-56(091213)	9/12/13	1305	DIESEL	LL	X	
-2	MW-55(091213)	9/12/13	1355	DIESEL	LL	X	
-3	MW-37(091213)	9/12/13	1430	DIESEL	LL	X	
-4	MW-49(091213)	9/12/13	1630	DIESEL	LL	X	
-5	MW-70(091613)	9/16/13	1315	DIESEL	LL	X	

Container Type	P
Preservative	A

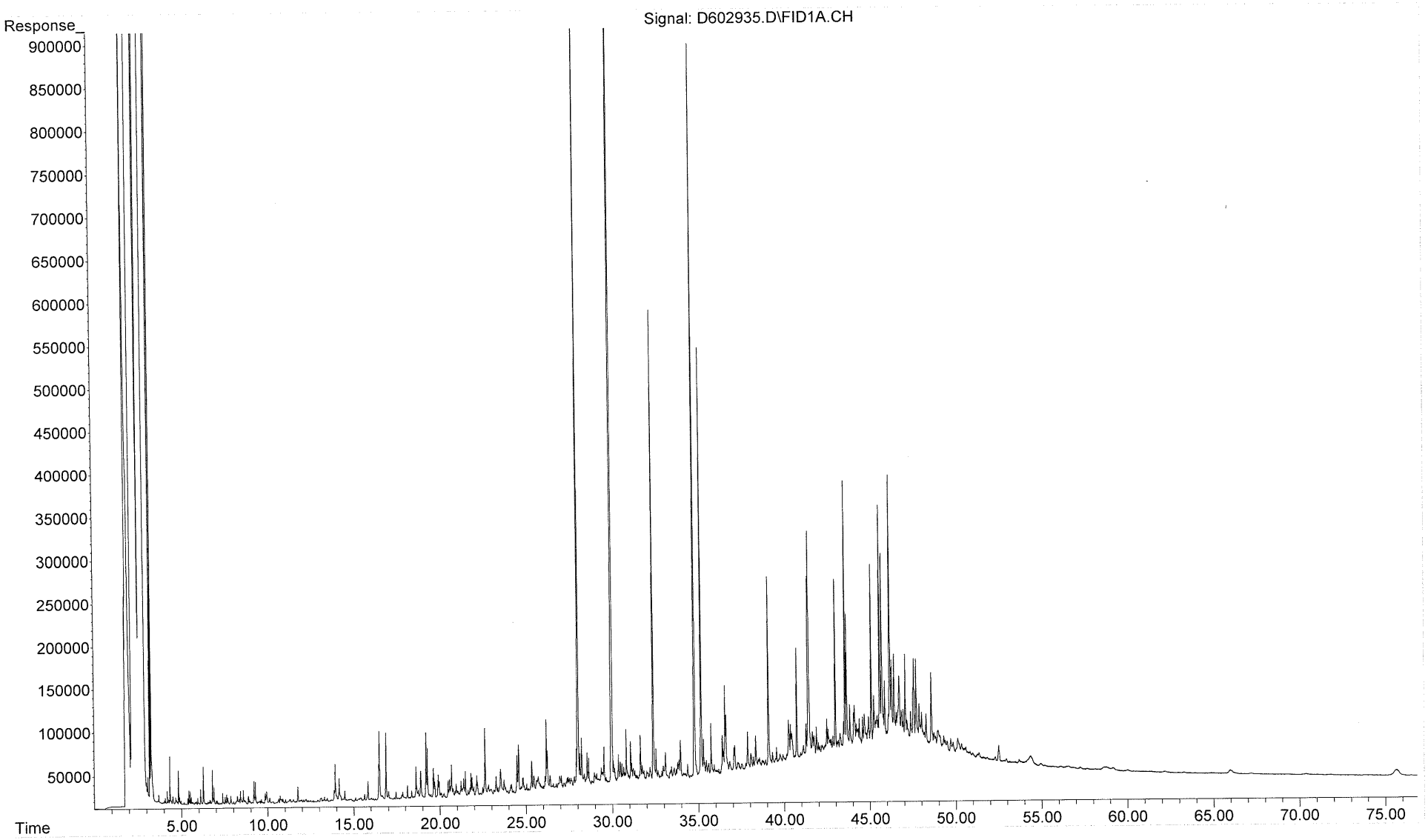
Relinquished By:	Date/Time	Received By:	Date/Time
LAUREN LAMP	9-16-13/1600	FEDEX	
FEDEX	9/19/13/1005		9/19/13 1005

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 101-09 (rev. 27-SEP-10)

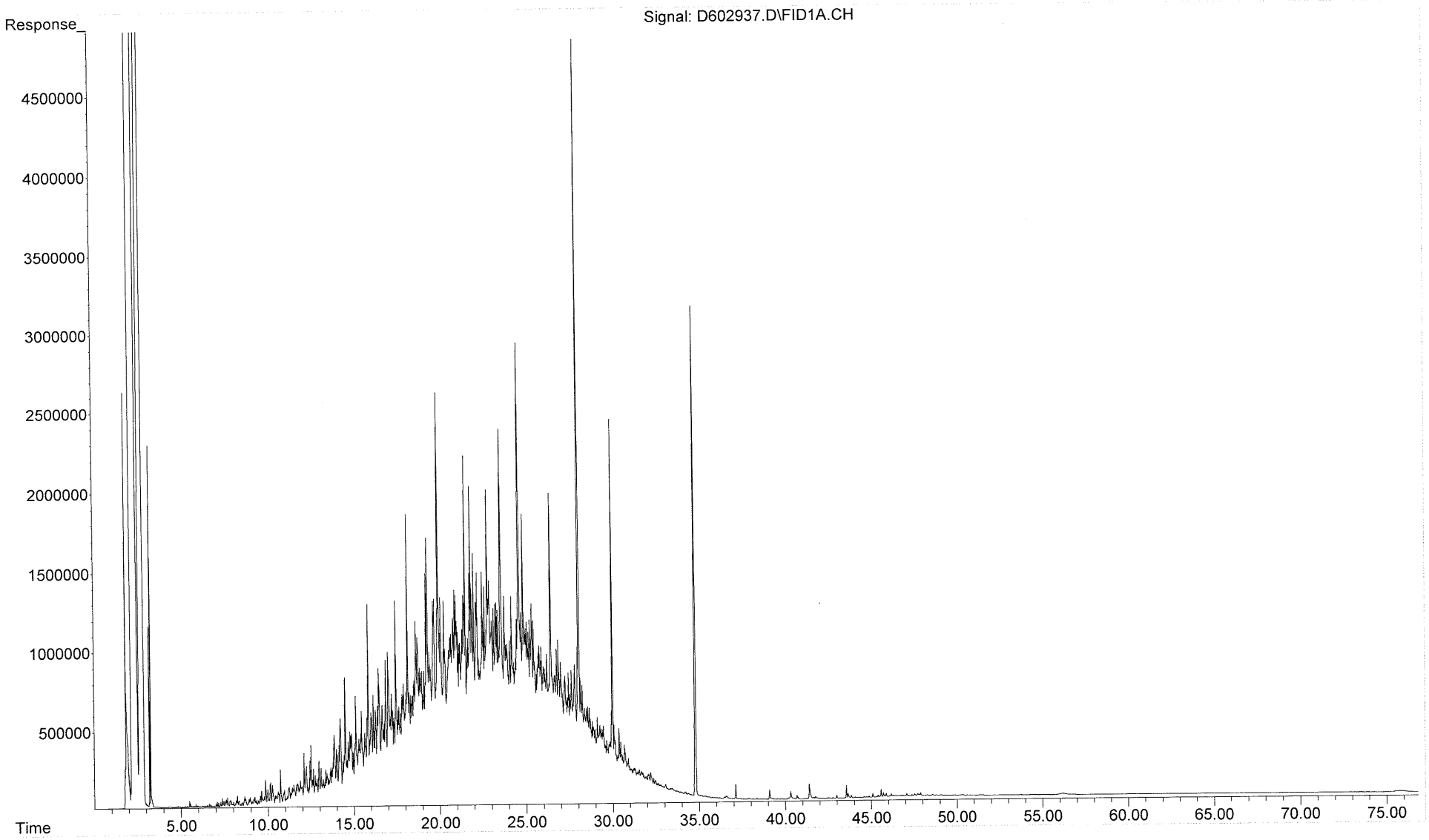
File :Y:\2013 AWHL Data\Arcadis-CSX\1309010\D602935.D
Operator : NLJr
Acquired : 27 Sep 2013 5:53 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-01
Misc Info : 1X
Vial Number: 10

SB01-04 (0.0-1.0)
1309010-01



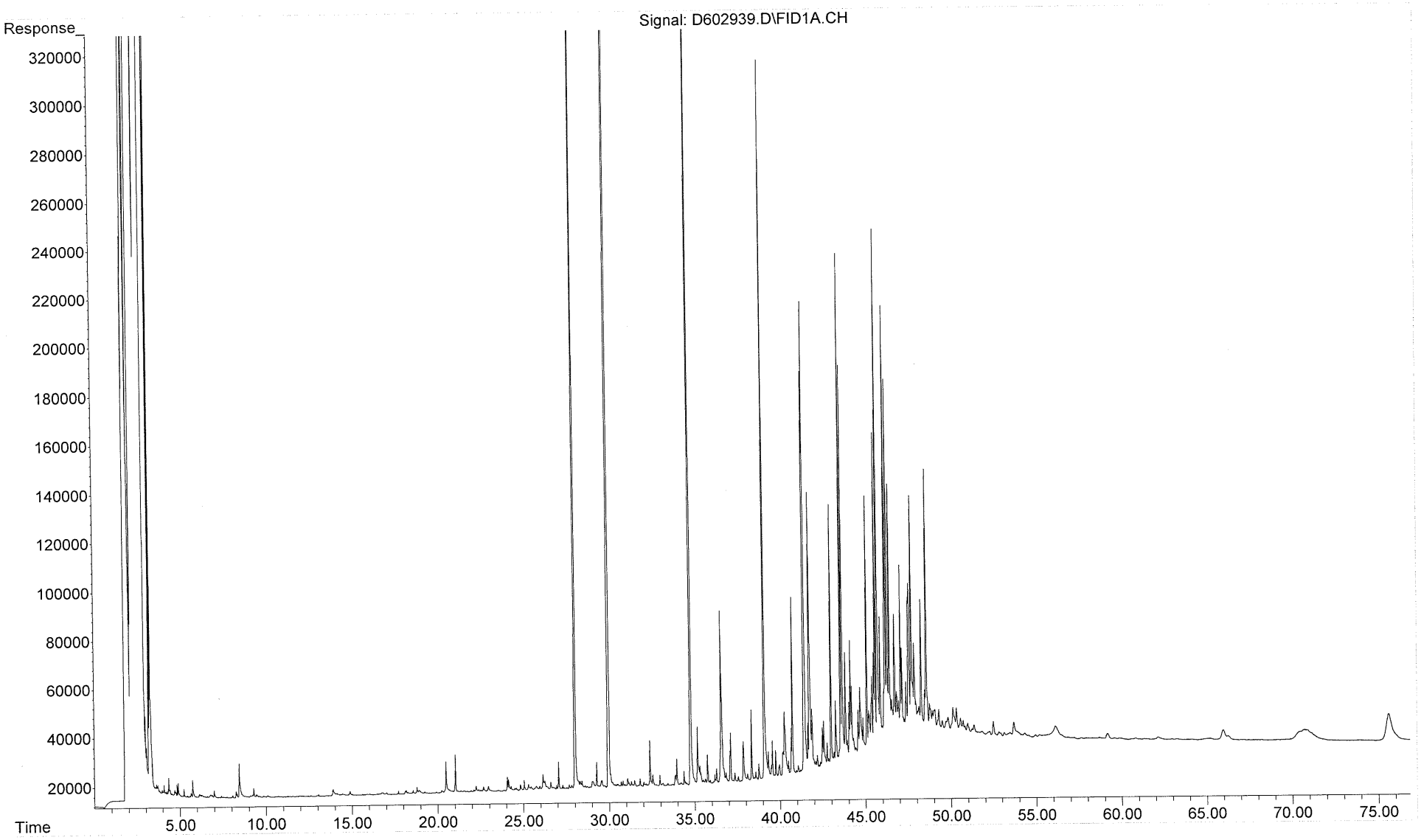
File :Y:\2013 AWHL Data\Arcadis-CSX\1309010\D602937.D
Operator : NLJr
Acquired : 27 Sep 2013 7:22 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-02
Misc Info : 1X
Vial Number: 11

SB01-04 (6.0-7.0)
1309010-02



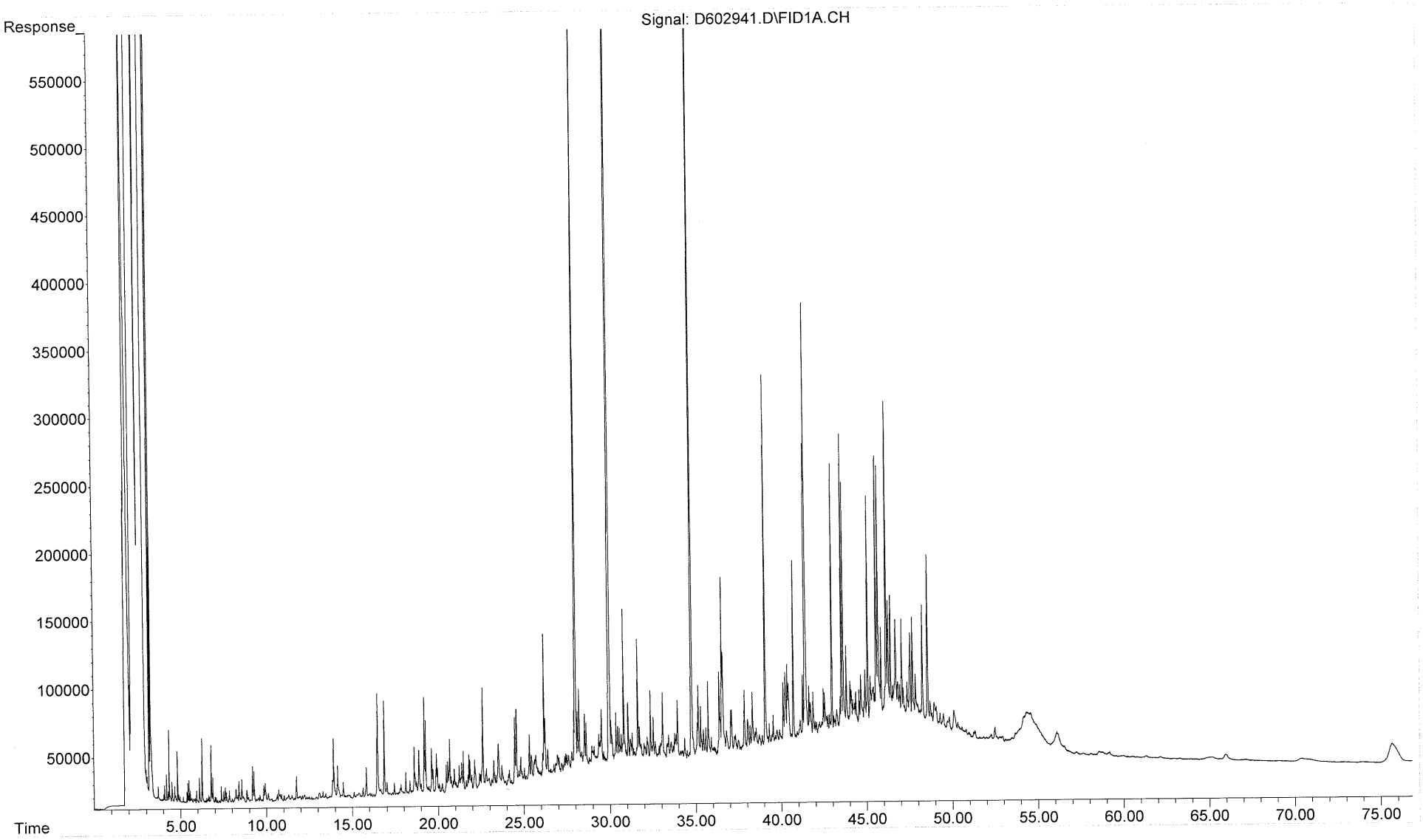
File :Y:\2013 AWHL Data\Arcadis-CSX\1309010\D602939.D
Operator : NLJr
Acquired : 27 Sep 2013 8:51 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-03
Misc Info : 1X
Vial Number: 12

SB01-05 (8.0-9.0)
1309010-03



File :Y:\2013 AWHL Data\Arcadis-CSX\1309010\D602941.D
Operator : NLJr
Acquired : 27 Sep 2013 10:19 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-04
Misc Info : 1X
Vial Number: 13

SB01-07 (0.5-1.5)
1309010-04



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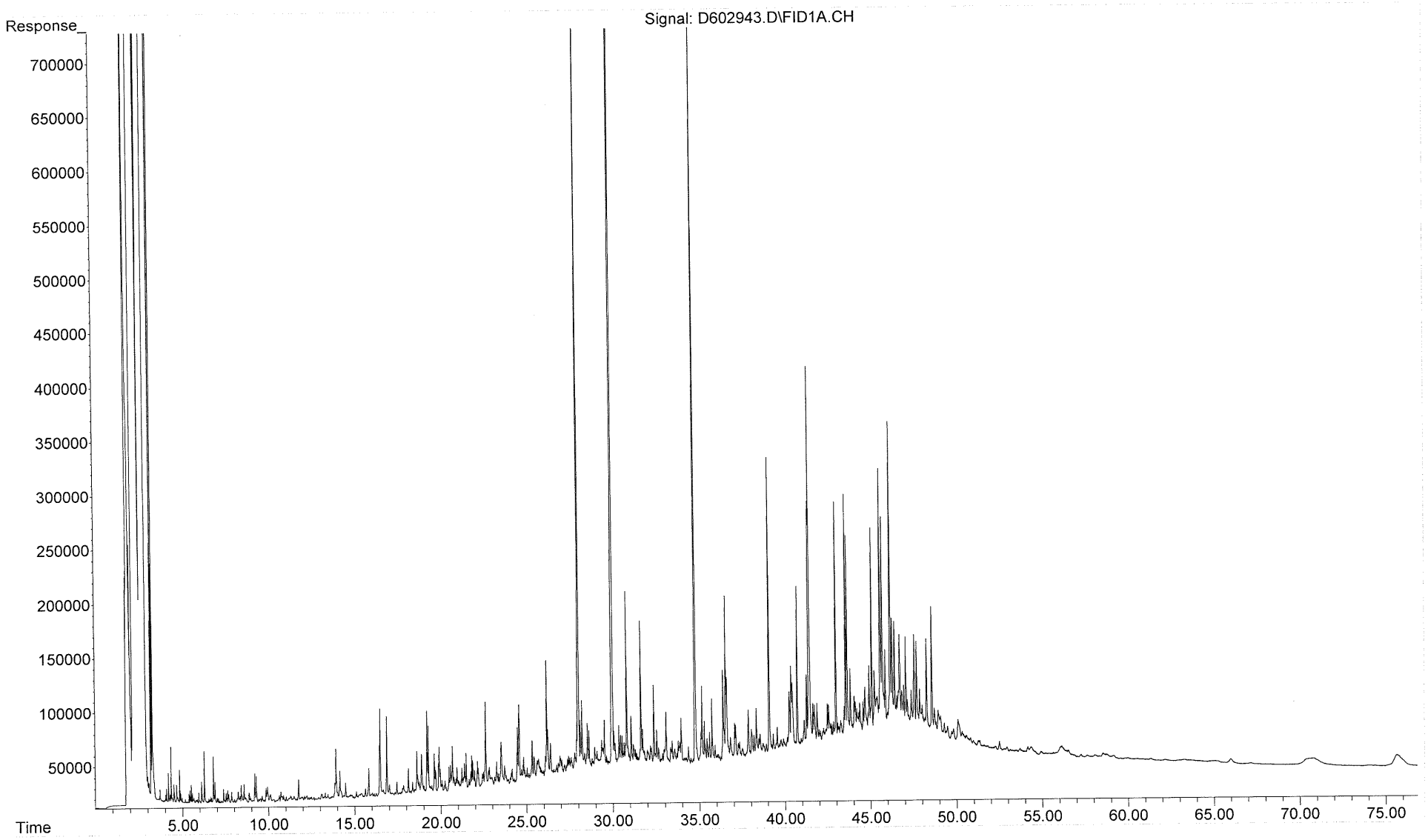
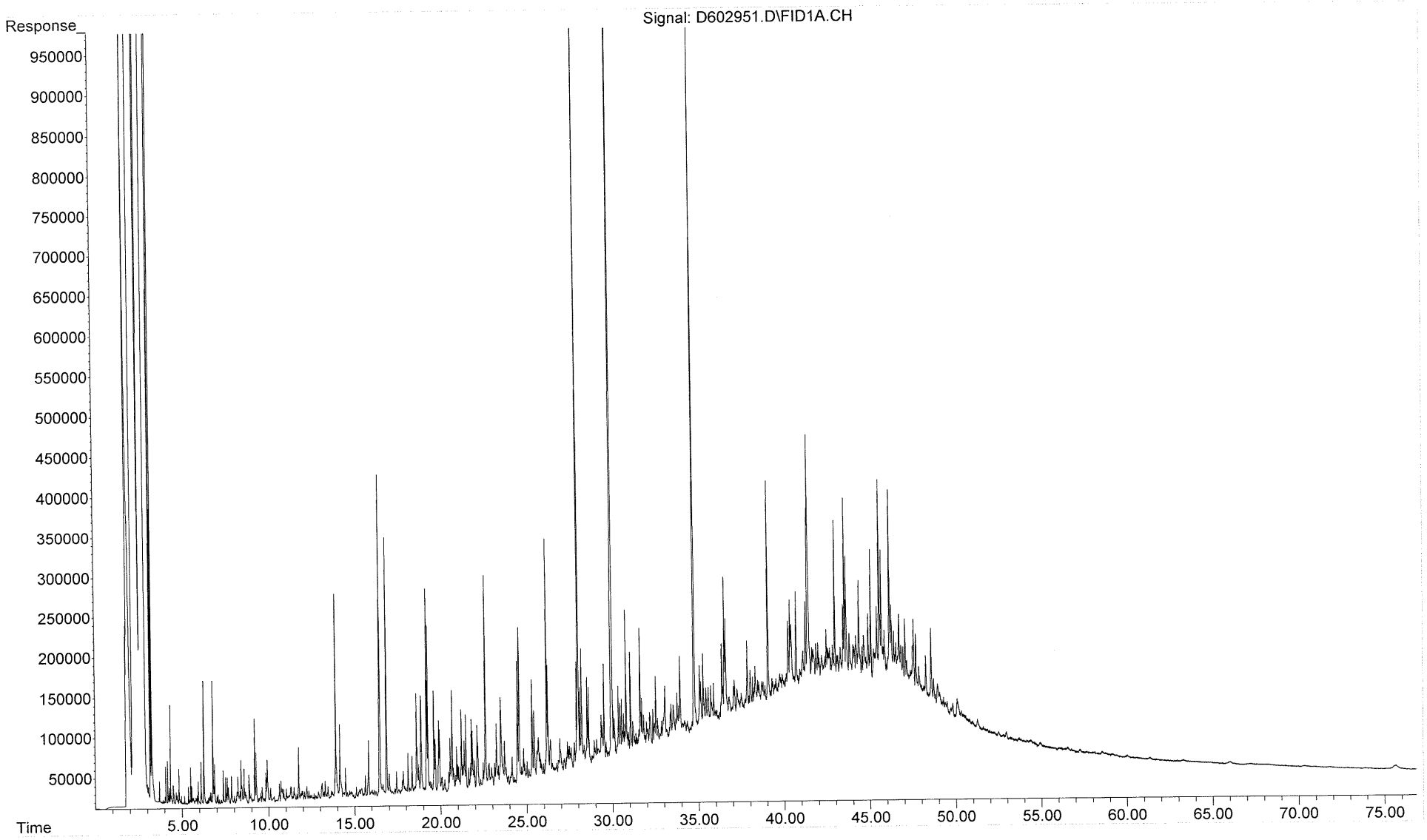
Operator : NLJr
Acquired : 27 Sep 2013 11:48 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-04D
Misc Info : 1X
Vial Number: 14

SB01-07 (0.5-1.5)
1309010-04D



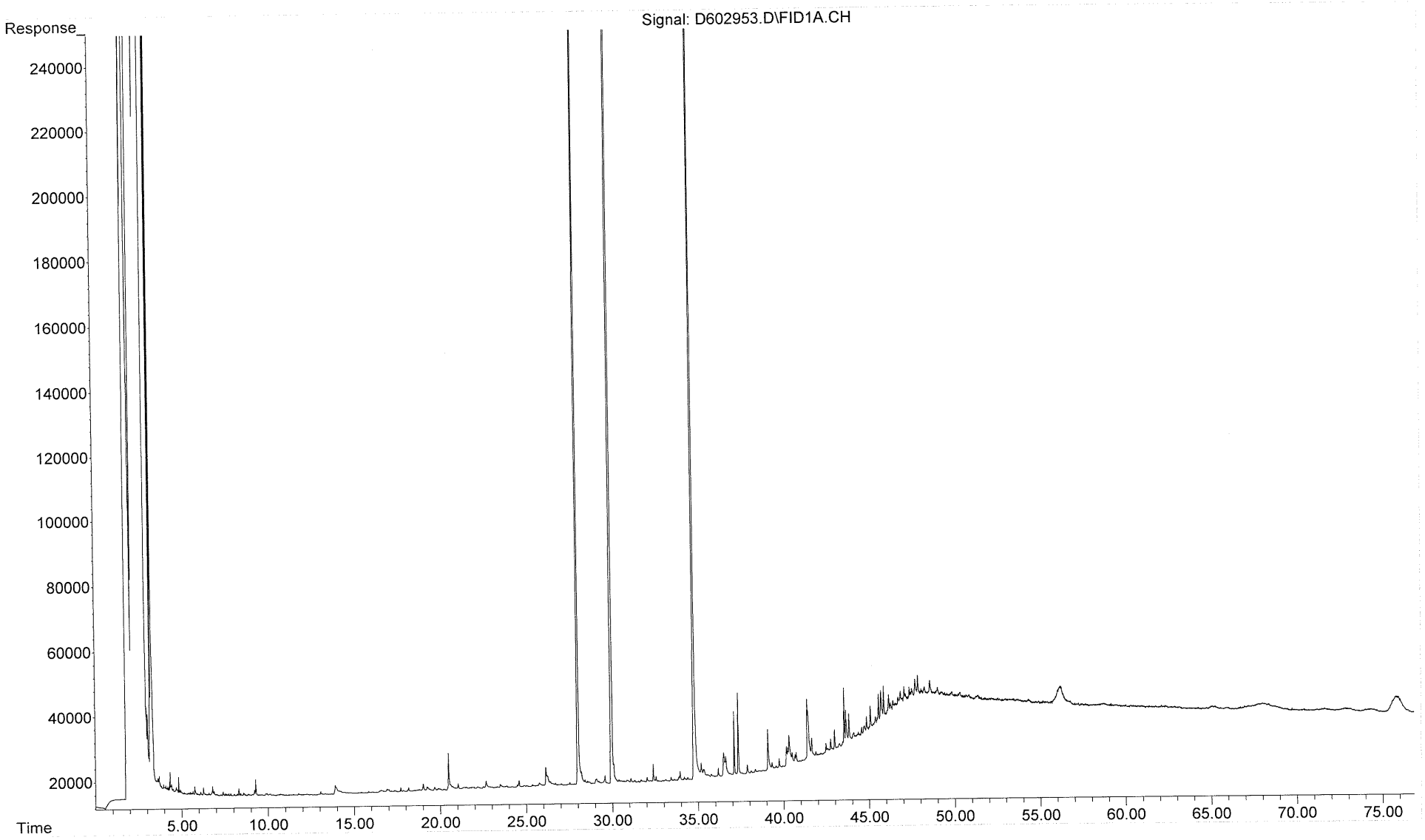
File :Y:\2013 AWHL Data\Arcadis-CSX\1309010\D602951.D
Operator : NLJr
Acquired : 27 Sep 2013 5:41 pm using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-05
Misc Info : 1X
Vial Number: 18

SB02-05 (0.5-1.5)
1309010-05



File :Y:\2013 AWHL Data\Arcadis-CSX\1309010\D602953.D
Operator : NLJr
Acquired : 27 Sep 2013 7:09 pm using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-06
Misc Info : 1X
Vial Number: 19

SB02-09 (4.5-5.5)
1309010-06



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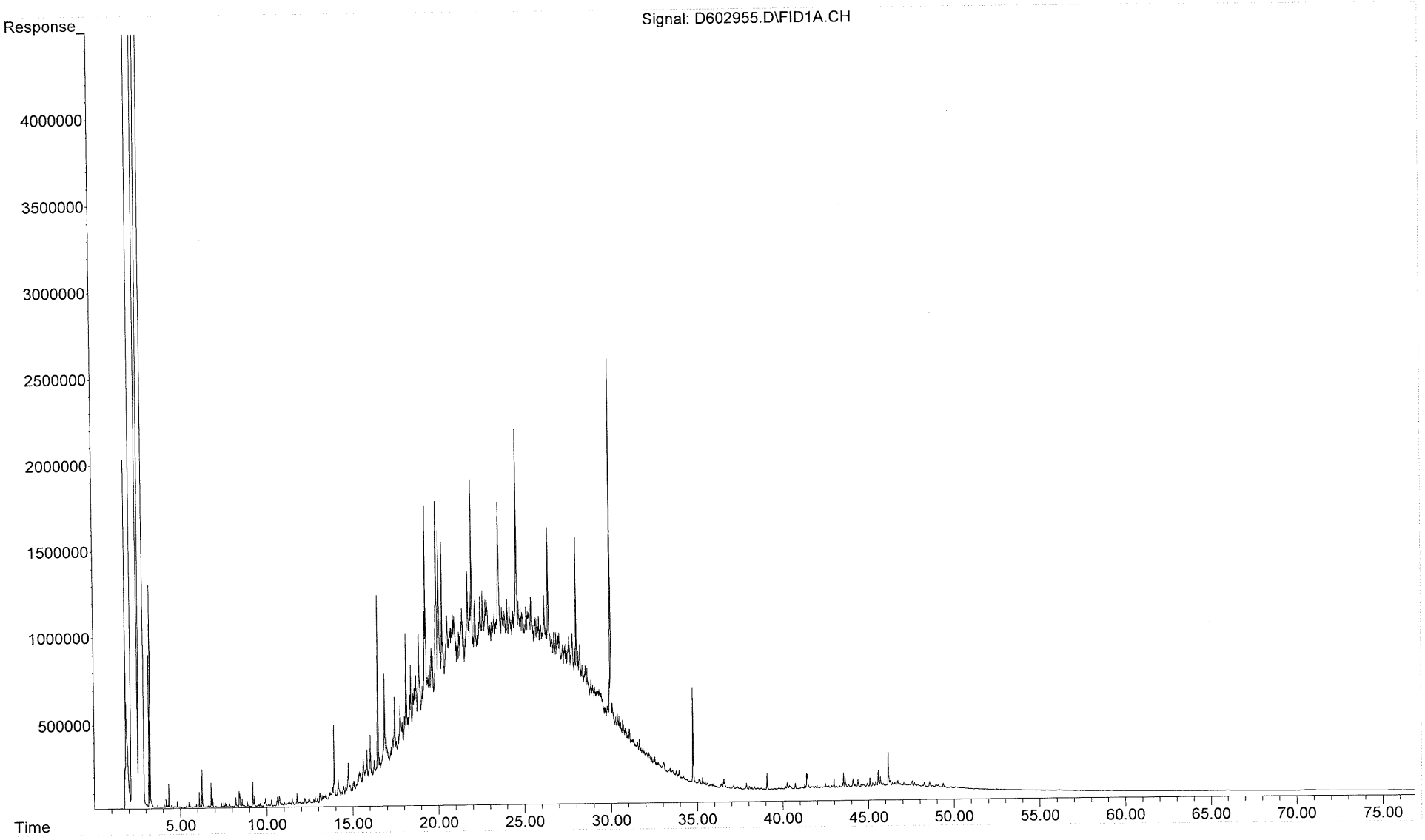
Operator : NLJr
Acquired : 27 Sep 2013 8:38 pm using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-07
Misc Info : 1X
Vial Number: 20

SB03-06 (0.0-1.0)
1309010-07



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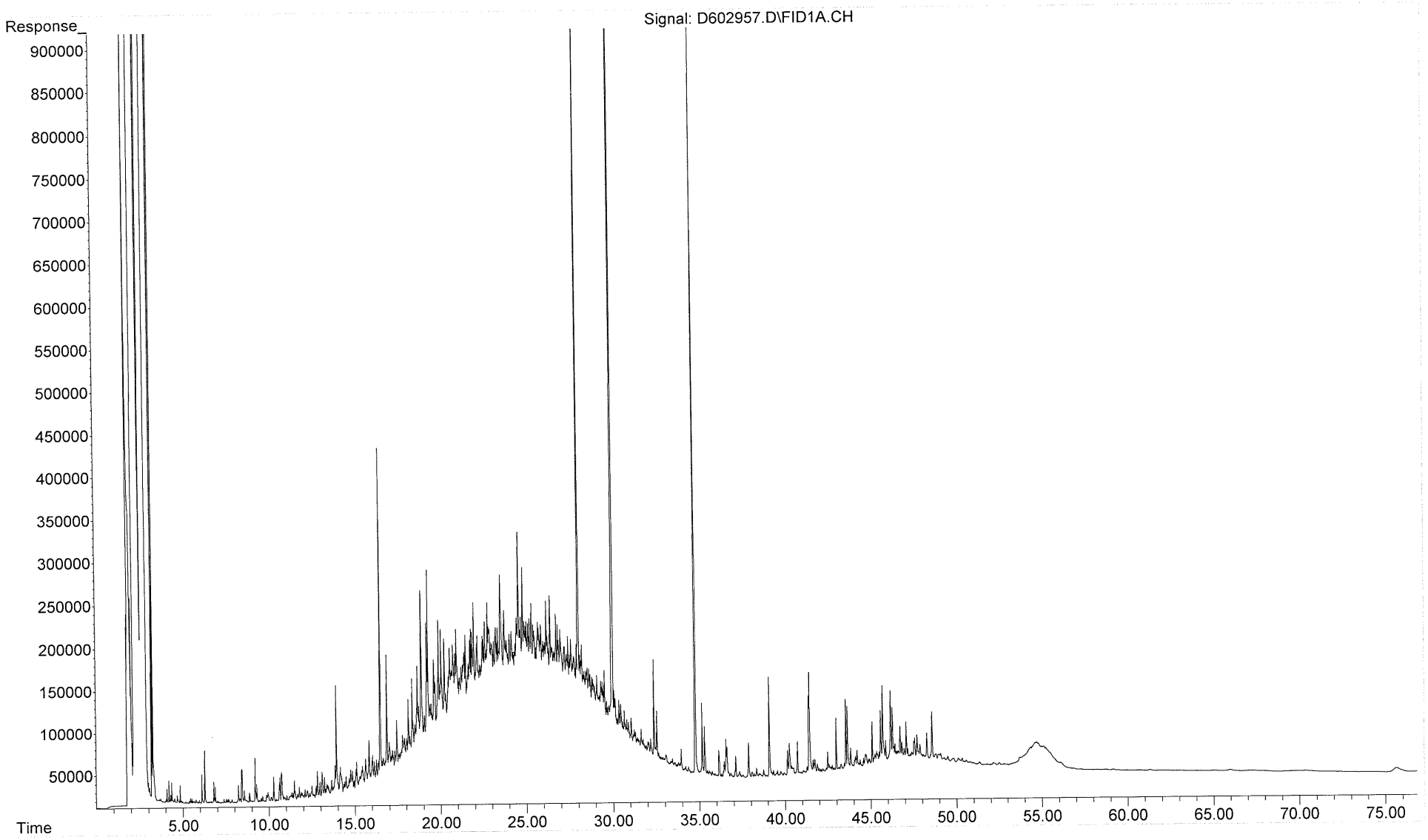
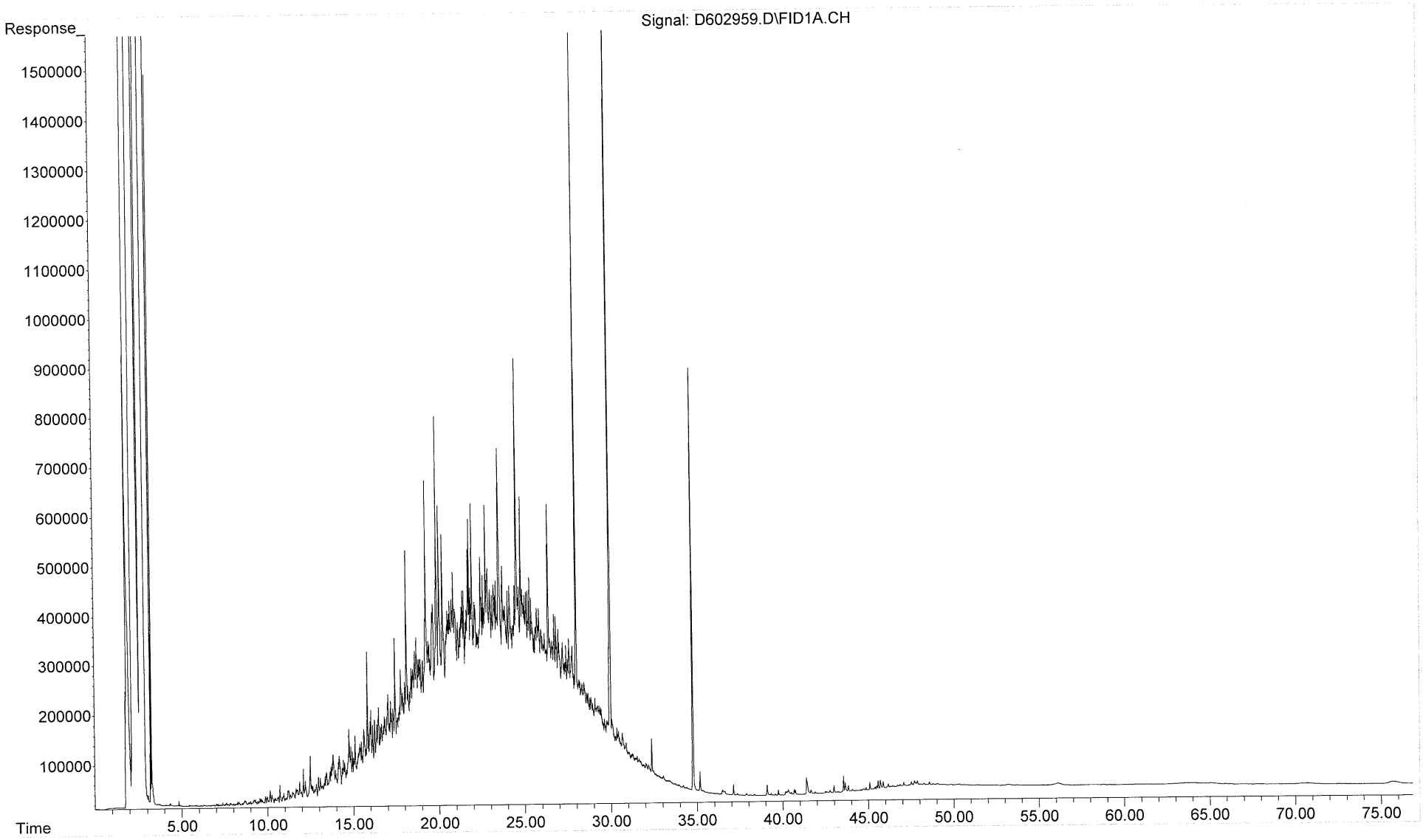
Operator : NLJr
Acquired : 28 Sep 2013 7:37 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-08
Misc Info : 1X
Vial Number: 21

SB03-07 (4.5-5.5)
1309010-08



File :Y:\2013 AWHL Data\Arcadis-CSX\1309010\D602959.D
Operator : NLJr
Acquired : 28 Sep 2013 9:05 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-09
Misc Info : 1X
Vial Number: 22

SB03-08 (3.0-4.0)
1309010-09



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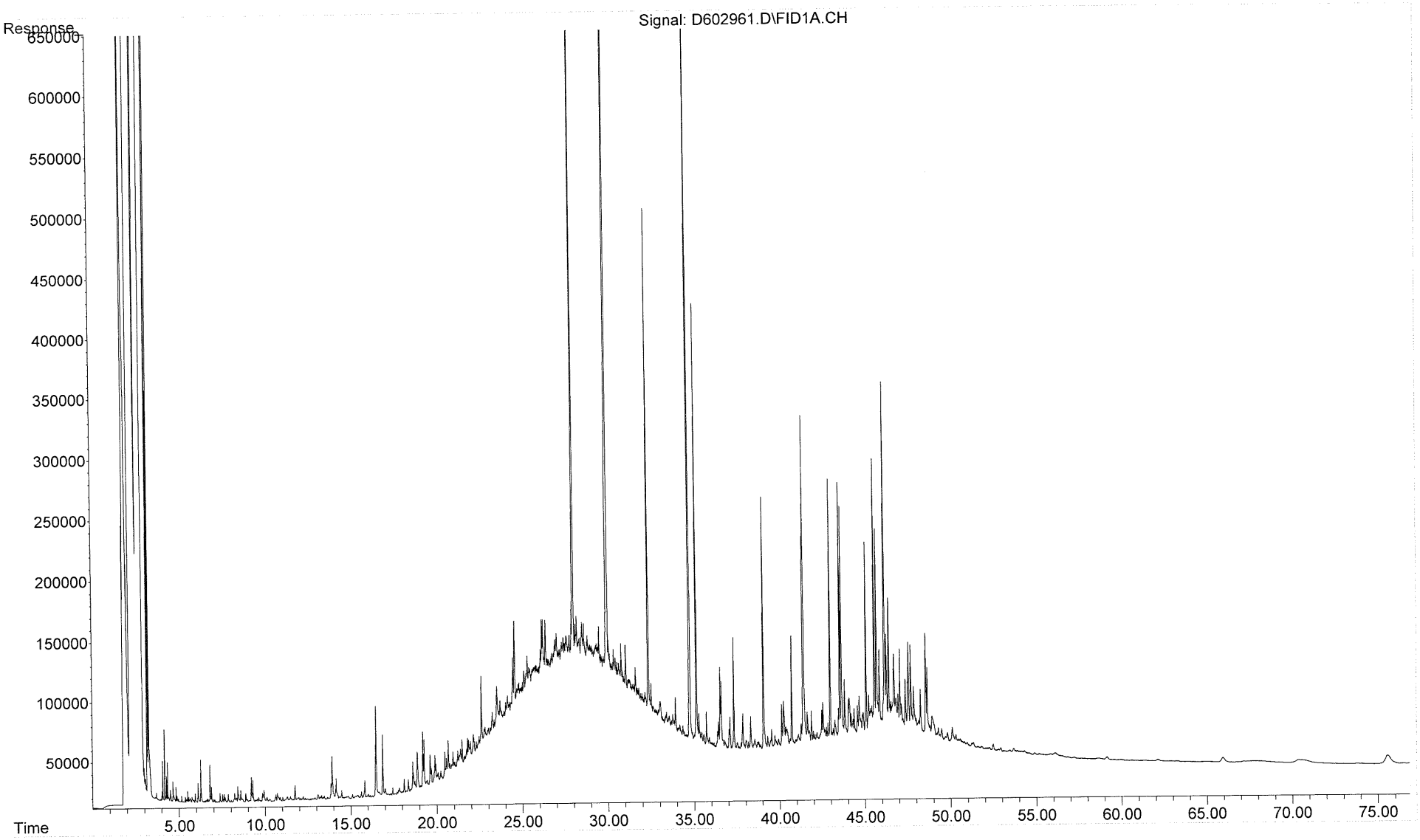
Operator : NLJr
Acquired : 28 Sep 2013 10:33 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: 1309010-10
Misc Info : 1X
Vial Number: 23

SB03-10 (0.5-1.5)
1309010-10



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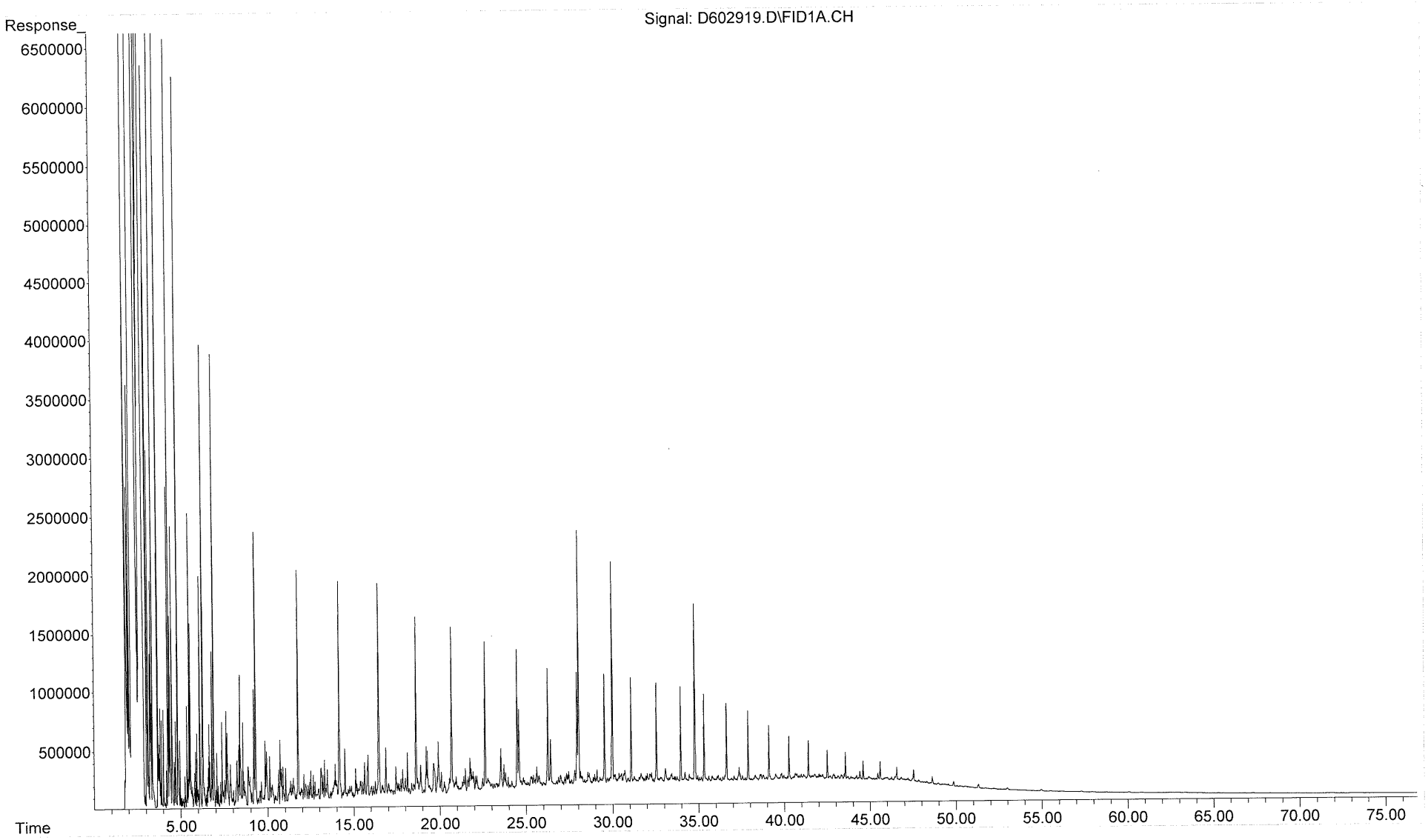
Operator : NLJr
Acquired : 26 Sep 2013 5:58 pm using AcqMethod FID6A.M
Instrument : FID6
Sample Name: ANS
Misc Info : 1X WHAS60 10.1mg/mL
Vial Number: 2

North Slope Crude
Reference Standard



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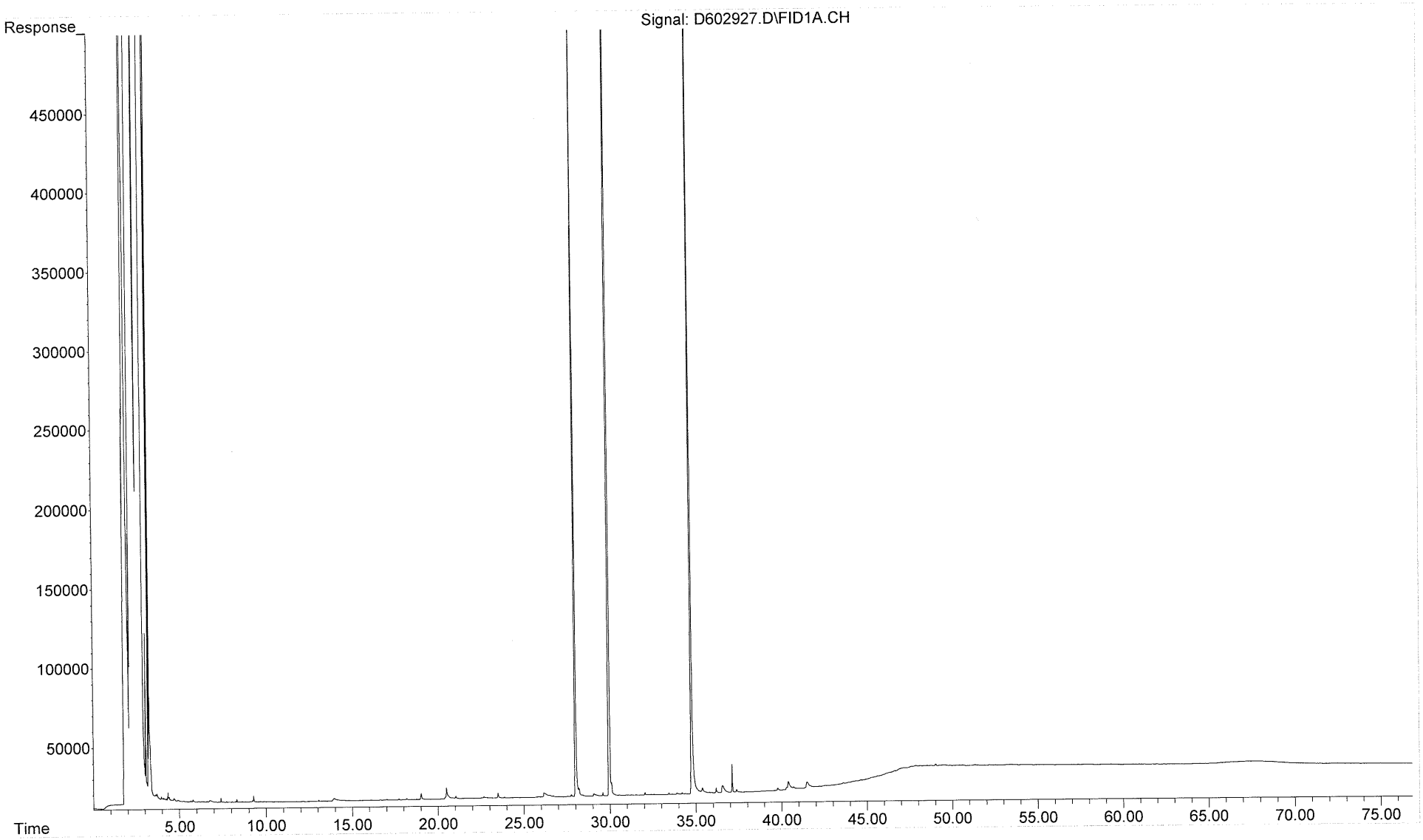
Operator : NLJr
Acquired : 26 Sep 2013 11:55 pm using AcqMethod FID6A.M
Instrument : FID6
Sample Name: SS091813B03
Misc Info : 1X ETR 1309010
Vial Number: 6

Method Blank
SS091813B03



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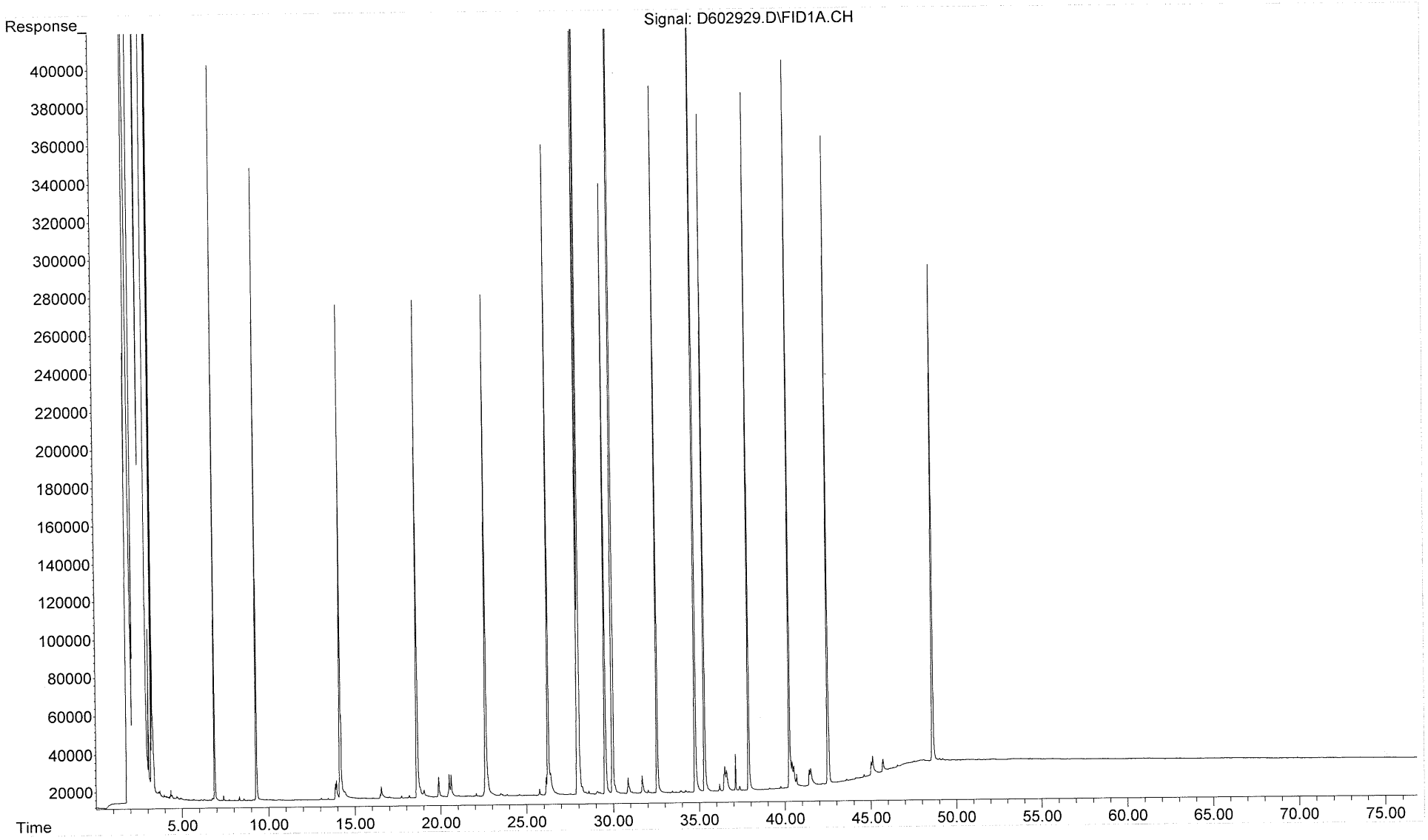
Operator : NLJr
Acquired : 27 Sep 2013 1:25 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: SS091813LCS03
Misc Info : 1X ETR 1309010
Vial Number: 7

Lab Control Sample
SS091813LCS03



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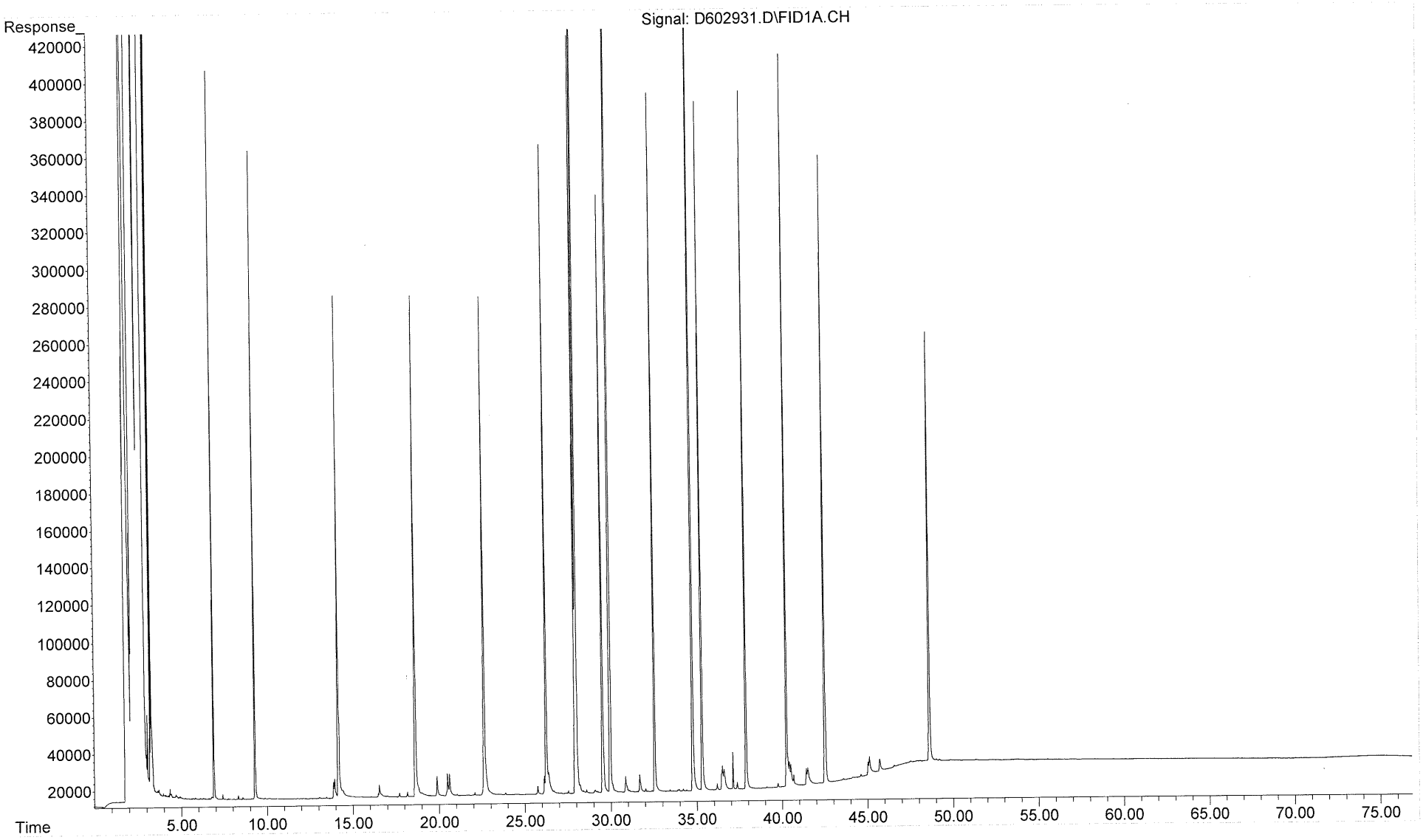
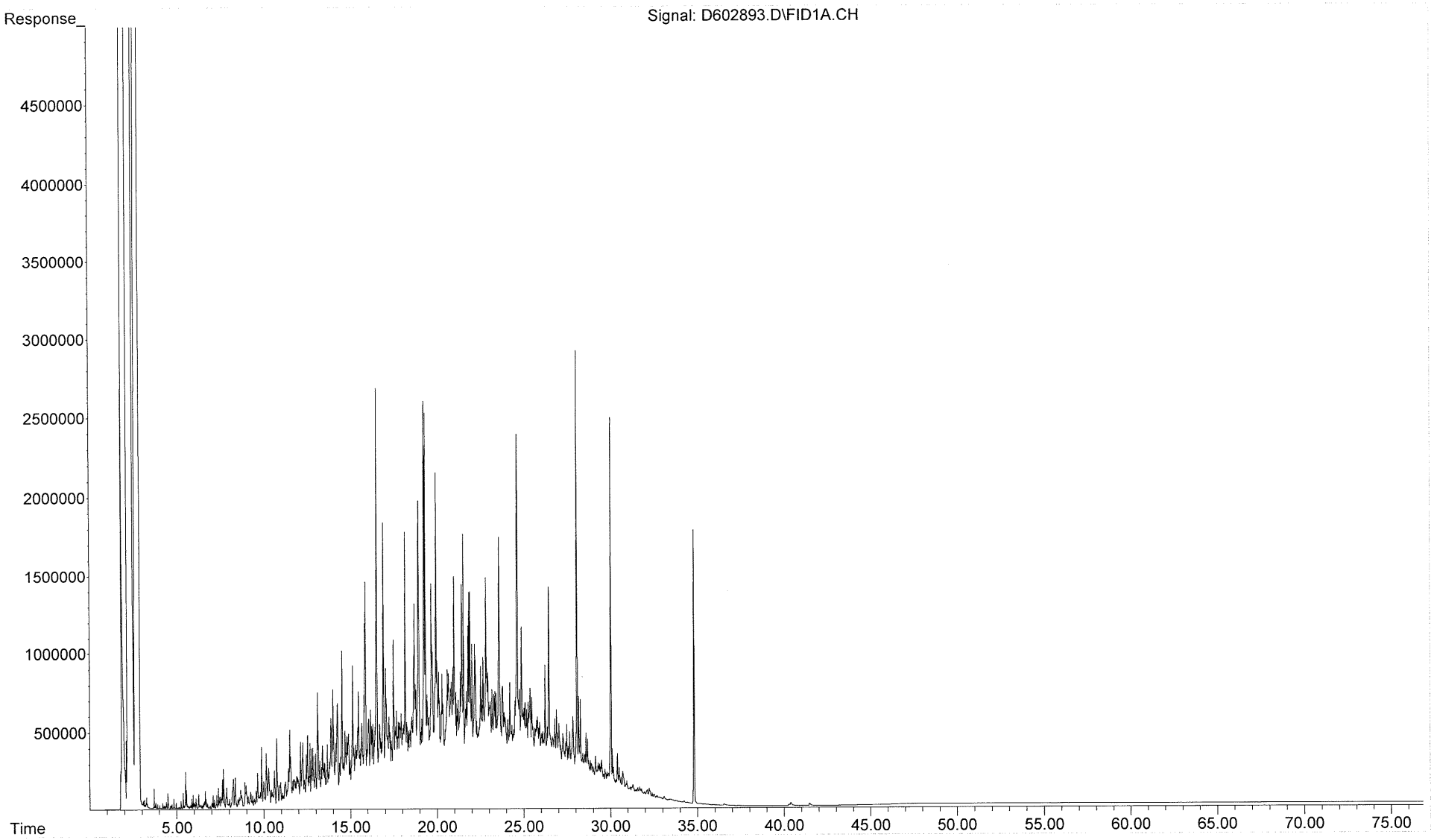
Operator : NLJr
Acquired : 27 Sep 2013 2:54 am using AcqMethod FID6A.M
Instrument : FID6
Sample Name: SS091813LCSD03
Misc Info : 1X ETR 1309010
Vial Number: 8

Lab Control Sample Duplicate
SS091813LCSD03



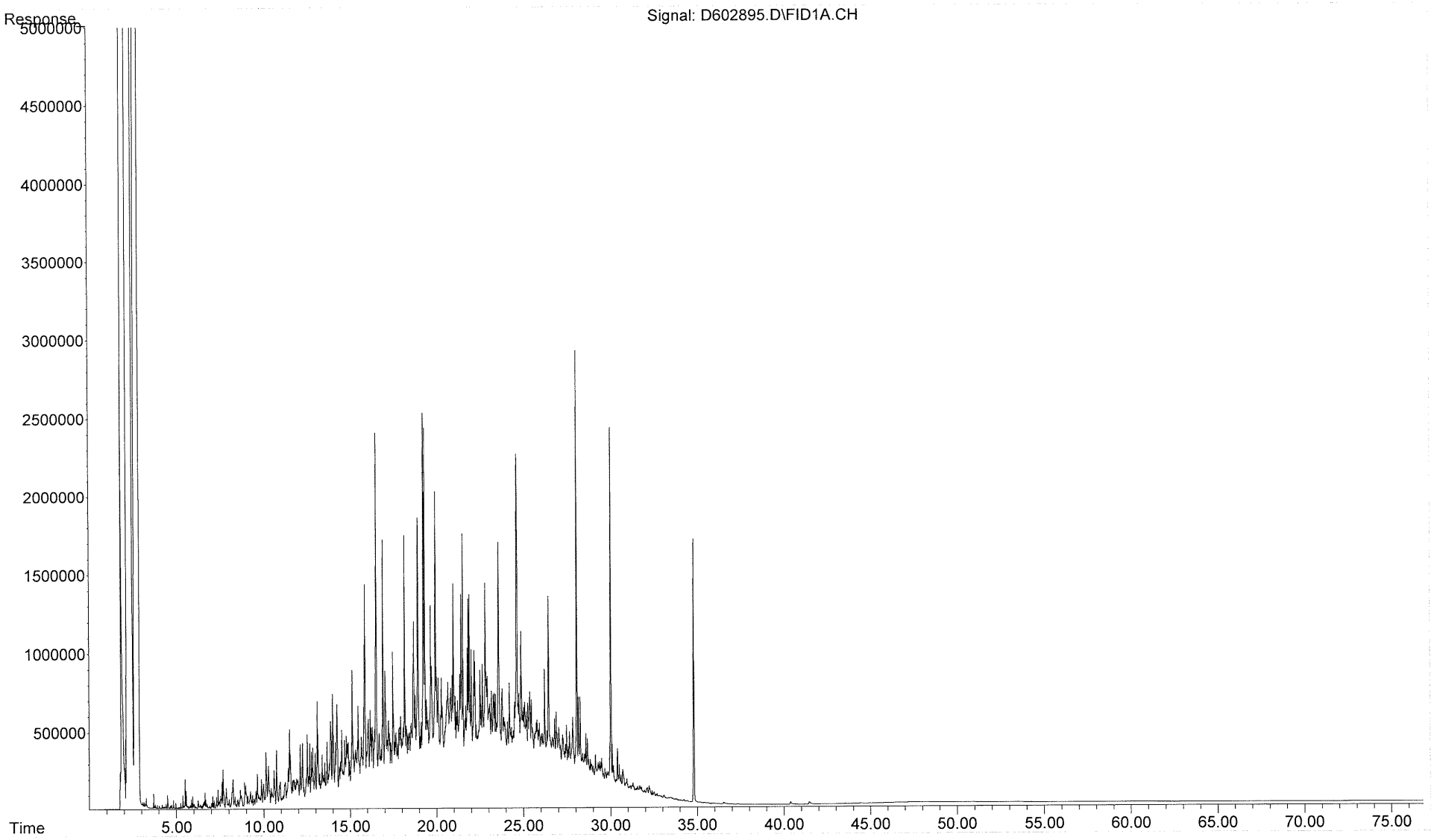
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602893.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 1:46 pm using AcqMethod FID6A.M
Sample Name: L1318627-01,42
Misc Info : WG640394,WG638546

MW-56 (091213)
L1318627-01



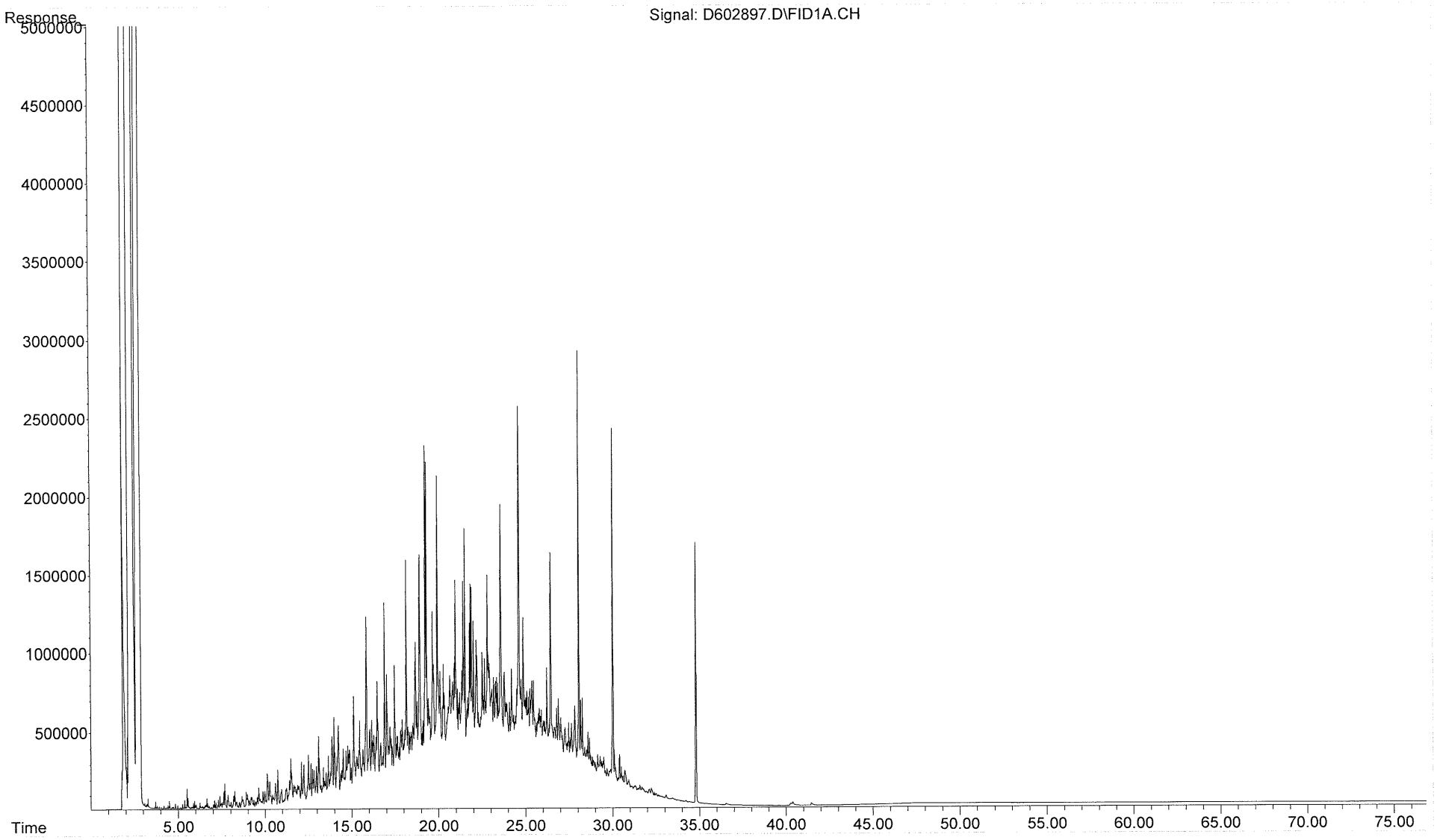
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602895.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 3:15 pm using AcqMethod FID6A.M
Sample Name: L1318627-02,42
Misc Info : WG640394,WG638546

MW-55 (091213)
L1318627-02



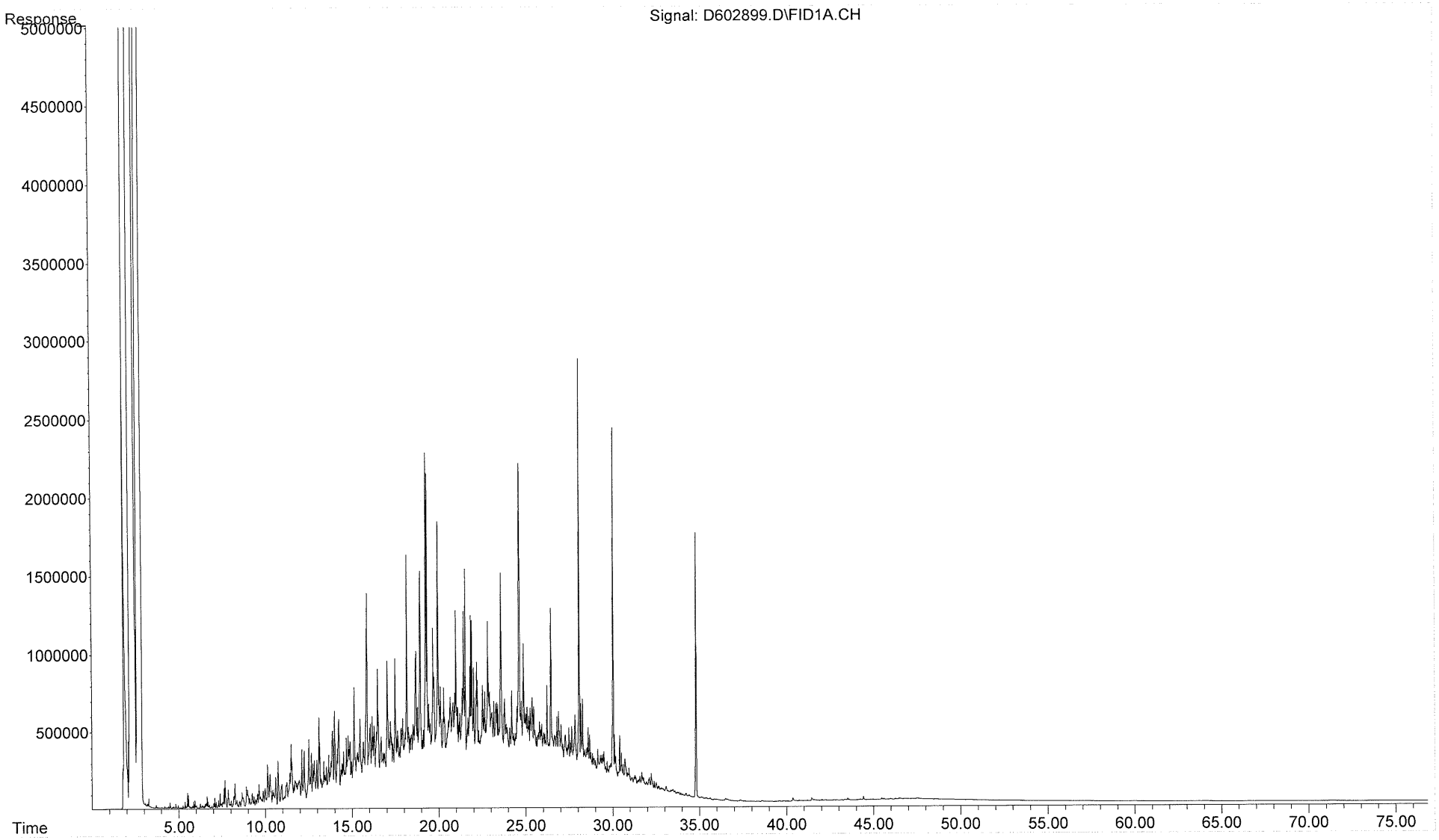
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602897.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 4:45 pm using AcqMethod FID6A.M
Sample Name: L1318627-03,42
Misc Info : WG640394,WG638546

MW-37 (091213)
L1318627-03



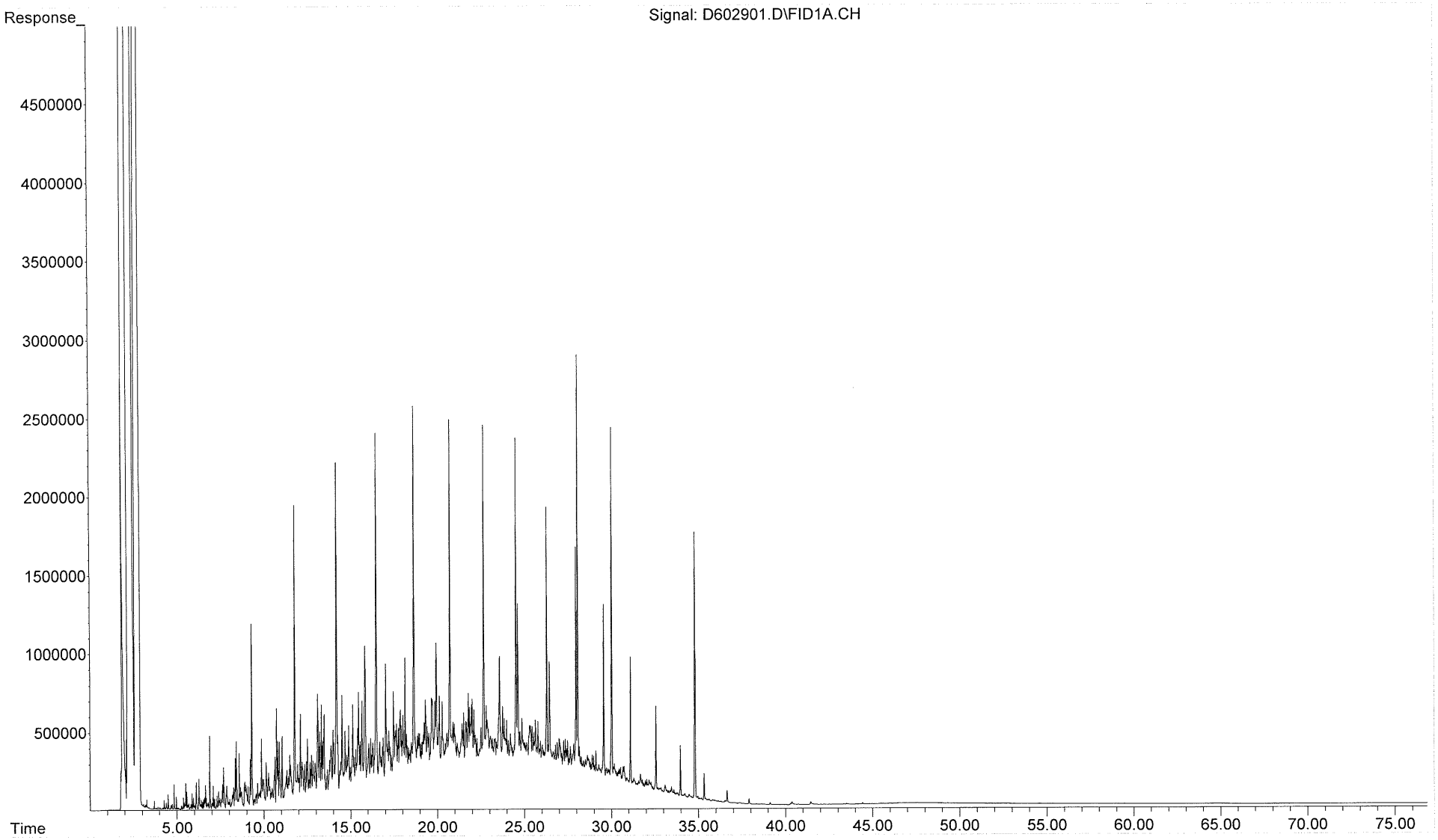
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602899.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 6:14 pm using AcqMethod FID6A.M
Sample Name: L1318627-04,42
Misc Info : WG640394,WG638546

MW-49 (091213)
L1318627-04



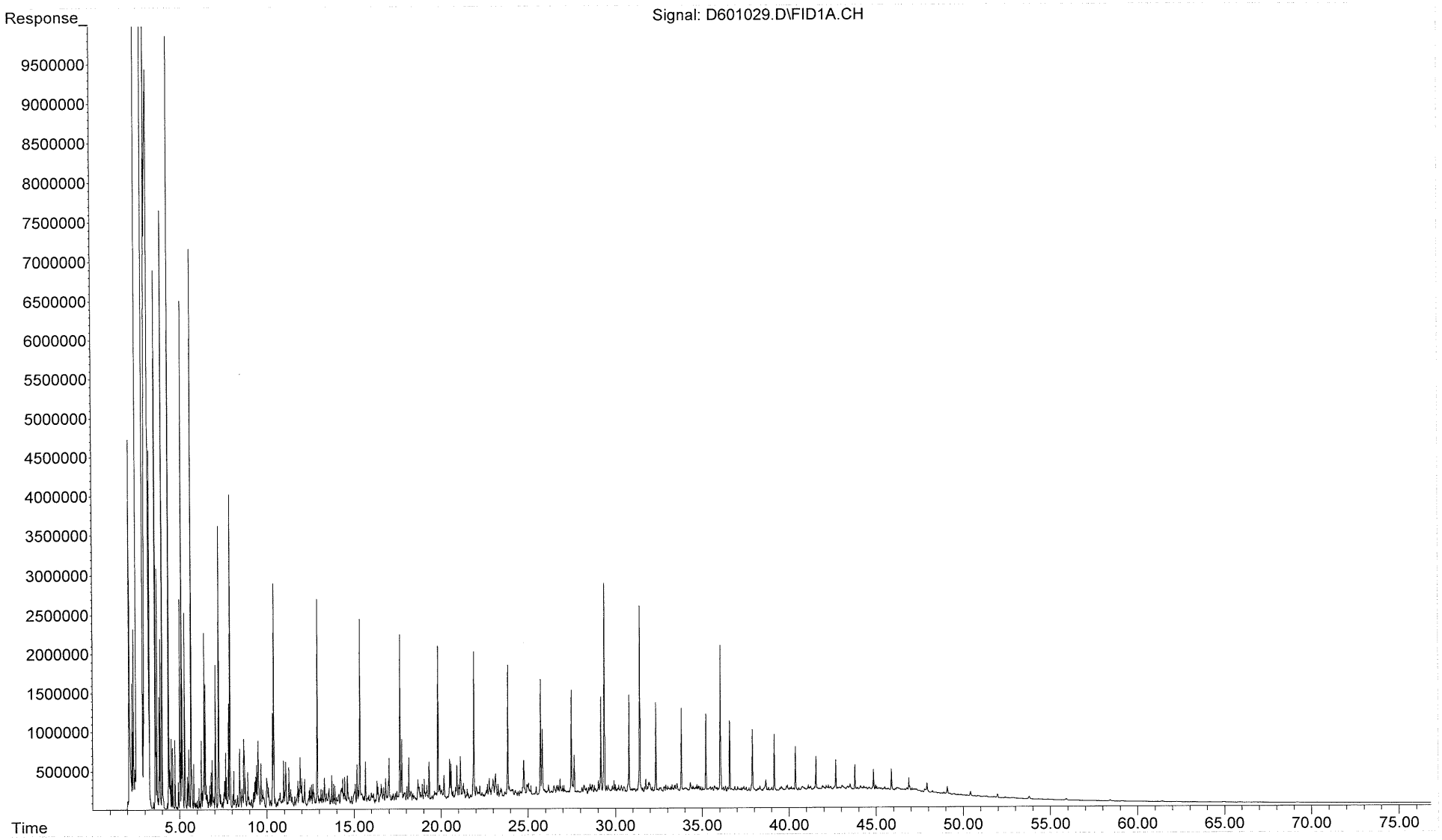
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602901.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 7:43 pm using AcqMethod FID6A.M
Sample Name: L1318627-05,42
Misc Info : WG640394,WG638546

MW-70 (091213)
L1318627-05



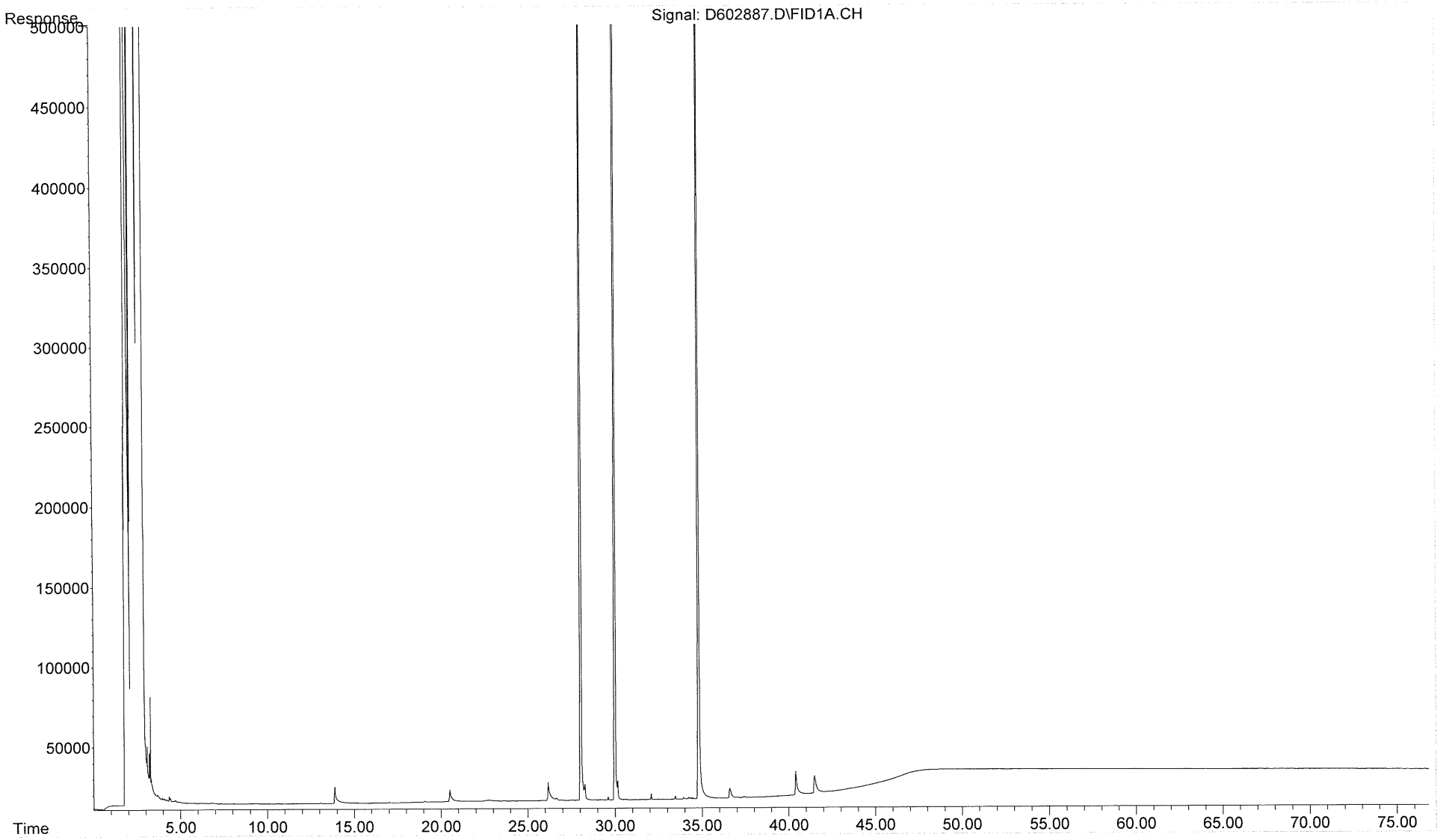
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\HC6043013F Data Files\D601029.D
Operator : DMP
Instrument : FID6
Acquired : 01 May 2013 9:29 am using AcqMethod FID6A.M
Sample Name: TO050913ANC01
Misc Info : 1X WHAR22

North Slope Crude
Reference Standard



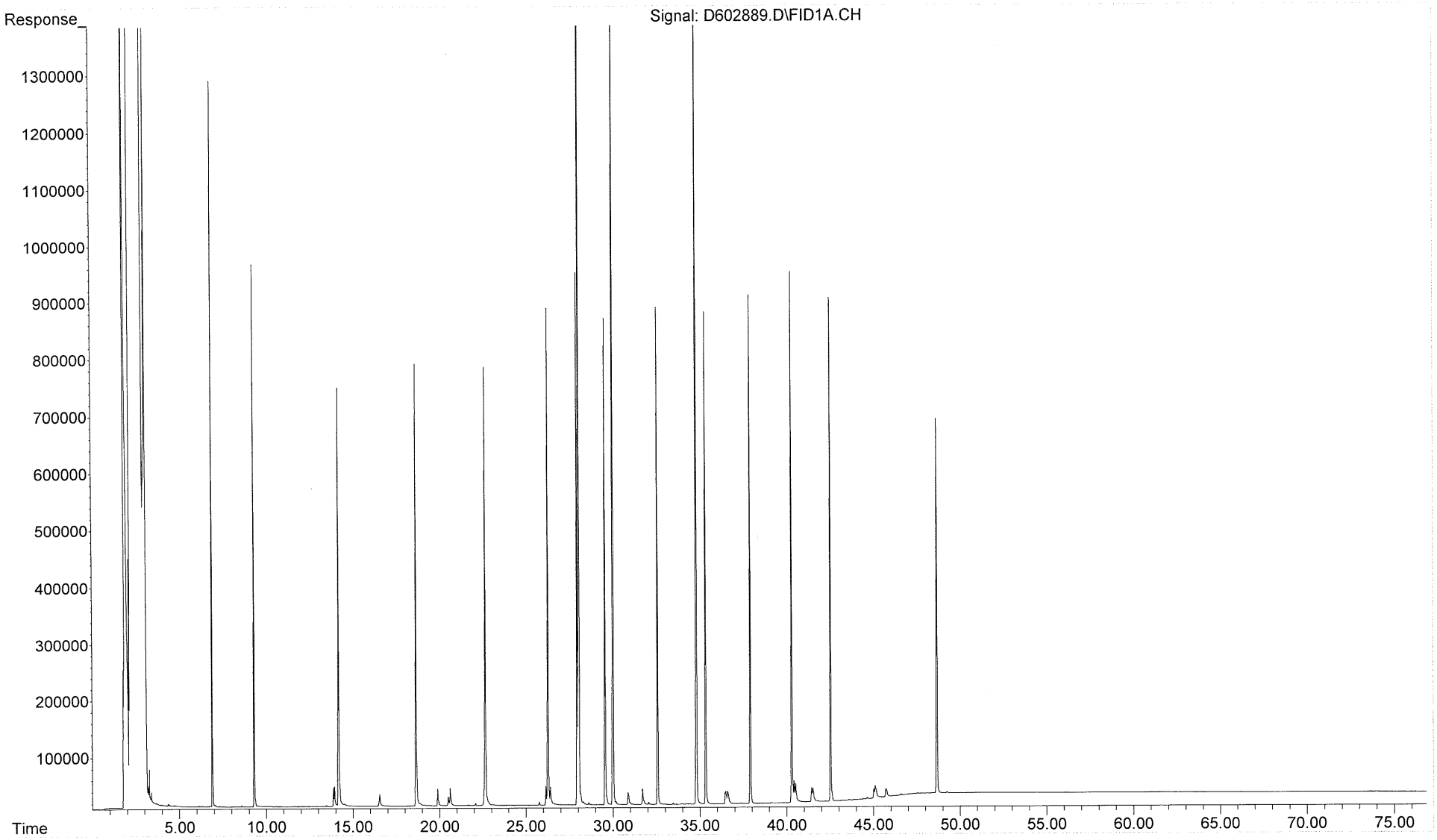
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602887.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 9:18 am using AcqMethod FID6A.M
Sample Name: WG638546-1,42
Misc Info : WG640394,WG638546

Method Blank
WG638546-1



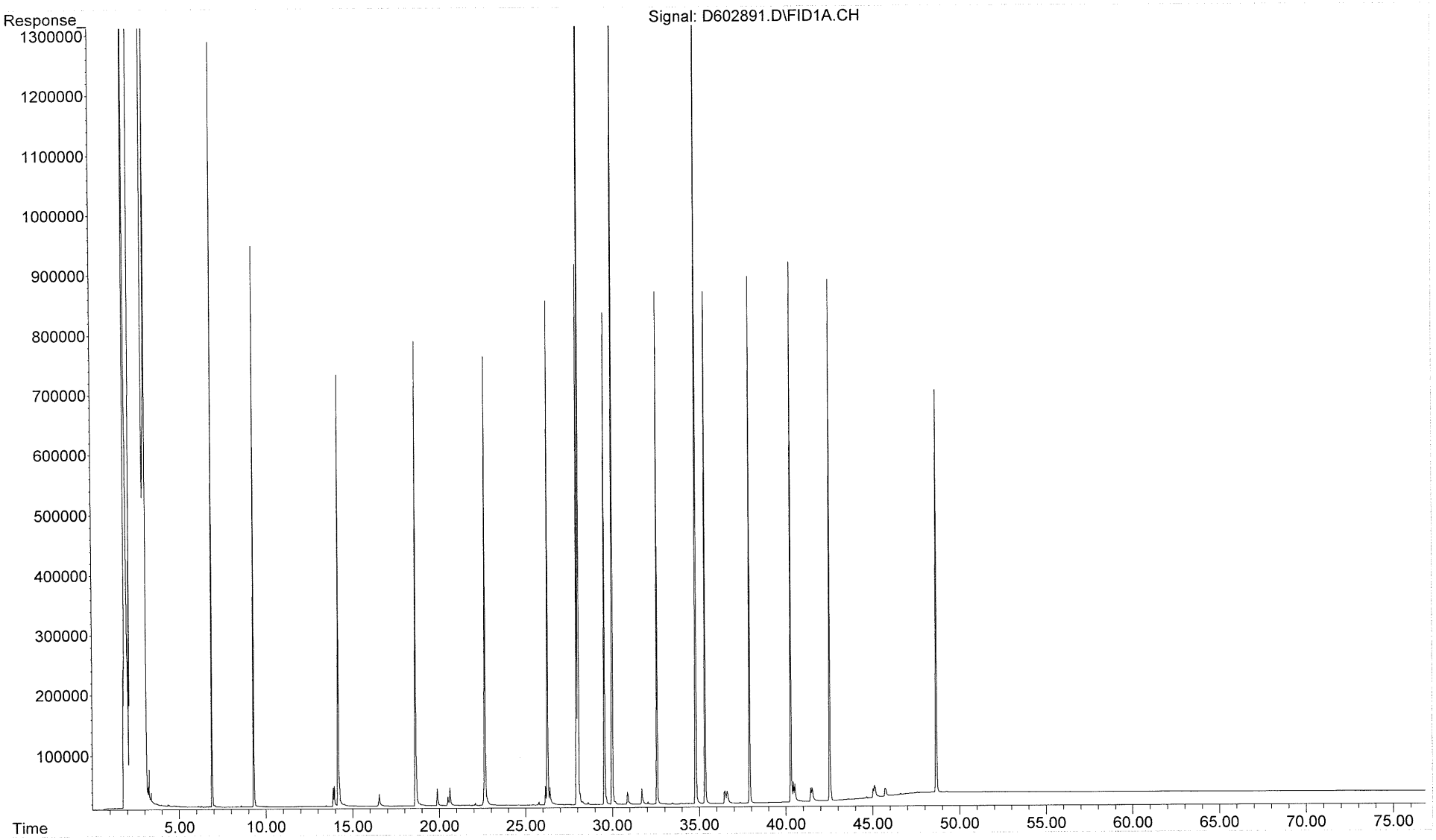
File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602889.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 10:47 am using AcqMethod FID6A.M
Sample Name: WG638546-2,42
Misc Info : WG640394,WG638546

Lab Control Sample
WG638546-2



File :Y:\2013 AWHL Data\CSXT-Arcadis Brunswick Rail Yard\L1318627\
... FID\D602891.D
Operator : FID6:NL
Instrument : FID6
Acquired : 25 Sep 2013 12:16 pm using AcqMethod FID6A.M
Sample Name: WG638546-3,42
Misc Info : WG640394,WG638546

Lab Control Sample Duplicate
WG638546-3



Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Method Blank
Lab ID	SS091813B03
Matrix	Soil
Reference Method	SHC
Batch ID	SS091813B03
Date Collected	N/A
Date Received	N/A
Date Prepped	09/18/2013
Date Analyzed	10/11/2013
Sample Size (wet)	22
% Solid	100.00
File ID	D603233.D
Units	mg/Kg
Final Volume	2
Dilution	1
Reporting Limit	0.0909

Class	Abbrev	Analytes	Result		SSRL
SHC	C9	n-Nonane (C9)	0.00100	J	0.0909
SHC	C10	n-Decane (C10)	0.00782	J	0.0909
SHC	C11	n-Undecane (C11)		U	0.0909
SHC	C12	n-Dodecane (C12)		U	0.0909
SHC	C13	n-Tridecane (C13)		U	0.0909
SHC	1380	2,6,10 Trimethyldodecane (1380)		U	0.0909
SHC	C14	n-Tetradecane (C14)		U	0.0909
SHC	1470	2,6,10 Trimethyltridecane (1470)		U	0.0909
SHC	C15	n-Pentadecane (C15)		U	0.0909
SHC	C16	n-Hexadecane (C16)		U	0.0909
SHC	1650	Norpristane (1650)		U	0.0909
SHC	C17	n-Heptadecane (C17)		U	0.0909
SHC	Pr	Pristane		U	0.0909
SHC	C18	n-Octadecane (C18)		U	0.0909
SHC	Ph	Phytane		U	0.0909
SHC	C19	n-Nonadecane (C19)		U	0.0909
SHC	C20	n-Eicosane (C20)	0.00445	J	0.0909
SHC	C21	n-Heneicosane (C21)	0.000727	J	0.0909
SHC	C22	n-Docosane (C22)	0.000636	J	0.0909
SHC	C23	n-Tricosane (C23)	0.00145	J	0.0909
SHC	C24	n-Tetracosane (C24)	0.000818	J	0.0909
SHC	C25	n-Pentacosane (C25)	0.00327	J	0.0909
SHC	C26	n-Hexacosane (C26)	0.00127	J	0.0909
SHC	C27	n-Heptacosane (C27)	0.00227	J	0.0909
SHC	C28	n-Octacosane (C28)	0.00336	J	0.0909
SHC	C29	n-Nonacosane (C29)	0.0509	CJ	0.0909
SHC	C30	n-Triacontane (C30)	0.00218	J	0.0909
SHC	C31	n-Hentriacontane (C31)	0.00200	J	0.0909
SHC	C32	n-Dotriacontane (C32)	0.00218	J	0.0909
SHC	C33	n-Tritriacontane (C33)	0.00145	J	0.0909
SHC	C34	n-Tetratriacontane (C34)	0.00118	J	0.0909
SHC	C35	n-Pentatriacontane (C35)	0.00100	J	0.0909
SHC	C36	n-Hexatriacontane (C36)	0.00127	J	0.0909
SHC	C37	n-Heptatriacontane (C37)		U	0.0909
SHC	C38	n-Octatriacontane (C38)		U	0.0909
SHC	C39	n-Nonatriacontane (C39)		U	0.0909
SHC	C40	n-Tetracontane (C40)		U	0.0909
SHC	TSH	Total Saturated Hydrocarbons	0.0893	J	0.0909
SHC	TPH	Total Petroleum Hydrocarbons (C9-C44)		U	3.00

Surrogates (% Recovery)	
ortho-Terphenyl	98
d50-Tetracosane	104

NewFields
Perspective. Vision. Solutions.

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Laboratory Control Sample
Lab ID	SS091813LCS02
Matrix	Soil
Reference Method	SHC
Batch ID	SS091813B03
Date Collected	N/A
Date Received	N/A
Date Prepped	09/18/2013
Date Analyzed	10/11/2013
Sample Size (wet)	22
% Solid	100.00
File ID	D603235.D
Units	mg/Kg
Final Volume	2
Dilution	1
Reporting Limit	0.0909

Class	Abbrev	Analytes	Result		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit
SHC	C9	n-Nonane (C9)	0.589	S	0.0909	65	0.909	50	130
SHC	C10	n-Decane (C10)	0.714	S	0.0909	79	0.909	50	130
SHC	C12	n-Dodecane (C12)	0.792	S	0.0909	87	0.909	50	130
SHC	C14	n-Tetradecane (C14)	0.784	S	0.0909	86	0.909	50	130
SHC	C16	n-Hexadecane (C16)	0.849	S	0.0909	93	0.909	50	130
SHC	C18	n-Octadecane (C18)	0.901	S	0.0909	99	0.909	50	130
SHC	C19	n-Nonadecane (C19)	0.911	S	0.0909	100	0.909	50	130
SHC	C20	n-Eicosane (C20)	0.893	S	0.0909	98	0.909	50	130
SHC	C22	n-Docosane (C22)	0.884	S	0.0909	97	0.909	50	130
SHC	C24	n-Tetracosane (C24)	0.893	S	0.0909	98	0.909	50	130
SHC	C26	n-Hexacosane (C26)	0.887	S	0.0909	98	0.909	50	130
SHC	C28	n-Octacosane (C28)	0.935	S	0.0909	103	0.909	50	130
SHC	C30	n-Triacontane (C30)	0.898	S	0.0909	99	0.909	50	130
SHC	C36	n-Hexatriacontane (C36)	0.838	S	0.0909	92	0.909	50	130

Surrogates (% Recovery)	
ortho-Terphenyl	93
d50-Tetracosane	101

NewFields
Perspective. Vision. Solutions.

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Laboratory Control Sample Dup
Lab ID	SS091813LCSD03
Matrix	Soil
Reference Method	SHC
Batch ID	SS091813B03
Date Collected	N/A
Date Received	N/A
Date Prepped	09/18/2013
Date Analyzed	10/11/2013
Sample Size (wet)	22
% Solid	100.00
File ID	D603237.D
Units	mg/Kg
Final Volume	2
Dilution	1
Reporting Limit	0.0909

Class	Abbrev	Analytes	Result		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit	RPD	RPD Limit
SHC	C9	n-Nonane (C9)	0.601	S	0.0909	66	0.909	50	130	2	30
SHC	C10	n-Decane (C10)	0.714	S	0.0909	79	0.909	50	130	0	30
SHC	C12	n-Dodecane (C12)	0.790	S	0.0909	87	0.909	50	130	0	30
SHC	C14	n-Tetradecane (C14)	0.777	S	0.0909	85	0.909	50	130	1	30
SHC	C16	n-Hexadecane (C16)	0.843	S	0.0909	93	0.909	50	130	1	30
SHC	C18	n-Octadecane (C18)	0.892	S	0.0909	98	0.909	50	130	1	30
SHC	C19	n-Nonadecane (C19)	0.902	S	0.0909	99	0.909	50	130	1	30
SHC	C20	n-Eicosane (C20)	0.884	S	0.0909	97	0.909	50	130	1	30
SHC	C22	n-Docosane (C22)	0.875	S	0.0909	96	0.909	50	130	1	30
SHC	C24	n-Tetracosane (C24)	0.884	S	0.0909	97	0.909	50	130	1	30
SHC	C26	n-Hexacosane (C26)	0.877	S	0.0909	96	0.909	50	130	1	30
SHC	C28	n-Octacosane (C28)	0.924	S	0.0909	102	0.909	50	130	1	30
SHC	C30	n-Triacontane (C30)	0.889	S	0.0909	98	0.909	50	130	1	30
SHC	C36	n-Hexatriacontane (C36)	0.828	S	0.0909	91	0.909	50	130	1	30

Surrogates (% Recovery)	
ortho-Terphenyl	91
d50-Tetracosane	99

NewFields
Perspective. Vision. Solutions.

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	SB01-07 (0.5-1.5)			SB01-07 (0.5-1.5)					
Lab ID	1309010-04			1309010-04D					
Matrix	Soil			Soil					
Reference Method	SHC			SHC					
Batch ID	SS091813B03			SS091813B03					
Date Collected	08/20/2013			08/20/2013					
Date Received	08/24/2013			08/24/2013					
Date Prepped	09/18/2013			09/18/2013					
Date Analyzed	10/12/2013			10/12/2013					
Sample Size (wet)	29.9			29.96					
% Solid	82.00			82.00					
File ID	D603247.D			D603249.D					
Units	mg/Kg			mg/Kg					
Final Volume	2			2					
Dilution	1			1					
Reporting Limit	0.0816			0.0814					

Class	Abbrev	Analytes	Result		SSRL	Result		SSRL	RPD	RPD Limit	
SHC	C9	n-Nonane (C9)	0.0332	J	0.0816	0.0304	J	0.0814	9	30	
SHC	C10	n-Decane (C10)	0.0465	JB	0.0816	0.0490	JB	0.0814	5	30	
SHC	C11	n-Undecane (C11)	0.0458	J	0.0816	0.0492	J	0.0814	7	30	
SHC	C12	n-Dodecane (C12)	0.0610	J	0.0816	0.0664	J	0.0814	8	30	
SHC	C13	n-Tridecane (C13)	0.241		0.0816	0.255		0.0814	6	30	
SHC	1380	2,6,10 Trimethyldodecane (1380)	0.0282	J	0.0816	0.0409	J	0.0814	37	30	¤
SHC	C14	n-Tetradecane (C14)	0.0643	J	0.0816	0.0755	J	0.0814	16	30	
SHC	1470	2,6,10 Trimethyltridecane (1470)	0.0502	J	0.0816	0.0754	J	0.0814	40	30	¤
SHC	C15	n-Pentadecane (C15)	0.0711	J	0.0816	0.0822		0.0814	14	30	
SHC	C16	n-Hexadecane (C16)	0.156		0.0816	0.166		0.0814	6	30	
SHC	1650	Norpristane (1650)	0.0690	J	0.0816	0.105		0.0814	42	30	¤
SHC	C17	n-Heptadecane (C17)	0.112		0.0816	0.122		0.0814	9	30	
SHC	Pr	Pristane	0.137		0.0816	0.179		0.0814	26	30	
SHC	C18	n-Octadecane (C18)	0.0738	J	0.0816	0.0680	J	0.0814	8	30	
SHC	Ph	Phytane	0.0377	J	0.0816	0.0580	J	0.0814	43	30	¤
SHC	C19	n-Nonadecane (C19)	0.0718	J	0.0816	0.0719	J	0.0814	0	30	
SHC	C20	n-Eicosane (C20)	0.0714	J	0.0816	0.0751	J	0.0814	5	30	
SHC	C21	n-Heneicosane (C21)	0.0910		0.0816	0.101		0.0814	10	30	
SHC	C22	n-Docosane (C22)	0.0620	J	0.0816	0.0652	J	0.0814	5	30	
SHC	C23	n-Tricosane (C23)	0.0802	J	0.0816	0.0796	J	0.0814	1	30	
SHC	C24	n-Tetracosane (C24)	0.0638	J	0.0816	0.0633	J	0.0814	1	30	
SHC	C25	n-Pentacosane (C25)	0.130		0.0816	0.137		0.0814	6	30	
SHC	C26	n-Hexacosane (C26)	0.120		0.0816	0.131		0.0814	9	30	
SHC	C27	n-Heptacosane (C27)	0.552		0.0816	0.601		0.0814	9	30	
SHC	C28	n-Octacosane (C28)	0.153		0.0816	0.175		0.0814	14	30	
SHC	C29	n-Nonacosane (C29)	0.378	CB	0.0816	0.436	CB	0.0814	14	30	
SHC	C30	n-Triacontane (C30)	0.0613	J	0.0816	0.0654	J	0.0814	6	30	
SHC	C31	n-Hentriacontane (C31)	0.381		0.0816	0.416		0.0814	9	30	
SHC	C32	n-Dotriacontane (C32)	0.0536	J	0.0816	0.0692	J	0.0814	25	30	
SHC	C33	n-Tritriacontane (C33)	0.465		0.0816	0.644		0.0814	32	30	¤
SHC	C34	n-Tetratriacontane (C34)	0.0309	J	0.0816	0.0310	J	0.0814	0	30	
SHC	C35	n-Pentatriacontane (C35)	0.211		0.0816	0.263		0.0814	22	30	
SHC	C36	n-Hexatriacontane (C36)		U	0.0816		U	0.0814		30	N/A
SHC	C37	n-Heptatriacontane (C37)	0.0253	J	0.0816	0.0339	J	0.0814	29	30	
SHC	C38	n-Octatriacontane (C38)		U	0.0816		U	0.0814		30	N/A
SHC	C39	n-Nonatriacontane (C39)		U	0.0816		U	0.0814		30	N/A
SHC	C40	n-Tetracontane (C40)		U	0.0816		U	0.0814		30	N/A
SHC	TSH	Total Saturated Hydrocarbons	4.23		0.0816	4.88		0.0814	14	30	
SHC	TPH	Total Petroleum Hydrocarbons (C9-C44)	78.4		2.69	92.8		2.69	17	30	

Surrogates (% Recovery)			
ortho-Terphenyl	88	88	
d50-Tetracosane	97	98	

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Alaska North Slope Crude
Lab ID	TO050913ANC01
Matrix	Oil
Reference Method	SHC
Batch ID	N/A
Date Collected	N/A
Date Received	N/A
Date Prepped	N/A
Date Analyzed	05/01/2013
Sample Size (wet)	0.10102
% Solid	100.00
File ID	D601029.D
Units	mg/Kg
Final Volume	10
Dilution	1
Reporting Limit	99.0

Class	Abbrev	Analytes	Result	SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit
SHC	C9	n-Nonane (C9)	6340	99.0	101	6286.00	65	135
SHC	C10	n-Decane (C10)	4890	99.0	97	5047.00	65	135
SHC	C11	n-Undecane (C11)	4490	99.0	95	4703.00	65	135
SHC	C12	n-Dodecane (C12)	4140	99.0	100	4155.00	65	135
SHC	C13	n-Tridecane (C13)	3820	99.0	94	4058.00	65	135
SHC	1380	2,6,10 Trimethyldodecane (1380)	863	99.0	102	845.00	65	135
SHC	C14	n-Tetradecane (C14)	3360	99.0	91	3670.00	65	135
SHC	1470	2,6,10 Trimethyltridecane (1470)	1230	99.0	90	1367.00	65	135
SHC	C15	n-Pentadecane (C15)	3970	99.0	108	3660.00	65	135
SHC	C16	n-Hexadecane (C16)	3050	99.0	92	3330.00	65	135
SHC	1650	Norpristane (1650)	887	99.0	81	1093.00	65	135
SHC	C17	n-Heptadecane (C17)	2750	99.0	91	3012.00	65	135
SHC	Pr	Pristane	2090	99.0	97	2145.00	65	135
SHC	C18	n-Octadecane (C18)	2440	99.0	91	2700.00	65	135
SHC	Ph	Phytane	1150	99.0	95	1215.00	65	135
SHC	C19	n-Nonadecane (C19)	2350	99.0	102	2305.00	65	135
SHC	C20	n-Eicosane (C20)	2300	99.0	99	2337.00	65	135
SHC	C21	n-Heneicosane (C21)	2070	99.0	101	2044.00	65	135
SHC	C22	n-Docosane (C22)	1980	99.0	101	1972.00	65	135
SHC	C23	n-Tricosane (C23)	1710	99.0	98	1745.00	65	135
SHC	C24	n-Tetracosane (C24)	1600	99.0	97	1641.00	65	135
SHC	C25	n-Pentacosane (C25)	1590	99.0	102	1562.00	65	135
SHC	C26	n-Hexacosane (C26)	1370	99.0	100	1378.00	65	135
SHC	C27	n-Heptacosane (C27)	1070	99.0	99	1083.00	65	135
SHC	C28	n-Octacosane (C28)	731	99.0	94	776.00	65	135
SHC	C29	n-Nonacosane (C29)	761	99.0	104	734.00	65	135
SHC	C30	n-Triacontane (C30)	620	99.0	99	627.00	65	135
SHC	C31	n-Hentriacontane (C31)	514	99.0	100	514.00	65	135
SHC	C32	n-Dotriacontane (C32)	546	99.0	119	458.00	65	135
SHC	C33	n-Tritriacontane (C33)	334	99.0	86	388.00	65	135
SHC	C34	n-Tetratriacontane (C34)	272	99.0	78	347.00	65	135
SHC	C35	n-Pentatriacontane (C35)	259	99.0	93	278.00	65	135
SHC	C36	n-Hexatriacontane (C36)	152	99.0	82	186.00	65	135
SHC	C37	n-Heptatriacontane (C37)	158	99.0	104	152.00	65	135
SHC	C38	n-Octatriacontane (C38)	136	99.0	104	131.00	65	135
SHC	C39	n-Nonatriacontane (C39)	104	99.0	117	88.70	65	135
SHC	C40	n-Tetracontane (C40)	98.1 J	99.0	106	92.30	65	135
SHC	TSH	Total Saturated Hydrocarbons	66200	99.0	97	68122.00	65	135
SHC	TPH	Total Petroleum Hydrocarbons (C9-C44)	565000	3270	102	554993.00	65	135

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	SB01-04 (0.0-1.0)	SB01-04 (6.0-7.0)	SB01-05 (8.0-9.0)
Lab ID	1309010-01	1309010-02	1309010-03
Matrix	Soil	Soil	Soil
Reference Method	SHC	SHC	SHC
Batch ID	SS091813B03	SS091813B03	SS091813B03
Date Collected	08/19/2013	08/19/2013	08/19/2013
Date Received	08/24/2013	08/24/2013	08/24/2013
Date Prepped	09/18/2013	09/18/2013	09/18/2013
Date Analyzed	10/12/2013	10/12/2013	10/12/2013
Sample Size (wet)	29.9	16.54	29.66
% Solid	84.02	77.35	74.06
File ID	D603241.D	D603243.D	D603245.D
Units	mg/Kg	mg/Kg	mg/Kg
Final Volume	2	2	2
Dilution	1	1	1
Reporting Limit	0.0796	0.156	0.0910

Class	Abbrev	Analytes	Result		SSRL	Result		SSRL	Result		SSRL
SHC	C9	n-Nonane (C9)	0.0310	J	0.0796	0.0322	J	0.156	0.00209	JB	0.0910
SHC	C10	n-Decane (C10)	0.0490	JB	0.0796	0.0871	J	0.156	0.00865	JB	0.0910
SHC	C11	n-Undecane (C11)	0.0464	J	0.0796		U	0.156	0.000910	J	0.0910
SHC	C12	n-Dodecane (C12)	0.0680	J	0.0796		U	0.156	0.00109	J	0.0910
SHC	C13	n-Tridecane (C13)	0.251		0.0796	2.56		0.156	0.00173	J	0.0910
SHC	1380	2,6,10 Trimethyldodecane (1380)	0.0267	J	0.0796		U	0.156	0.00355	J	0.0910
SHC	C14	n-Tetradecane (C14)	0.0725	J	0.0796	2.85		0.156	0.00182	J	0.0910
SHC	1470	2,6,10 Trimethyltridecane (1470)	0.0471	J	0.0796		U	0.156	0.00264	J	0.0910
SHC	C15	n-Pentadecane (C15)	0.0678	J	0.0796	0.633		0.156	0.00437	J	0.0910
SHC	C16	n-Hexadecane (C16)	0.162		0.0796	1.98		0.156	0.00574	J	0.0910
SHC	1650	Norpristane (1650)	0.0520	J	0.0796		U	0.156	0.00182	J	0.0910
SHC	C17	n-Heptadecane (C17)	0.102		0.0796	1.91		0.156	0.00337	J	0.0910
SHC	Pr	Pristane	0.140		0.0796		U	0.156	0.00264	J	0.0910
SHC	C18	n-Octadecane (C18)	0.0721	J	0.0796		U	0.156	0.00992	J	0.0910
SHC	Ph	Phytane	0.0279	J	0.0796		U	0.156	0.00291	J	0.0910
SHC	C19	n-Nonadecane (C19)	0.0635	J	0.0796		U	0.156		U	0.0910
SHC	C20	n-Eicosane (C20)	0.0871		0.0796		U	0.156	0.00774	JB	0.0910
SHC	C21	n-Heneicosane (C21)	0.0901		0.0796	0.175		0.156	0.00829	J	0.0910
SHC	C22	n-Docosane (C22)	0.0630	J	0.0796	0.0718	J	0.156	0.0112	J	0.0910
SHC	C23	n-Tricosane (C23)	0.0751	J	0.0796		U	0.156	0.0237	J	0.0910
SHC	C24	n-Tetracosane (C24)	0.0668	J	0.0796		U	0.156	0.0142	J	0.0910
SHC	C25	n-Pentacosane (C25)	0.124		0.0796	0.0566	J	0.156	0.0597	J	0.0910
SHC	C26	n-Hexacosane (C26)	0.108		0.0796	0.0472	J	0.156	0.0302	J	0.0910
SHC	C27	n-Heptacosane (C27)	0.476		0.0796	0.316		0.156	0.757		0.0910
SHC	C28	n-Octacosane (C28)	0.139		0.0796	0.364		0.156	0.131		0.0910
SHC	C29	n-Nonacosane (C29)	0.362	CB	0.0796	0.254	CB	0.156	0.378	B	0.0910
SHC	C30	n-Triacontane (C30)	0.0768	J	0.0796	0.0374	J	0.156	0.0528	J	0.0910
SHC	C31	n-Hentriacontane (C31)	0.548		0.0796	0.332		0.156	0.442		0.0910
SHC	C32	n-Dotriacontane (C32)	0.0748	J	0.0796	0.0374	J	0.156	0.0493	J	0.0910
SHC	C33	n-Tritriacontane (C33)	0.592		0.0796	0.202		0.156	0.285		0.0910
SHC	C34	n-Tetratriacontane (C34)	0.0263	J	0.0796	0.0128	J	0.156	0.0251	J	0.0910
SHC	C35	n-Pentatriacontane (C35)	0.317		0.0796	0.0869	J	0.156	0.270		0.0910
SHC	C36	n-Hexatriacontane (C36)	0.0312	J	0.0796	0.00719	JB	0.156	0.0199	J	0.0910
SHC	C37	n-Heptatriacontane (C37)	0.0384	J	0.0796	0.0186	J	0.156	0.0274	J	0.0910
SHC	C38	n-Octatriacontane (C38)	0.0379	J	0.0796		U	0.156		U	0.0910
SHC	C39	n-Nonatriacontane (C39)	0.0167	J	0.0796		U	0.156		U	0.0910
SHC	C40	n-Tetracontane (C40)	0.0259	J	0.0796		U	0.156	0.0107	J	0.0910
SHC	TSH	Total Saturated Hydrocarbons	4.65		0.0796	12.1		0.156	2.66		0.0910
SHC	TPH	Total Petroleum Hydrocarbons (C9-C44)	80.5		2.63	1260		5.16	22.9		3.00

Surrogates (% Recovery)			
ortho-Terphenyl	88	91	77
d50-Tetracosane	97	94	83

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	SB01-07 (0.5-1.5)	SB02-05 (0.5-1.5)	SB02-09 (4.5-5.5)
Lab ID	1309010-04	1309010-05	1309010-06
Matrix	Soil	Soil	Soil
Reference Method	SHC	SHC	SHC
Batch ID	SS091813B03	SS091813B03	SS091813B03
Date Collected	08/20/2013	08/20/2013	08/21/2013
Date Received	08/24/2013	08/24/2013	08/24/2013
Date Prepped	09/18/2013	09/18/2013	09/18/2013
Date Analyzed	10/12/2013	10/12/2013	10/12/2013
Sample Size (wet)	29.9	13.36	14
% Solid	82.00	64.60	83.46
File ID	D603247.D	D603251.D	D603253.D
Units	mg/Kg	mg/Kg	mg/Kg
Final Volume	2	2	2
Dilution	1	1	1
Reporting Limit	0.0816	0.232	0.171

Class	Abbrev	Analytes	Result		SSRL	Result		SSRL	Result		SSRL
SHC	C9	n-Nonane (C9)	0.0332	J	0.0816	0.216	J	0.232	0.00548	JB	0.171
SHC	C10	n-Decane (C10)	0.0465	JB	0.0816	0.322		0.232	0.0200	JB	0.171
SHC	C11	n-Undecane (C11)	0.0458	J	0.0816	0.375		0.232	0.00359	J	0.171
SHC	C12	n-Dodecane (C12)	0.0610	J	0.0816	0.544		0.232	0.00839	J	0.171
SHC	C13	n-Tridecane (C13)	0.241		0.0816	2.50		0.232	0.00411	J	0.171
SHC	1380	2,6,10 Trimethyldodecane (1380)	0.0282	J	0.0816	0.220	J	0.232	0.00548	J	0.171
SHC	C14	n-Tetradecane (C14)	0.0643	J	0.0816	0.781		0.232	0.00223	J	0.171
SHC	1470	2,6,10 Trimethyltridecane (1470)	0.0502	J	0.0816	0.417		0.232	0.00308	J	0.171
SHC	C15	n-Pentadecane (C15)	0.0711	J	0.0816	0.589		0.232	0.0128	J	0.171
SHC	C16	n-Hexadecane (C16)	0.156		0.0816	1.44		0.232	0.0142	J	0.171
SHC	1650	Norpristane (1650)	0.0690	J	0.0816	0.220	J	0.232	0.00531	J	0.171
SHC	C17	n-Heptadecane (C17)	0.112		0.0816	0.837		0.232	0.00582	J	0.171
SHC	Pr	Pristane	0.137		0.0816	1.33		0.232	0.0106	J	0.171
SHC	C18	n-Octadecane (C18)	0.0738	J	0.0816	0.632		0.232	0.00787	J	0.171
SHC	Ph	Phytane	0.0377	J	0.0816	0.220	J	0.232	0.00394	J	0.171
SHC	C19	n-Nonadecane (C19)	0.0718	J	0.0816	0.563		0.232		U	0.171
SHC	C20	n-Eicosane (C20)	0.0714	J	0.0816	0.609		0.232	0.00445	JB	0.171
SHC	C21	n-Heneicosane (C21)	0.0910		0.0816	0.726		0.232	0.00770	J	0.171
SHC	C22	n-Docosane (C22)	0.0620	J	0.0816	0.475		0.232	0.00565	JB	0.171
SHC	C23	n-Tricosane (C23)	0.0802	J	0.0816	0.527		0.232	0.0130	JB	0.171
SHC	C24	n-Tetracosane (C24)	0.0638	J	0.0816	0.441		0.232	0.0104	J	0.171
SHC	C25	n-Pentacosane (C25)	0.130		0.0816	0.606		0.232	0.0264	JB	0.171
SHC	C26	n-Hexacosane (C26)	0.120		0.0816	0.378		0.232	0.0209	J	0.171
SHC	C27	n-Heptacosane (C27)	0.552		0.0816	1.52		0.232	0.103	J	0.171
SHC	C28	n-Octacosane (C28)	0.153		0.0816	0.631		0.232	0.0219	JB	0.171
SHC	C29	n-Nonacosane (C29)	0.378	CB	0.0816	0.971		0.232	0.141	CJB	0.171
SHC	C30	n-Triacontane (C30)	0.0613	J	0.0816	0.294		0.232	0.0181	JB	0.171
SHC	C31	n-Hentriacontane (C31)	0.381		0.0816	1.08		0.232	0.0839	J	0.171
SHC	C32	n-Dotriacontane (C32)	0.0536	J	0.0816	0.177	J	0.232	0.0163	JB	0.171
SHC	C33	n-Tritriacontane (C33)	0.465		0.0816	1.68		0.232	0.0479	J	0.171
SHC	C34	n-Tetratriacontane (C34)	0.0309	J	0.0816	0.143	J	0.232	0.0151	J	0.171
SHC	C35	n-Pentatriacontane (C35)	0.211		0.0816	0.802		0.232	0.0291	J	0.171
SHC	C36	n-Hexatriacontane (C36)		U	0.0816		U	0.232		U	0.171
SHC	C37	n-Heptatriacontane (C37)	0.0253	J	0.0816	0.139	J	0.232	0.0152	J	0.171
SHC	C38	n-Octatriacontane (C38)		U	0.0816	0.0966	J	0.232		U	0.171
SHC	C39	n-Nonatriacontane (C39)		U	0.0816	0.108	J	0.232		U	0.171
SHC	C40	n-Tetracontane (C40)		U	0.0816		U	0.232		U	0.171
SHC	TSH	Total Saturated Hydrocarbons	4.23		0.0816	22.6		0.232	0.693	B	0.171
SHC	TPH	Total Petroleum Hydrocarbons (C9-C44)	78.4		2.69	549		7.65	44.3		5.65

Surrogates (% Recovery)			
ortho-Terphenyl	88	86	87
d50-Tetracosane	97	100	93

NewFields
Perspective. Vision. Solutions.

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	SB03-06 (0.0-1.0)			SB03-07 (4.5-5.5)			SB03-08 (3.0-4.0)	
Lab ID	1309010-07			1309010-08			1309010-09	
Matrix	Soil			Soil			Soil	
Reference Method	SHC			SHC			SHC	
Batch ID	SS091813B03			SS091813B03			SS091813B03	
Date Collected	08/22/2013			08/22/2013			08/22/2013	
Date Received	08/24/2013			08/24/2013			08/24/2013	
Date Prepped	09/18/2013			09/18/2013			09/18/2013	
Date Analyzed	10/12/2013			10/12/2013			10/12/2013	
Sample Size (wet)	15.29			18.2			28.25	
% Solid	67.06			78.10			82.56	
File ID	D603255.D			D603257.D			D603259.D	
Units	mg/Kg			mg/Kg			mg/Kg	
Final Volume	3.33			2			2	
Dilution	1			1			1	
Reporting Limit	0.325			0.141			0.0858	

Class	Abbrev	Analytes	Result		SSRL	Result		SSRL	Result		SSRL
SHC	C9	n-Nonane (C9)	0.339		0.325	0.0502	J	0.141	0.00549	JB	0.0858
SHC	C10	n-Decane (C10)	0.465		0.325	0.0720	JB	0.141	0.0173	JB	0.0858
SHC	C11	n-Undecane (C11)	0.560		0.325	0.0577	J	0.141		U	0.0858
SHC	C12	n-Dodecane (C12)	0.980		0.325	0.101	J	0.141	0.141		0.0858
SHC	C13	n-Tridecane (C13)	8.24		0.325	1.27		0.141	0.184		0.0858
SHC	1380	2,6,10 Trimethyldodecane (1380)	5.90		0.325	0.211		0.141	0.668		0.0858
SHC	C14	n-Tetradecane (C14)	1.35		0.325	0.257		0.141	0.217		0.0858
SHC	1470	2,6,10 Trimethyltridecane (1470)	10.2		0.325	0.551		0.141	1.18		0.0858
SHC	C15	n-Pentadecane (C15)	0.771		0.325	0.0583	J	0.141	0.0406	J	0.0858
SHC	C16	n-Hexadecane (C16)	1.99		0.325	0.193		0.141		U	0.0858
SHC	1650	Norpristane (1650)	8.64		0.325	0.426		0.141	1.19		0.0858
SHC	C17	n-Heptadecane (C17)		U	0.325	0.0965	J	0.141		U	0.0858
SHC	Pr	Pristane	11.7		0.325	0.538		0.141	1.35		0.0858
SHC	C18	n-Octadecane (C18)		U	0.325	0.0791	J	0.141		U	0.0858
SHC	Ph	Phytane	6.06		0.325	0.260		0.141	0.702		0.0858
SHC	C19	n-Nonadecane (C19)	1.25		0.325		U	0.141		U	0.0858
SHC	C20	n-Eicosane (C20)		U	0.325	0.0763	J	0.141		U	0.0858
SHC	C21	n-Heneicosane (C21)	0.818		0.325	0.0931	J	0.141		U	0.0858
SHC	C22	n-Docosane (C22)	0.326		0.325	0.0477	J	0.141		U	0.0858
SHC	C23	n-Tricosane (C23)	0.477		0.325	0.0674	J	0.141		U	0.0858
SHC	C24	n-Tetracosane (C24)	0.324	J	0.325	0.0416	J	0.141	0.00592	JB	0.0858
SHC	C25	n-Pentacosane (C25)	0.475		0.325	0.0882	J	0.141	0.0158	JB	0.0858
SHC	C26	n-Hexacosane (C26)	0.355		0.325	0.0978	GJ	0.141	0.0120	JB	0.0858
SHC	C27	n-Heptacosane (C27)	0.888		0.325	0.440		0.141	0.0650	J	0.0858
SHC	C28	n-Octacosane (C28)	0.481		0.325	0.148		0.141	0.0537	GJ	0.0858
SHC	C29	n-Nonacosane (C29)	0.665	C	0.325	0.303	CB	0.141	0.0927	CB	0.0858
SHC	C30	n-Triacontane (C30)	0.199	J	0.325	0.0447	J	0.141	0.00986	JB	0.0858
SHC	C31	n-Hentriacontane (C31)	0.618		0.325	0.250		0.141	0.0667	J	0.0858
SHC	C32	n-Dotriacontane (C32)	0.178	J	0.325	0.0342	J	0.141	0.00729	JB	0.0858
SHC	C33	n-Tritriacontane (C33)	0.972		0.325	0.243		0.141	0.0380	J	0.0858
SHC	C34	n-Tetratriacontane (C34)	0.137	J	0.325		U	0.141	0.00266	JB	0.0858
SHC	C35	n-Pentatriacontane (C35)	0.460		0.325	0.148		0.141	0.0255	J	0.0858
SHC	C36	n-Hexatriacontane (C36)		U	0.325		U	0.141		U	0.0858
SHC	C37	n-Heptatriacontane (C37)	0.0974	J	0.325	0.0257	J	0.141	0.00712	J	0.0858
SHC	C38	n-Octatriacontane (C38)		U	0.325		U	0.141	0.00720	J	0.0858
SHC	C39	n-Nonatriacontane (C39)		U	0.325		U	0.141		U	0.0858
SHC	C40	n-Tetracontane (C40)		U	0.325		U	0.141		U	0.0858
SHC	TSH	Total Saturated Hydrocarbons	66.0		0.325	6.37		0.141	6.11		0.0858
SHC	TPH	Total Petroleum Hydrocarbons (C9-C44)	2730		10.7	235		4.64	236		2.83

Surrogates (% Recovery)			
ortho-Terphenyl	88	85	90
d50-Tetracosane	104	93	95

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	SB03-10 (0.5-1.5)
Lab ID	1309010-10
Matrix	Soil
Reference Method	SHC
Batch ID	SS091813B03
Date Collected	08/22/2013
Date Received	08/24/2013
Date Prepped	09/18/2013
Date Analyzed	10/12/2013
Sample Size (wet)	20
% Solid	82.97
File ID	D603261.D
Units	mg/Kg
Final Volume	2
Dilution	1
Reporting Limit	0.121

Class	Abbrev	Analytes	Result		SSRL
SHC	C9	n-Nonane (C9)	0.0318	J	0.121
SHC	C10	n-Decane (C10)	0.0512	JB	0.121
SHC	C11	n-Undecane (C11)	0.0413	J	0.121
SHC	C12	n-Dodecane (C12)	0.0586	J	0.121
SHC	C13	n-Tridecane (C13)	0.320		0.121
SHC	1380	2,6,10 Trimethyldodecane (1380)	0.0277	J	0.121
SHC	C14	n-Tetradecane (C14)	0.0570	J	0.121
SHC	1470	2,6,10 Trimethyltridecane (1470)	0.0527	J	0.121
SHC	C15	n-Pentadecane (C15)	0.0628	J	0.121
SHC	C16	n-Hexadecane (C16)	0.176		0.121
SHC	1650	Norpristane (1650)	0.180		0.121
SHC	C17	n-Heptadecane (C17)	0.115	J	0.121
SHC	Pr	Pristane	0.215		0.121
SHC	C18	n-Octadecane (C18)	0.102	J	0.121
SHC	Ph	Phytane	0.121		0.121
SHC	C19	n-Nonadecane (C19)	0.0914	J	0.121
SHC	C20	n-Eicosane (C20)	0.0880	J	0.121
SHC	C21	n-Heneicosane (C21)	0.120	J	0.121
SHC	C22	n-Docosane (C22)	0.0624	J	0.121
SHC	C23	n-Tricosane (C23)	0.0826	J	0.121
SHC	C24	n-Tetracosane (C24)	0.0559	J	0.121
SHC	C25	n-Pentacosane (C25)	0.146		0.121
SHC	C26	n-Hexacosane (C26)	0.0811	J	0.121
SHC	C27	n-Heptacosane (C27)	0.650		0.121
SHC	C28	n-Octacosane (C28)	0.200		0.121
SHC	C29	n-Nonacosane (C29)	0.418	CB	0.121
SHC	C30	n-Triacontane (C30)	0.0747	J	0.121
SHC	C31	n-Hentriacontane (C31)	0.587		0.121
SHC	C32	n-Dotriacontane (C32)	0.0759	J	0.121
SHC	C33	n-Tritriacontane (C33)	0.666		0.121
SHC	C34	n-Tetratriacontane (C34)	0.0351	J	0.121
SHC	C35	n-Pentatriacontane (C35)	0.325		0.121
SHC	C36	n-Hexatriacontane (C36)	0.197		0.121
SHC	C37	n-Heptatriacontane (C37)	0.0412	J	0.121
SHC	C38	n-Octatriacontane (C38)	0.0391	J	0.121
SHC	C39	n-Nonatriacontane (C39)	0.0181	J	0.121
SHC	C40	n-Tetracontane (C40)		U	0.121
SHC	TSH	Total Saturated Hydrocarbons	5.67		0.121
SHC	TPH	Total Petroleum Hydrocarbons (C9-C44)	165		3.98

Surrogates (% Recovery)	
ortho-Terphenyl	85
d50-Tetracosane	93

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Method Blank
Lab ID	SS091813B03
Matrix	Soil
Reference Method	Modified 8270D
Batch ID	SS091813B03
Date Collected	N/A
Date Received	N/A
Date Prepped	09/18/2013
Date Analyzed	10/02/2013
Sample Size (wet)	22
% Solid	100.00
File ID	d32749.D
Units	µg/Kg
Final Volume	2
Dilution	1
Reporting Limit	0.909

Class	Abbrev	Analytes	Result		SSRL
2	D0	cis/trans-Decalin		U	0.909
2	D1	C1-Decalins		U	0.909
2	D2	C2-Decalins		U	0.909
2	D3	C3-Decalins		U	0.909
2	D4	C4-Decalins		U	0.909
2	BT0	Benzothiophene		U	0.909
2	BT1	C1-Benzo(b)thiophenes		U	0.909
2	BT2	C2-Benzo(b)thiophenes		U	0.909
2	BT3	C3-Benzo(b)thiophenes		U	0.909
2	BT4	C4-Benzo(b)thiophenes		U	0.909
2	N0	Naphthalene	0.0945	J	0.909
2	N1	C1-Naphthalenes		U	0.909
2	N2	C2-Naphthalenes		U	0.909
2	N3	C3-Naphthalenes		U	0.909
2	N4	C4-Naphthalenes		U	0.909
2	B	Biphenyl		U	0.909
3	DF	Dibenzofuran		U	0.909
3	AY	Acenaphthylene		U	0.909
3	AE	Acenaphthene		U	0.909
3	F0	Fluorene		U	0.909
3	F1	C1-Fluorenes		U	0.909
3	F2	C2-Fluorenes		U	0.909
3	F3	C3-Fluorenes		U	0.909
3	A0	Anthracene		U	0.909
3	P0	Phenanthrene	0.120	J	0.909
3	PA1	C1-Phenanthrenes/Anthracenes		U	0.909
3	PA2	C2-Phenanthrenes/Anthracenes		U	0.909
3	PA3	C3-Phenanthrenes/Anthracenes		U	0.909
3	PA4	C4-Phenanthrenes/Anthracenes		U	0.909
3	RET	Retene		U	0.909
3	DBT0	Dibenzothiophene		U	0.909
3	DBT1	C1-Dibenzothiophenes		U	0.909
3	DBT2	C2-Dibenzothiophenes		U	0.909
3	DBT3	C3-Dibenzothiophenes		U	0.909
3	DBT4	C4-Dibenzothiophenes		U	0.909
4	BF	Benzo(b)fluorene		U	0.909
4	FL0	Fluoranthene	0.107	J	0.909
4	PY0	Pyrene	0.0780	J	0.909
4	FP1	C1-Fluoranthenes/Pyrenes		U	0.909
4	FP2	C2-Fluoranthenes/Pyrenes		U	0.909
4	FP3	C3-Fluoranthenes/Pyrenes		U	0.909
4	FP4	C4-Fluoranthenes/Pyrenes		U	0.909
4	NBT0	Naphthobenzothiophenes		U	0.909
4	NBT1	C1-Naphthobenzothiophenes		U	0.909
4	NBT2	C2-Naphthobenzothiophenes		U	0.909
4	NBT3	C3-Naphthobenzothiophenes		U	0.909
4	NBT4	C4-Naphthobenzothiophenes		U	0.909
4	BA0	Benz[a]anthracene		U	0.909
4	C0	Chrysene/Triphenylene		U	0.909
4	BC1	C1-Chrysenes		U	0.909
4	BC2	C2-Chrysenes		U	0.909
4	BC3	C3-Chrysenes		U	0.909
4	BC4	C4-Chrysenes		U	0.909
5	BBF	Benzo[b]fluoranthene		U	0.909
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene		U	0.909
5	BAF	Benzo[a]fluoranthene		U	0.909
5	BEP	Benzo[e]pyrene		U	0.909
5	BAP	Benzo[a]pyrene		U	0.909
5	PER	Perylene		U	0.909
6	IND	Indeno[1,2,3-cd]pyrene		U	0.909
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene		U	0.909
6	GHI	Benzo[g,h,i]perylene		U	0.909
	CAR	Carbazole		U	0.909
3	4MDT	4-Methyldibenzothiophene		U	0.909
3	2MDT	2/3-Methyldibenzothiophene		U	0.909
3	1MDT	1-Methyldibenzothiophene		U	0.909
3	3MP	3-Methylphenanthrene		U	0.909
3	2MP	2-Methylphenanthrene		U	0.909
3	2MA	2-Methylanthracene		U	0.909
3	9MP	9/4-Methylphenanthrene		U	0.909
3	1MP	1-Methylphenanthrene		U	0.909

Surrogates (% Recovery)	
Naphthalene-d8	80
Phenanthrene-d10	96
Benzo[a]pyrene-d12	101
5B(H)Cholane	99

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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Laboratory Control Sample	Laboratory Control Sample Dup
Lab ID	SS091813LCS02	SS091813LCSD03
Matrix	Soil	Soil
Reference Method	Modified 8270D	Modified 8270D
Batch ID	SS091813B03	SS091813B03
Date Collected	N/A	N/A
Date Received	N/A	N/A
Date Prepped	09/18/2013	09/18/2013
Date Analyzed	10/02/2013	10/02/2013
Sample Size (wet)	22	22
% Solid	100.00	100.00
File ID	d32751.D	d32753.D
Units	µg/Kg	µg/Kg
Final Volume	2	2
Dilution	1	1
Reporting Limit	0.909	0.909

Class	Abbrev	Analytes	Result		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit	Result
2	N0	Naphthalene	38.0	S	0.909	84	45.5	50	130	39.0
3	AY	Acenaphthylene	40.1	S	0.909	88	45.5	50	130	41.0
3	AE	Acenaphthene	40.2	S	0.909	88	45.5	50	130	40.8
3	F0	Fluorene	41.7	S	0.909	92	45.5	50	130	42.7
3	A0	Anthracene	41.6	S	0.909	92	45.5	50	130	42.7
3	P0	Phenanthrene	42.4	S	0.909	93	45.5	50	130	43.7
4	FL0	Fluoranthene	45.1	S	0.909	99	45.5	50	130	46.9
4	PY0	Pyrene	46.6	S	0.909	103	45.5	50	130	48.4
4	BA0	Benz[a]anthracene	47.7	S	0.909	105	45.5	50	130	49.1
4	C0	Chrysene/Triphenylene	46.9	S	0.909	103	45.5	50	130	48.0
5	BBF	Benzo[b]fluoranthene	50.1	S	0.909	110	45.5	50	130	48.9
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	48.7	S	0.909	107	45.5	50	130	52.1
5	BAP	Benzo[a]pyrene	50.0	S	0.909	110	45.5	50	130	51.5
6	IND	Indeno[1,2,3-cd]pyrene	52.8	S	0.909	116	45.5	50	130	50.2
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	50.2	S	0.909	110	45.5	50	130	51.4
6	GHI	Benzo[g,h,i]perylene	48.6	S	0.909	107	45.5	50	130	49.5

Surrogates (% Recovery)		
Naphthalene-d8	84	86
Phenanthrene-d10	100	102
Benzo[a]pyrene-d12	103	105
5B(H)Cholane	95	98

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID
Lab ID
Matrix
Reference Method
Batch ID
Date Collected
Date Received
Date Prepped
Date Analyzed
Sample Size (wet)
% Solid
File ID
Units
Final Volume
Dilution
Reporting Limit

Class	Abbrev	Analytes		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit	RPD	RPD Limit
2	N0	Naphthalene	S	0.909	86	45.5	50	130	2	30
3	AY	Acenaphthylene	S	0.909	90	45.5	50	130	2	30
3	AE	Acenaphthene	S	0.909	90	45.5	50	130	2	30
3	F0	Fluorene	S	0.909	94	45.5	50	130	3	30
3	A0	Anthracene	S	0.909	94	45.5	50	130	3	30
3	P0	Phenanthrene	S	0.909	96	45.5	50	130	3	30
4	FL0	Fluoranthene	S	0.909	103	45.5	50	130	4	30
4	PY0	Pyrene	S	0.909	107	45.5	50	130	4	30
4	BA0	Benz[a]anthracene	S	0.909	108	45.5	50	130	3	30
4	C0	Chrysene/Triphenylene	S	0.909	106	45.5	50	130	2	30
5	BBF	Benzo[b]fluoranthene	S	0.909	108	45.5	50	130	3	30
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	S	0.909	115	45.5	50	130	7	30
5	BAP	Benzo[a]pyrene	S	0.909	113	45.5	50	130	3	30
6	IND	Indeno[1,2,3-cd]pyrene	S	0.909	110	45.5	50	130	5	30
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	S	0.909	113	45.5	50	130	2	30
6	GHI	Benzo[g,h,i]perylene	S	0.909	109	45.5	50	130	2	30

Surrogates (% Recovery)
Naphthalene-d8
Phenanthrene-d10
Benzo[a]pyrene-d12
5B(H)Cholane

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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	SB01-07 (0.5-1.5)	SB01-07 (0.5-1.5)
Lab ID	1309010-04	1309010-04D
Matrix	Soil	Soil
Reference Method	Modified 8270D	Modified 8270D
Batch ID	SS091813B03	SS091813B03
Date Collected	08/20/2013	08/20/2013
Date Received	08/24/2013	08/24/2013
Date Prepped	09/18/2013	09/18/2013
Date Analyzed	10/02/2013	10/02/2013
Sample Size (wet)	29.9	29.96
% Solid	82.00	82.00
File ID	d32755.D	d32757.D
Units	µg/Kg	µg/Kg
Final Volume	2	2
Dilution	1	1
Reporting Limit	0.816	0.814

Class	Abbrev	Analytes	Result	SSRL	Result	SSRL	RPD	RPD Limit	
2	D0	cis/trans-Decalin	9.12	0.816	9.53	0.814	4	30	
2	D1	C1-Decalins	10.7	0.816	12.4	0.814	15	30	
2	D2	C2-Decalins	13.6	0.816	17.8	0.814	26	30	
2	D3	C3-Decalins	9.14	0.816	13.3	0.814	37	30	¤
2	D4	C4-Decalins	17.7	0.816	25.7	0.814	37	30	¤
2	BT0	Benzothiophene	3.23	0.816	3.46	0.814	7	30	
2	BT1	C1-Benzo(b)thiophenes	5.56	0.816	6.14	0.814	10	30	
2	BT2	C2-Benzo(b)thiophenes	6.52	0.816	7.06	0.814	8	30	
2	BT3	C3-Benzo(b)thiophenes	8.04	0.816	9.18	0.814	13	30	
2	BT4	C4-Benzo(b)thiophenes	4.61	0.816	5.64	0.814	20	30	
2	N0	Naphthalene	102	0.816	105	0.814	3	30	
2	N1	C1-Naphthalenes	192	0.816	199	0.814	4	30	
2	N2	C2-Naphthalenes	242	0.816	258	0.814	6	30	
2	N3	C3-Naphthalenes	200	0.816	225	0.814	12	30	
2	N4	C4-Naphthalenes	109	0.816	132	0.814	19	30	
2	B	Biphenyl	24.3	0.816	25.4	0.814	5	30	
3	DF	Dibenzofuran	52.3	0.816	52.0	0.814	1	30	
3	AY	Acenaphthylene	18.0	0.816	37.9	0.814	71	30	¤
3	AE	Acenaphthene	9.70	0.816	9.31	0.814	4	30	
3	F0	Fluorene	16.3	0.816	15.2	0.814	7	30	
3	F1	C1-Fluorenes	29.7	0.816	33.2	0.814	11	30	
3	F2	C2-Fluorenes	90.1	0.816	97.7	0.814	8	30	
3	F3	C3-Fluorenes	101	0.816	108	0.814	7	30	
3	A0	Anthracene	35.6	0.816	43.4	0.814	20	30	
3	P0	Phenanthrene	210	0.816	215	0.814	3	30	
3	PA1	C1-Phenanthrenes/Anthracenes	261	0.816	284	0.814	9	30	
3	PA2	C2-Phenanthrenes/Anthracenes	249	0.816	269	0.814	8	30	
3	PA3	C3-Phenanthrenes/Anthracenes	137	0.816	143	0.814	4	30	
3	PA4	C4-Phenanthrenes/Anthracenes	70.5	0.816	70.6	0.814	0	30	
3	RET	Retene	47.7	0.816	38.5	0.814	21	30	
3	DBT0	Dibenzothiophene	23.1	0.816	24.1	0.814	4	30	
3	DBT1	C1-Dibenzothiophenes	45.4	0.816	49.7	0.814	9	30	
3	DBT2	C2-Dibenzothiophenes	50.3	0.816	57.0	0.814	13	30	
3	DBT3	C3-Dibenzothiophenes	31.4	0.816	36.4	0.814	15	30	
3	DBT4	C4-Dibenzothiophenes	14.1	0.816	15.9	0.814	12	30	
4	BF	Benzo(b)fluorene	22.6	0.816	31.2	0.814	32	30	¤
4	FL0	Fluoranthene	196	0.816	292	0.814	40	30	¤
4	PY0	Pyrene	173	0.816	263	0.814	41	30	¤
4	FP1	C1-Fluoranthenes/Pyrenes	163	0.816	204	0.814	23	30	
4	FP2	C2-Fluoranthenes/Pyrenes	184	0.816	205	0.814	11	30	
4	FP3	C3-Fluoranthenes/Pyrenes	162	0.816	169	0.814	4	30	
4	FP4	C4-Fluoranthenes/Pyrenes	117	0.816	121	0.814	4	30	
4	NBT0	Naphthobenzothiophenes	49.4	0.816	56.1	0.814	13	30	
4	NBT1	C1-Naphthobenzothiophenes	66.5	0.816	69.9	0.814	5	30	
4	NBT2	C2-Naphthobenzothiophenes	57.0	0.816	59.4	0.814	4	30	
4	NBT3	C3-Naphthobenzothiophenes	30.6	0.816	32.5	0.814	6	30	
4	NBT4	C4-Naphthobenzothiophenes	15.0	0.816	14.7	0.814	2	30	
4	BA0	Benz[a]anthracene	120	0.816	177	0.814	39	30	¤
4	C0	Chrysene/Triphenylene	158	0.816	208	0.814	27	30	
4	BC1	C1-Chrysenes	136	0.816	151	0.814	10	30	
4	BC2	C2-Chrysenes	116	0.816	123	0.814	6	30	
4	BC3	C3-Chrysenes	108	0.816	108	0.814	0	30	
4	BC4	C4-Chrysenes	65.1	0.816	69.8	0.814	7	30	
5	BBF	Benzo[b]fluoranthene	124	0.816	199	0.814	46	30	¤
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	112	0.816	146	0.814	26	30	
5	BAF	Benzo[a]fluoranthene	26.2	0.816	39.1	0.814	39	30	¤
5	BEP	Benzo[e]pyrene	95.3	0.816	138	0.814	37	30	¤
5	BAP	Benzo[a]pyrene	123	0.816	193	0.814	44	30	¤
5	PER	Perylene	51.2	0.816	74.2	0.814	37	30	¤
6	IND	Indeno[1,2,3-cd]pyrene	91.1	0.816	138	0.814	41	30	¤
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	27.7	0.816	40.1	0.814	37	30	¤
6	GHI	Benzo[g,h,i]perylene	88.0	0.816	135	0.814	42	30	¤
	CAR	Carbazole	15.4	0.816	13.8	0.814	11	30	
3	4MDT	4-Methyldibenzothiophene	19.6	0.816	21.7	0.814	10	30	
3	2MDT	2/3-Methyldibenzothiophene	19.4	0.816	21.0	0.814	8	30	
3	1MDT	1-Methyldibenzothiophene	3.45	0.816	3.86	0.814	11	30	
3	3MP	3-Methylphenanthrene	58.5	0.816	63.3	0.814	8	30	
3	2MP	2-Methylphenanthrene	88.2	0.816	95.4	0.814	8	30	
3	2MA	2-Methylanthracene	10.9	0.816	12.6	0.814	14	30	
3	9MP	9/4-Methylphenanthrene	57.2	0.816	62.7	0.814	9	30	
3	1MP	1-Methylphenanthrene	44.1	0.816	47.5	0.814	7	30	

Surrogates (% Recovery)		
Naphthalene-d8	69	70
Phenanthrene-d10	93	94
Benzo[a]pyrene-d12	99	96
5B(H)Cholane	102	102

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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Alaska North Slope Crude
Lab ID	ST091213ANC01
Matrix	Oil
Reference Method	Modified 8270D
Batch ID	N/A
Date Collected	N/A
Date Received	N/A
Date Prepped	N/A
Date Analyzed	08/17/2013
Sample Size (wet)	0.05073
% Solid	100.00
File ID	D32061.D
Units	mg/Kg
Final Volume	10
Dilution	1
Reporting Limit	1.97

Class	Abbrev	Analytes	Result		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit
2	D0	cis/trans-Decalin	439		1.97	92	479.20	65	135
2	D1	C1-Decalins	710		1.97	97	728.90	65	135
2	D2	C2-Decalins	668		1.97	105	635.50	65	135
2	D3	C3-Decalins	396		1.97	120	329.80	65	135
2	D4	C4-Decalins	397		1.97	122	326.50	65	135
2	BT0	Benzothiophene	5.73		1.97	106	5.40	65	135
2	BT1	C1-Benzo(b)thiophenes	32.0		1.97	111	28.90	65	135
2	BT2	C2-Benzo(b)thiophenes	55.7		1.97	112	49.60	65	135
2	BT3	C3-Benzo(b)thiophenes	121		1.97	122	99.00	65	135
2	BT4	C4-Benzo(b)thiophenes	107		1.97	123	87.10	65	135
2	N0	Naphthalene	553		1.97	100	555.80	65	135
2	N1	C1-Naphthalenes	1220		1.97	104	1167.30	65	135
2	N2	C2-Naphthalenes	1570		1.97	111	1409.70	65	135
2	N3	C3-Naphthalenes	1220		1.97	118	1035.90	65	135
2	N4	C4-Naphthalenes	709		1.97	126	561.10	65	135
2	B	Biphenyl	156		1.97	107	145.70	65	135
3	DF	Dibenzofuran	52.8		1.97	103	51.20	65	135
3	AY	Acenaphthylene	7.09		1.97	109	6.50	65	135
3	AE	Acenaphthene	16.9		1.97	91	18.70	65	135
3	F0	Fluorene	76.5		1.97	103	74.60	65	135
3	F1	C1-Fluorenes	185		1.97	109	170.20	65	135
3	F2	C2-Fluorenes	283		1.97	111	255.40	65	135
3	F3	C3-Fluorenes	275		1.97	115	238.50	65	135
3	A0	Anthracene		U	1.97	0			135
3	P0	Phenanthrene	217		1.97	102	212.20	65	135
3	PA1	C1-Phenanthrenes/Anthracenes	489		1.97	113	432.70	65	135
3	PA2	C2-Phenanthrenes/Anthracenes	568		1.97	122	465.90	65	135
3	PA3	C3-Phenanthrenes/Anthracenes	394		1.97	124	317.40	65	135
3	PA4	C4-Phenanthrenes/Anthracenes	172		1.97	133	129.00	65	135
3	RET	Retene		U	1.97				
3	DBT0	Dibenzothiophene	149		1.97	107	138.90	65	135
3	DBT1	C1-Dibenzothiophenes	335		1.97	120	278.60	65	135
3	DBT2	C2-Dibenzothiophenes	476		1.97	126	377.50	65	135
3	DBT3	C3-Dibenzothiophenes	443		1.97	130	341.40	65	135
3	DBT4	C4-Dibenzothiophenes	240		1.97	131	183.40	65	135
4	BF	Benzo(b)fluorene	5.95		1.97				
4	FL0	Fluoranthene	4.24		1.97	106	4.00	65	135
4	PY0	Pyrene	11.3		1.97	87	13.00	65	135
4	FP1	C1-Fluoranthenes/Pyrenes	69.1		1.97	109	63.10	65	135
4	FP2	C2-Fluoranthenes/Pyrenes	116		1.97	114	102.20	65	135
4	FP3	C3-Fluoranthenes/Pyrenes	135		1.97	113	119.60	65	135
4	FP4	C4-Fluoranthenes/Pyrenes	119		1.97	114	104.00	65	135
4	NBT0	Naphthobenzothiophenes	43.1		1.97	98	43.80	65	135
4	NBT1	C1-Naphthobenzothiophenes	115		1.97	98	117.20	65	135
4	NBT2	C2-Naphthobenzothiophenes	163		1.97	100	163.30	65	135
4	NBT3	C3-Naphthobenzothiophenes	129		1.97	100	128.70	65	135
4	NBT4	C4-Naphthobenzothiophenes	93.8		1.97	105	89.00	65	135
4	BA0	Benz[a]anthracene	2.06		1.97	98	2.10	65	135
4	C0	Chrysene/Triphenylene	39.6		1.97	112	35.20	65	135
4	BC1	C1-Chrysenes	68.3		1.97	109	62.80	65	135
4	BC2	C2-Chrysenes	98.1		1.97	114	86.00	65	135
4	BC3	C3-Chrysenes	102		1.97	104	97.60	65	135
4	BC4	C4-Chrysenes	64.0		1.97	108	59.40	65	135
5	BBF	Benzo[b]fluoranthene	5.10		1.97	98	5.20	65	135
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.417	J	1.97				135
5	BAF	Benzo[a]fluoranthene		U	1.97				
5	BEP	Benzo[e]pyrene	10.7		1.97	109	9.80	65	135
5	BAP	Benzo[a]pyrene	1.62	J	1.97	86	1.90	65	135
5	PER	Perylene	2.82		1.97	101	2.80	65	135
6	IND	Indeno[1,2,3-cd]pyrene	0.550	J	1.97				135
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.861	J	1.97				135
6	GHI	Benzo[g,h,i]perylene	3.16		1.97	102	3.10	65	135
	CAR	Carbazole	5.35		1.97	89	6.00	65	135
3	4MDT	4-Methyldibenzothiophene	158		1.97	120	131.80	65	135
3	2MDT	2/3-Methyldibenzothiophene	123		1.97	126	97.50	65	135
3	1MDT	1-Methyldibenzothiophene	50.4		1.97	114	44.20	65	135
3	3MP	3-Methylphenanthrene	103		1.97	115	89.40	65	135
3	2MP	2-Methylphenanthrene	108		1.97	111	97.70	65	135
3	2MA	2-Methylanthracene	3.47		1.97	108	3.20	65	135
3	9MP	9/4-Methylphenanthrene	162		1.97	115	141.20	65	135
3	1MP	1-Methylphenanthrene	106		1.97	109	97.40	65	135

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	SB01-07 (0.5-1.5)	SB02-05 (0.5-1.5)	SB03-06 (0.0-1.0)
Lab ID	1309010-04	1309010-05	1309010-07
Matrix	Soil	Soil	Soil
Reference Method	Modified 8270D	Modified 8270D	Modified 8270D
Batch ID	SS091813B03	SS091813B03	SS091813B03
Date Collected	08/20/2013	08/20/2013	08/22/2013
Date Received	08/24/2013	08/24/2013	08/24/2013
Date Prepped	09/18/2013	09/18/2013	09/18/2013
Date Analyzed	10/02/2013	10/03/2013	10/03/2013
Sample Size (wet)	29.9	13.36	15.29
% Solid	82.00	64.60	67.06
File ID	d32755.D	d32759.D	d32761.D
Units	µg/Kg	µg/Kg	µg/Kg
Final Volume	2	2	3.33
Dilution	1	1	1
Reporting Limit	0.816	2.32	3.25

Class	Abbrev	Analytes	Result	SSRL	Result	SSRL	Result	SSRL
2	D0	cis/trans-Decalin	9.12	0.816	69.3	2.32	80.0	3.25
2	D1	C1-Decalins	10.7	0.816	76.4	2.32	166	3.25
2	D2	C2-Decalins	13.6	0.816	113	2.32	887	3.25
2	D3	C3-Decalins	9.14	0.816	80.7	2.32	2180	3.25
2	D4	C4-Decalins	17.7	0.816	133	2.32	7940	3.25
2	BT0	Benzothiophene	3.23	0.816	20.6	2.32	90.4	3.25
2	BT1	C1-Benzo(b)thiophenes	5.56	0.816	41.4	2.32	279	3.25
2	BT2	C2-Benzo(b)thiophenes	6.52	0.816	56.3	2.32	400	3.25
2	BT3	C3-Benzo(b)thiophenes	8.04	0.816	70.6	2.32	836	3.25
2	BT4	C4-Benzo(b)thiophenes	4.61	0.816	46.1	2.32	515	3.25
2	N0	Naphthalene	102	0.816	1200	2.32	2280	3.25
2	N1	C1-Naphthalenes	192	0.816	2200	2.32	5180	3.25
2	N2	C2-Naphthalenes	242	0.816	2450	2.32	5300	3.25
2	N3	C3-Naphthalenes	200	0.816	1960	2.32	3180	3.25
2	N4	C4-Naphthalenes	109	0.816	1110	2.32	2370	3.25
2	B	Biphenyl	24.3	0.816	237	2.32	833	3.25
3	DF	Dibenzofuran	52.3	0.816	622	2.32	807	3.25
3	AY	Acenaphthylene	18.0	0.816	112	2.32	122	3.25
3	AE	Acenaphthene	9.70	0.816	69.7	2.32	144	3.25
3	F0	Fluorene	16.3	0.816	78.3	2.32	237	3.25
3	F1	C1-Fluorenes	29.7	0.816	153	2.32	414	3.25
3	F2	C2-Fluorenes	90.1	0.816	596	2.32	1260	3.25
3	F3	C3-Fluorenes	101	0.816	738	2.32	1270	3.25
3	A0	Anthracene	35.6	0.816	247	2.32	116	3.25
3	P0	Phenanthrene	210	0.816	1510	2.32	1510	3.25
3	PA1	C1-Phenanthrenes/Anthracenes	261	0.816	2010	2.32	2350	3.25
3	PA2	C2-Phenanthrenes/Anthracenes	249	0.816	1940	2.32	2330	3.25
3	PA3	C3-Phenanthrenes/Anthracenes	137	0.816	1200	2.32	1270	3.25
3	PA4	C4-Phenanthrenes/Anthracenes	70.5	0.816	638	2.32	578	3.25
3	RET	Retene	47.7	0.816	139	2.32	U	3.25
3	DBT0	Dibenzothiophene	23.1	0.816	169	2.32	416	3.25
3	DBT1	C1-Dibenzothiophenes	45.4	0.816	325	2.32	708	3.25
3	DBT2	C2-Dibenzothiophenes	50.3	0.816	379	2.32	918	3.25
3	DBT3	C3-Dibenzothiophenes	31.4	0.816	286	2.32	531	3.25
3	DBT4	C4-Dibenzothiophenes	14.1	0.816	147	2.32	249	3.25
4	BF	Benzo(b)fluorene	22.6	0.816	81.0	2.32	40.0	3.25
4	FL0	Fluoranthene	196	0.816	968	2.32	227	3.25
4	PY0	Pyrene	173	0.816	837	2.32	367	3.25
4	FP1	C1-Fluoranthenes/Pyrenes	163	0.816	976	2.32	750	3.25
4	FP2	C2-Fluoranthenes/Pyrenes	184	0.816	1480	2.32	1060	3.25
4	FP3	C3-Fluoranthenes/Pyrenes	162	0.816	1320	2.32	959	3.25
4	FP4	C4-Fluoranthenes/Pyrenes	117	0.816	964	2.32	620	3.25
4	NBT0	Naphthobenzothiophenes	49.4	0.816	329	2.32	183	3.25
4	NBT1	C1-Naphthobenzothiophenes	66.5	0.816	469	2.32	316	3.25
4	NBT2	C2-Naphthobenzothiophenes	57.0	0.816	378	2.32	278	3.25
4	NBT3	C3-Naphthobenzothiophenes	30.6	0.816	230	2.32	154	3.25
4	NBT4	C4-Naphthobenzothiophenes	15.0	0.816	118	2.32	82.2	3.25
4	BA0	Benz[a]anthracene	120	0.816	455	2.32	142	3.25
4	C0	Chrysene/Triphenylene	158	0.816	745	2.32	325	3.25
4	BC1	C1-Chrysenes	136	0.816	769	2.32	544	3.25
4	BC2	C2-Chrysenes	116	0.816	765	2.32	579	3.25
4	BC3	C3-Chrysenes	108	0.816	858	2.32	617	3.25
4	BC4	C4-Chrysenes	65.1	0.816	577	2.32	399	3.25
5	BBF	Benzo[b]fluoranthene	124	0.816	736	2.32	229	3.25
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	112	0.816	422	2.32	140	3.25
5	BAF	Benzo[a]fluoranthene	26.2	0.816	93.7	2.32	34.4	3.25
5	BEP	Benzo[e]pyrene	95.3	0.816	496	2.32	204	3.25
5	BAP	Benzo[a]pyrene	123	0.816	386	2.32	131	3.25
5	PER	Perylene	51.2	0.816	112	2.32	30.0	3.25
6	IND	Indeno[1,2,3-cd]pyrene	91.1	0.816	403	2.32	166	3.25
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	27.7	0.816	130	2.32	57.2	3.25
6	GHI	Benzo[g,h,i]perylene	88.0	0.816	393	2.32	175	3.25
	CAR	Carbazole	15.4	0.816	93.8	2.32	78.6	3.25
3	4MDT	4-Methyldibenzothiophene	19.6	0.816	116	2.32	336	3.25
3	2MDT	2/3-Methyldibenzothiophene	19.4	0.816	128	2.32	270	3.25
3	1MDT	1-Methyldibenzothiophene	3.45	0.816	34.8	2.32	51.6	3.25
3	3MP	3-Methylphenanthrene	58.5	0.816	403	2.32	556	3.25
3	2MP	2-Methylphenanthrene	88.2	0.816	667	2.32	833	3.25
3	2MA	2-Methylanthracene	10.9	0.816	68.6	2.32	94.5	3.25
3	9MP	9/4-Methylphenanthrene	57.2	0.816	484	2.32	482	3.25
3	1MP	1-Methylphenanthrene	44.1	0.816	378	2.32	358	3.25

Surrogates (% Recovery)			
Naphthalene-d8	69	77	76
Phenanthrene-d10	93	103	109
Benzo[a]pyrene-d12	99	94	96
5B(H)Cholane	102	108	109

U: The analyte was analyzed for but not detected at the sample specific level reported
B: Found in associated blank as well as sample.
J: Estimated value, below quantitation limit.
E: Estimated value, exceeds the upper limit of calibration.
NA: Not Applicable
D: Secondary Dilution Performed
D1: Tertiary Dilution Performed
ª: Value outside of QC Limits.
§: Surrogate value outside of acceptable range.
X: It is not possible to calculate RPD, one result is below the detection limit, the other is above reporting limit
G: Matrix Interference.
P: Greater than 40% RPD between the two columns, the higher value is reported according to the method
I: Due to interference, the lower value is reported.
N: Spike recovery outside control limits.
E: Estimated due to Interference. (Metals)
¤: Duplicate outside control limits.
P: Spike compound. (Metals)
J: Below CRDL, Project DL, or RL but greater than or equal to MDI
C: Sample concentration is > 4 times the spike level, recovery limits do not apply. (Metals)
S: Spike Compound. (Organics)
§: RPD criteria not applicable to results less than 5 times the reporting limit. (Metals)
T: Tentatively identified corexit compound.
C: Co-elution.
Z: Result not surrogate corrected.
DL: Surrogate result diluted out of sample.
W: Matrix interference may be present based on chemical reasonableness evaluation.

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Method Blank
Lab ID	SO100413B03
Matrix	NAPL
Reference Method	Modified 8270D
Batch ID	SO100413B03
Date Collected	N/A
Date Received	N/A
Date Prepped	09/24/2013
Date Analyzed	10/04/2013
Sample Size (wet)	0.1
% Solid	100.00
File ID	d32777.D
Units	mg/Kg
Final Volume	20
Dilution	1
Reporting Limit	2.00

Class	Abbrev	Analytes	Result		SSRL
2	D0	cis/trans-Decalin		U	2.00
2	D1	C1-Decalins		U	2.00
2	D2	C2-Decalins		U	2.00
2	D3	C3-Decalins		U	2.00
2	D4	C4-Decalins		U	2.00
2	BT0	Benzothiophene		U	2.00
2	BT1	C1-Benzo(b)thiophenes		U	2.00
2	BT2	C2-Benzo(b)thiophenes		U	2.00
2	BT3	C3-Benzo(b)thiophenes		U	2.00
2	BT4	C4-Benzo(b)thiophenes		U	2.00
2	N0	Naphthalene		U	2.00
2	N1	C1-Naphthalenes		U	2.00
2	N2	C2-Naphthalenes		U	2.00
2	N3	C3-Naphthalenes		U	2.00
2	N4	C4-Naphthalenes		U	2.00
2	B	Biphenyl		U	2.00
3	DF	Dibenzofuran		U	2.00
3	AY	Acenaphthylene		U	2.00
3	AE	Acenaphthene		U	2.00
3	F0	Fluorene		U	2.00
3	F1	C1-Fluorenes		U	2.00
3	F2	C2-Fluorenes		U	2.00
3	F3	C3-Fluorenes		U	2.00
3	A0	Anthracene		U	2.00
3	P0	Phenanthrene		U	2.00
3	PA1	C1-Phenanthrenes/Anthracenes		U	2.00
3	PA2	C2-Phenanthrenes/Anthracenes		U	2.00
3	PA3	C3-Phenanthrenes/Anthracenes		U	2.00
3	PA4	C4-Phenanthrenes/Anthracenes		U	2.00
3	RET	Retene		U	2.00
3	DBT0	Dibenzothiophene		U	2.00
3	DBT1	C1-Dibenzothiophenes		U	2.00
3	DBT2	C2-Dibenzothiophenes		U	2.00
3	DBT3	C3-Dibenzothiophenes		U	2.00
3	DBT4	C4-Dibenzothiophenes		U	2.00
4	BF	Benzo(b)fluorene		U	2.00
4	FL0	Fluoranthene		U	2.00
4	PY0	Pyrene		U	2.00
4	FP1	C1-Fluoranthenes/Pyrenes		U	2.00
4	FP2	C2-Fluoranthenes/Pyrenes		U	2.00
4	FP3	C3-Fluoranthenes/Pyrenes		U	2.00
4	FP4	C4-Fluoranthenes/Pyrenes		U	2.00
4	NBT0	Naphthobenzothiophenes		U	2.00
4	NBT1	C1-Naphthobenzothiophenes		U	2.00
4	NBT2	C2-Naphthobenzothiophenes		U	2.00
4	NBT3	C3-Naphthobenzothiophenes		U	2.00
4	NBT4	C4-Naphthobenzothiophenes		U	2.00
4	BA0	Benz[a]anthracene		U	2.00
4	C0	Chrysene/Triphenylene		U	2.00
4	BC1	C1-Chrysenes		U	2.00
4	BC2	C2-Chrysenes		U	2.00
4	BC3	C3-Chrysenes		U	2.00
4	BC4	C4-Chrysenes		U	2.00
5	BBF	Benzo[b]fluoranthene		U	2.00
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene		U	2.00
5	BAF	Benzo[a]fluoranthene		U	2.00
5	BEP	Benzo[e]pyrene		U	2.00
5	BAP	Benzo[a]pyrene		U	2.00
5	PER	Perylene		U	2.00
6	IND	Indeno[1,2,3-cd]pyrene		U	2.00
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene		U	2.00
6	GHI	Benzo[g,h,i]perylene		U	2.00
	CAR	Carbazole		U	2.00
3	4MDT	4-Methyldibenzothiophene		U	2.00
3	2MDT	2/3-Methyldibenzothiophene		U	2.00
3	1MDT	1-Methyldibenzothiophene		U	2.00
3	3MP	3-Methylphenanthrene		U	2.00
3	2MP	2-Methylphenanthrene		U	2.00
3	2MA	2-Methylanthracene		U	2.00
3	9MP	9/4-Methylphenanthrene		U	2.00
3	1MP	1-Methylphenanthrene		U	2.00

Surrogates (% Recovery)	
Naphthalene-d8	96
Phenanthrene-d10	103

Benzo[a]pyrene-d12	112

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Laboratory Control Sample
Lab ID	SO100413LCS04
Matrix	NAPL
Reference Method	Modified 8270D
Batch ID	SO100413B03
Date Collected	N/A
Date Received	N/A
Date Prepped	09/24/2013
Date Analyzed	10/04/2013
Sample Size (wet)	0.1
% Solid	100.00
File ID	d32779.D
Units	mg/Kg
Final Volume	20
Dilution	1
Reporting Limit	2.00

Class	Abbrev	Analytes	Result		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit
2	N0	Naphthalene	188	S	2.00	94	200	50	130
3	AY	Acenaphthylene	200	S	2.00	100	200	50	130
3	AE	Acenaphthene	198	S	2.00	99	200	50	130
3	F0	Fluorene	202	S	2.00	101	200	50	130
3	A0	Anthracene	204	S	2.00	102	200	50	130
3	P0	Phenanthrene	202	S	2.00	101	200	50	130
4	FL0	Fluoranthene	217	S	2.00	109	200	50	130
4	PY0	Pyrene	224	S	2.00	112	200	50	130
4	BA0	Benz[a]anthracene	224	S	2.00	112	200	50	130
4	C0	Chrysene/Triphenylene	219	S	2.00	109	200	50	130
5	BBF	Benzo[b]fluoranthene	229	S	2.00	115	200	50	130
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	227	S	2.00	113	200	50	130
5	BAP	Benzo[a]pyrene	242	S	2.00	121	200	50	130
6	IND	Indeno[1,2,3-cd]pyrene	242	S	2.00	121	200	50	130
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	230	S	2.00	115	200	50	130
6	GHI	Benzo[g,h,i]perylene	223	S	2.00	111	200	50	130

Surrogates (% Recovery)	
Naphthalene-d8	99
Phenanthrene-d10	107
Benzo[a]pyrene-d12	113

NewFields
Perspective. Vision. Solutions.

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Laboratory Control Sample Dup
Lab ID	SO100413LCSD03
Matrix	NAPL
Reference Method	Modified 8270D
Batch ID	SO100413B03
Date Collected	N/A
Date Received	N/A
Date Prepped	09/24/2013
Date Analyzed	10/05/2013
Sample Size (wet)	0.1
% Solid	100.00
File ID	d32781.D
Units	mg/Kg
Final Volume	20
Dilution	1
Reporting Limit	2.00

Class	Abbrev	Analytes	Result		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit	RPD	RPD Limit
2	N0	Naphthalene	192	S	2.00	96	200	50	130	2	30
3	AY	Acenaphthylene	204	S	2.00	102	200	50	130	2	30
3	AE	Acenaphthene	202	S	2.00	101	200	50	130	2	30
3	F0	Fluorene	205	S	2.00	103	200	50	130	2	30
3	A0	Anthracene	206	S	2.00	103	200	50	130	1	30
3	P0	Phenanthrene	205	S	2.00	102	200	50	130	1	30
4	FL0	Fluoranthene	220	S	2.00	110	200	50	130	1	30
4	PY0	Pyrene	227	S	2.00	114	200	50	130	2	30
4	BA0	Benz[a]anthracene	225	S	2.00	113	200	50	130	0	30
4	C0	Chrysene/Triphenylene	219	S	2.00	110	200	50	130	0	30
5	BBF	Benzo[b]fluoranthene	233	S	2.00	117	200	50	130	2	30
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	228	S	2.00	114	200	50	130	0	30
5	BAP	Benzo[a]pyrene	244	S	2.00	122	200	50	130	1	30
6	IND	Indeno[1,2,3-cd]pyrene	245	S	2.00	122	200	50	130	1	30
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	233	S	2.00	116	200	50	130	1	30
6	GHI	Benzo[g,h,i]perylene	224	S	2.00	112	200	50	130	0	30

Surrogates (% Recovery)	
Naphthalene-d8	99
Phenanthrene-d10	106
Benzo[a]pyrene-d12	111

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID
Lab ID
Matrix
Reference Method
Batch ID
Date Collected
Date Received
Date Prepped
Date Analyzed
Sample Size (wet)
% Solid
File ID
Units
Final Volume
Dilution
Reporting Limit

Class	Abbrev	Analytes
2	N0	Naphthalene
3	AY	Acenaphthylene
3	AE	Acenaphthene
3	F0	Fluorene
3	A0	Anthracene
3	P0	Phenanthrene
4	FL0	Fluoranthene
4	PY0	Pyrene
4	BA0	Benz[a]anthracene
4	C0	Chrysene/Triphenylene
5	BBF	Benzo[b]fluoranthene
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene
5	BAP	Benzo[a]pyrene
6	IND	Indeno[1,2,3-cd]pyrene
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene
6	GHI	Benzo[g,h,i]perylene

Surrogates (% Recovery)
Naphthalene-d8
Phenanthrene-d10
Benzo[a]pyrene-d12

NewFields
Perspective. Vision. Solutions.

Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	Alaska North Slope Crude
Lab ID	ST091213ANC01
Matrix	Oil
Reference Method	Modified 8270D
Batch ID	N/A
Date Collected	N/A
Date Received	N/A
Date Prepped	N/A
Date Analyzed	08/17/2013
Sample Size (wet)	0.05073
% Solid	100.00
File ID	D32061.D
Units	mg/Kg
Final Volume	10
Dilution	1
Reporting Limit	1.97

Class	Abbrev	Analytes	Result		SSRL	% Rec	Spike Conc.	Lower Limit	Upper Limit
2	D0	cis/trans-Decalin	439		1.97	92	479.20	65	135
2	D1	C1-Decalins	710		1.97	97	728.90	65	135
2	D2	C2-Decalins	668		1.97	105	635.50	65	135
2	D3	C3-Decalins	396		1.97	120	329.80	65	135
2	D4	C4-Decalins	397		1.97	122	326.50	65	135
2	BT0	Benzothiophene	5.73		1.97	106	5.40	65	135
2	BT1	C1-Benzo(b)thiophenes	32.0		1.97	111	28.90	65	135
2	BT2	C2-Benzo(b)thiophenes	55.7		1.97	112	49.60	65	135
2	BT3	C3-Benzo(b)thiophenes	121		1.97	122	99.00	65	135
2	BT4	C4-Benzo(b)thiophenes	107		1.97	123	87.10	65	135
2	N0	Naphthalene	553		1.97	100	555.80	65	135
2	N1	C1-Naphthalenes	1220		1.97	104	1167.30	65	135
2	N2	C2-Naphthalenes	1570		1.97	111	1409.70	65	135
2	N3	C3-Naphthalenes	1220		1.97	118	1035.90	65	135
2	N4	C4-Naphthalenes	709		1.97	126	561.10	65	135
2	B	Biphenyl	156		1.97	107	145.70	65	135
3	DF	Dibenzofuran	52.8		1.97	103	51.20	65	135
3	AY	Acenaphthylene	7.09		1.97	109	6.50	65	135
3	AE	Acenaphthene	16.9		1.97	91	18.70	65	135
3	F0	Fluorene	76.5		1.97	103	74.60	65	135
3	F1	C1-Fluorenes	185		1.97	109	170.20	65	135
3	F2	C2-Fluorenes	283		1.97	111	255.40	65	135
3	F3	C3-Fluorenes	275		1.97	115	238.50	65	135
3	A0	Anthracene		U	1.97				
3	P0	Phenanthrene	217		1.97	102	212.20	65	135
3	PA1	C1-Phenanthrenes/Anthracenes	489		1.97	113	432.70	65	135
3	PA2	C2-Phenanthrenes/Anthracenes	568		1.97	122	465.90	65	135
3	PA3	C3-Phenanthrenes/Anthracenes	394		1.97	124	317.40	65	135
3	PA4	C4-Phenanthrenes/Anthracenes	172		1.97	133	129.00	65	135
3	RET	Retene		U	1.97				
3	DBT0	Dibenzothiophene	149		1.97	107	138.90	65	135
3	DBT1	C1-Dibenzothiophenes	335		1.97	120	278.60	65	135
3	DBT2	C2-Dibenzothiophenes	476		1.97	126	377.50	65	135
3	DBT3	C3-Dibenzothiophenes	443		1.97	130	341.40	65	135
3	DBT4	C4-Dibenzothiophenes	240		1.97	131	183.40	65	135
4	BF	Benzo(b)fluorene	5.95		1.97				
4	FL0	Fluoranthene	4.24		1.97	106	4.00	65	135
4	PY0	Pyrene	11.3		1.97	87	13.00	65	135
4	FP1	C1-Fluoranthenes/Pyrenes	69.1		1.97	109	63.10	65	135
4	FP2	C2-Fluoranthenes/Pyrenes	116		1.97	114	102.20	65	135
4	FP3	C3-Fluoranthenes/Pyrenes	135		1.97	113	119.60	65	135
4	FP4	C4-Fluoranthenes/Pyrenes	119		1.97	114	104.00	65	135
4	NBT0	Naphthobenzothiophenes	43.1		1.97	98	43.80	65	135
4	NBT1	C1-Naphthobenzothiophenes	115		1.97	98	117.20	65	135
4	NBT2	C2-Naphthobenzothiophenes	163		1.97	100	163.30	65	135
4	NBT3	C3-Naphthobenzothiophenes	129		1.97	100	128.70	65	135
4	NBT4	C4-Naphthobenzothiophenes	93.8		1.97	105	89.00	65	135
4	BA0	Benz[a]anthracene	2.06		1.97	98	2.10	65	135
4	C0	Chrysene/Triphenylene	39.6		1.97	112	35.20	65	135
4	BC1	C1-Chrysenes	68.3		1.97	109	62.80	65	135
4	BC2	C2-Chrysenes	98.1		1.97	114	86.00	65	135
4	BC3	C3-Chrysenes	102		1.97	104	97.60	65	135
4	BC4	C4-Chrysenes	64.0		1.97	108	59.40	65	135
5	BBF	Benzo[b]fluoranthene	5.10		1.97	98	5.20	65	135
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.417	J	1.97				
5	BAF	Benzo[a]fluoranthene		U	1.97				
5	BEP	Benzo[e]pyrene	10.7		1.97	109	9.80	65	135
5	BAP	Benzo[a]pyrene	1.62	J	1.97	86	1.90	65	135
5	PER	Perylene	2.82		1.97	101	2.80	65	135
6	IND	Indeno[1,2,3-cd]pyrene	0.550	J	1.97				
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.861	J	1.97				
6	GHI	Benzo[g,h,i]perylene	3.16		1.97	102	3.10	65	135
	CAR	Carbazole	5.35		1.97	89	6.00	65	135
3	4MDT	4-Methyldibenzothiophene	158		1.97	120	131.80	65	135
3	2MDT	2/3-Methyldibenzothiophene	123		1.97	126	97.50	65	135
3	1MDT	1-Methyldibenzothiophene	50.4		1.97	114	44.20	65	135
3	3MP	3-Methylphenanthrene	103		1.97	115	89.40	65	135
3	2MP	2-Methylphenanthrene	108		1.97	111	97.70	65	135
3	2MA	2-Methylanthracene	3.47		1.97	108	3.20	65	135
3	9MP	9/4-Methylphenanthrene	162		1.97	115	141.20	65	135
3	1MP	1-Methylphenanthrene	106		1.97	109	97.40	65	135

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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

		Client ID	MW-56 (091213)			MW-55 (091213)			MW-37 (091213)	
		Lab ID	1310009-01			1310009-02			1310009-03	
		Matrix	NAPL			NAPL			NAPL	
		Reference Method	Modified 8270D			Modified 8270D			Modified 8270D	
		Batch ID	SO100413B03			SO100413B03			SO100413B03	
		Date Collected	09/12/2013			09/12/2013			09/12/2013	
		Date Received	09/19/2013			09/19/2013			09/19/2013	
		Date Prepped	09/24/2013			09/24/2013			09/24/2013	
		Date Analyzed	10/05/2013			10/05/2013			10/05/2013	
		Sample Size (wet)	0.1007			0.1014			0.1004	
		% Solid	100.00			100.00			100.00	
		File ID	d32783.D			d32785.D			d32787.D	
		Units	mg/Kg			mg/Kg			mg/Kg	
		Final Volume	20			20			20	
		Dilution	1			1			1	
		Reporting Limit	1.99			1.97			1.99	
Class	Abbrev	Analytes	Result		SSRL	Result		SSRL	Result		SSRL
2	D0	cis/trans-Decalin	876		1.99	786		1.97	603		1.99
2	D1	C1-Decalins	1970		1.99	1790		1.97	1440		1.99
2	D2	C2-Decalins	2220		1.99	2090		1.97	1790		1.99
2	D3	C3-Decalins	1540		1.99	1490		1.97	1340		1.99
2	D4	C4-Decalins	2370		1.99	2200		1.97	2300		1.99
2	BT0	Benzothiophene	24.8		1.99	3.26		1.97		U	1.99
2	BT1	C1-Benzo(b)thiophenes	516		1.99	434		1.97	355		1.99
2	BT2	C2-Benzo(b)thiophenes	716		1.99	637		1.97	587		1.99
2	BT3	C3-Benzo(b)thiophenes	860		1.99	821		1.97	708		1.99
2	BT4	C4-Benzo(b)thiophenes	580		1.99	586		1.97	492		1.99
2	N0	Naphthalene	665		1.99	57.5		1.97	40.4		1.99
2	N1	C1-Naphthalenes	6860	D	3.97	6100	D	3.94	1970		1.99
2	N2	C2-Naphthalenes	13900	D	3.97	13800	D	3.94	12400	D	3.98
2	N3	C3-Naphthalenes	13200		1.99	12500		1.97	12400		1.99
2	N4	C4-Naphthalenes	6870		1.99	6730		1.97	6840		1.99
2	B	Biphenyl	5.32		1.99	3.65		1.97	4.41		1.99
3	DF	Dibenzofuran	280		1.99	231		1.97	219		1.99
3	AY	Acenaphthylene	35.0		1.99	33.4		1.97	30.1		1.99
3	AE	Acenaphthene	460		1.99	418		1.97	398		1.99
3	F0	Fluorene	665		1.99	576		1.97	517		1.99
3	F1	C1-Fluorenes	1680		1.99	1530		1.97	1560		1.99
3	F2	C2-Fluorenes	2550		1.99	2490		1.97	2460		1.99
3	F3	C3-Fluorenes	1580		1.99	1620		1.97	1480		1.99
3	A0	Anthracene	139		1.99	135		1.97	135		1.99
3	P0	Phenanthrene	1640		1.99	1460		1.97	1320		1.99
3	PA1	C1-Phenanthrenes/Anthracenes	3400		1.99	3240		1.97	2910		1.99
3	PA2	C2-Phenanthrenes/Anthracenes	2580		1.99	2690		1.97	2240		1.99
3	PA3	C3-Phenanthrenes/Anthracenes	907		1.99	1050		1.97	794		1.99
3	PA4	C4-Phenanthrenes/Anthracenes	231		1.99	278		1.97	196		1.99
3	RET	Retene		U	1.99		U	1.97		U	1.99
3	DBT0	Dibenzothiophene	429		1.99	391		1.97	298		1.99
3	DBT1	C1-Dibenzothiophenes	1260		1.99	1220		1.97	1000		1.99
3	DBT2	C2-Dibenzothiophenes	1460		1.99	1510		1.97	1170		1.99
3	DBT3	C3-Dibenzothiophenes	741		1.99	844		1.97	589		1.99
3	DBT4	C4-Dibenzothiophenes	240		1.99	293		1.97	193		1.99
4	BF	Benzo(b)fluorene	7.08		1.99	9.11		1.97	5.57		1.99
4	FL0	Fluoranthene	28.1		1.99	42.1		1.97	21.0		1.99
4	PY0	Pyrene	76.8		1.99	90.6		1.97	60.5		1.99
4	FP1	C1-Fluoranthenes/Pyrenes	115		1.99	131		1.97	92.6		1.99
4	FP2	C2-Fluoranthenes/Pyrenes	72.1		1.99	85.4		1.97	60.5		1.99
4	FP3	C3-Fluoranthenes/Pyrenes	34.4		1.99	43.1		1.97	30.2		1.99
4	FP4	C4-Fluoranthenes/Pyrenes	11.5		1.99	15.0		1.97	11.4		1.99
4	NBT0	Naphthobenzothiophenes	5.25		1.99	6.64		1.97	3.64		1.99
4	NBT1	C1-Naphthobenzothiophenes	8.36		1.99	10.0		1.97	5.62		1.99
4	NBT2	C2-Naphthobenzothiophenes	6.74		1.99	9.21		1.97	4.32		1.99
4	NBT3	C3-Naphthobenzothiophenes	3.76		1.99	4.91		1.97	2.86		1.99
4	NBT4	C4-Naphthobenzothiophenes		U	1.99	3.25		1.97		U	1.99
4	BA0	Benz[a]anthracene	2.52		1.99	6.66		1.97	2.24		1.99
4	C0	Chrysene/Triphenylene	5.90		1.99	9.79		1.97	4.66		1.99
4	BC1	C1-Chrysenes	10.2		1.99	13.7		1.97	8.33		1.99
4	BC2	C2-Chrysenes	9.20		1.99	12.2		1.97	9.20		1.99
4	BC3	C3-Chrysenes	10.2		1.99	12.3		1.97	11.0		1.99
4	BC4	C4-Chrysenes		U	1.99		U	1.97		U	1.99
5	BBF	Benzo[b]fluoranthene	0.997	J	1.99	3.71		1.97	1.00	J	1.99
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	0.722	J	1.99	2.94		1.97	0.611	J	1.99
5	BAF	Benzo[a]fluoranthene	0.160	J	1.99	0.529	J	1.97	0.160	J	1.99
5	BEP	Benzo[e]pyrene	0.897	J	1.99	2.75		1.97	0.982	J	1.99
5	BAP	Benzo[a]pyrene	0.860	J	1.99	2.91		1.97	0.825	J	1.99
5	PER	Perylene	0.323	J	1.99	0.923	J	1.97	0.338	J	1.99
6	IND	Indeno[1,2,3-cd]pyrene	0.467	J	1.99	1.59	J	1.97	0.442	J	1.99
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	0.178	J	1.99	0.501	J	1.97	0.132	J	1.99
6	GHI	Benzo[g,h,i]perylene	0.534	J	1.99	1.54	J	1.97	0.685	J	1.99
	CAR	Carbazole	14.9		1.99	12.0		1.97	12.8		1.99
3	4MDT	4-Methyldibenzothiophene	652		1.99	635		1.97	518		1.99
3	2MDT	2/3-Methyldibenzothiophene	468		1.99	454		1.97	363		1.99
3	1MDT	1-Methyldibenzothiophene	86.2		1.99	83.5		1.97	67.7		1.99
3	3MP	3-Methylphenanthrene	1060		1.99	1000		1.97	888		1.99
3	2MP	2-Methylphenanthrene	1180		1.99	1120		1.97	996		1.99
3	2MA	2-Methylanthracene	103		1.99	93.1		1.97	90.0		1.99
3	9MP	9/4-Methylphenanthrene	625		1.99	592		1.97	548		1.99
3	1MP	1-Methylphenanthrene	423		1.99	407		1.97	367		1.99
		Surrogates (% Recovery)									
		Naphthalene-d8	86			81			79		
		Phenanthrene-d10	99			94			95		

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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

		Client ID	MW-56 (091213)		MW-55 (091213)		MW-37 (091213)	
		Lab ID	1310009-01		1310009-02		1310009-03	
		Matrix	NAPL		NAPL		NAPL	
		Reference Method	Modified 8270D		Modified 8270D		Modified 8270D	
		Batch ID	SO100413B03		SO100413B03		SO100413B03	
		Date Collected	09/12/2013		09/12/2013		09/12/2013	
		Date Received	09/19/2013		09/19/2013		09/19/2013	
		Date Prepped	09/24/2013		09/24/2013		09/24/2013	
		Date Analyzed	10/05/2013		10/05/2013		10/05/2013	
		Sample Size (wet)	0.1007		0.1014		0.1004	
		% Solid	100.00		100.00		100.00	
		File ID	d32783.D		d32785.D		d32787.D	
		Units	mg/Kg		mg/Kg		mg/Kg	
		Final Volume	20		20		20	
		Dilution	1		1		1	
		Reporting Limit	1.99		1.97		1.99	
Class	Abbrev	Analytes	Result	SSRL	Result	SSRL	Result	SSRL
		Benzo[a]pyrene-d12	111		109		110	

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

Client ID	MW-49 (091213)	MW-70 (091213)
Lab ID	1310009-04	1310009-05
Matrix	NAPL	NAPL
Reference Method	Modified 8270D	Modified 8270D
Batch ID	SO100413B03	SO100413B03
Date Collected	09/12/2013	09/12/2013
Date Received	09/19/2013	09/19/2013
Date Prepped	09/24/2013	09/24/2013
Date Analyzed	10/05/2013	10/05/2013
Sample Size (wet)	0.1055	0.1006
% Solid	100.00	100.00
File ID	d32789.D	d32791.D
Units	mg/Kg	mg/Kg
Final Volume	20	20
Dilution	1	1
Reporting Limit	1.90	1.99

Class	Abbrev	Analytes	Result		SSRL	Result		SSRL
2	D0	cis/trans-Decalin	733		1.90	1180		1.99
2	D1	C1-Decalins	1830		1.90	2730		1.99
2	D2	C2-Decalins	2310		1.90	4180		1.99
2	D3	C3-Decalins	1670		1.90	2550		1.99
2	D4	C4-Decalins	2250		1.90	2550		1.99
2	BT0	Benzothiophene		U	1.90	25.0		1.99
2	BT1	C1-Benzo(b)thiophenes	265		1.90	164		1.99
2	BT2	C2-Benzo(b)thiophenes	403		1.90	93.6		1.99
2	BT3	C3-Benzo(b)thiophenes	627		1.90	192		1.99
2	BT4	C4-Benzo(b)thiophenes	480		1.90	175		1.99
2	N0	Naphthalene	44.2		1.90	102		1.99
2	N1	C1-Naphthalenes	27.1	G	1.90	241		1.99
2	N2	C2-Naphthalenes	12400	D	3.79	1130		1.99
2	N3	C3-Naphthalenes	11100		1.90	2340		1.99
2	N4	C4-Naphthalenes	6230		1.90	2220		1.99
2	B	Biphenyl	3.94		1.90	91.4		1.99
3	DF	Dibenzofuran	188		1.90	15.0		1.99
3	AY	Acenaphthylene	34.3		1.90	9.79		1.99
3	AE	Acenaphthene	400		1.90	67.6		1.99
3	F0	Fluorene	565		1.90	81.6		1.99
3	F1	C1-Fluorenes	1400		1.90	365		1.99
3	F2	C2-Fluorenes	2510		1.90	923		1.99
3	F3	C3-Fluorenes	1950		1.90	958		1.99
3	A0	Anthracene	140		1.90	37.0		1.99
3	P0	Phenanthrene	1230		1.90	72.8		1.99
3	PA1	C1-Phenanthrenes/Anthracenes	3030		1.90	421		1.99
3	PA2	C2-Phenanthrenes/Anthracenes	3110		1.90	843		1.99
3	PA3	C3-Phenanthrenes/Anthracenes	1450		1.90	597		1.99
3	PA4	C4-Phenanthrenes/Anthracenes	458		1.90	237		1.99
3	RET	Retene		U	1.90		U	1.99
3	DBT0	Dibenzothiophene	31.7		1.90	17.4		1.99
3	DBT1	C1-Dibenzothiophenes	1050		1.90	205		1.99
3	DBT2	C2-Dibenzothiophenes	1520		1.90	358		1.99
3	DBT3	C3-Dibenzothiophenes	1020		1.90	300		1.99
3	DBT4	C4-Dibenzothiophenes	402		1.90	144		1.99
4	BF	Benzo(b)fluorene	20.0		1.90	4.10		1.99
4	FL0	Fluoranthene	144		1.90	22.4		1.99
4	PY0	Pyrene	224		1.90	125		1.99
4	FP1	C1-Fluoranthenes/Pyrenes	242		1.90	206		1.99
4	FP2	C2-Fluoranthenes/Pyrenes	158		1.90	163		1.99
4	FP3	C3-Fluoranthenes/Pyrenes	84.9		1.90	79.6		1.99
4	FP4	C4-Fluoranthenes/Pyrenes	31.3		1.90	27.4		1.99
4	NBT0	Naphthobenzothiophenes	13.2		1.90	3.66		1.99
4	NBT1	C1-Naphthobenzothiophenes	17.1		1.90	6.66		1.99
4	NBT2	C2-Naphthobenzothiophenes	15.2		1.90	5.34		1.99
4	NBT3	C3-Naphthobenzothiophenes	8.24		1.90	3.65		1.99
4	NBT4	C4-Naphthobenzothiophenes	5.90		1.90		U	1.99
4	BA0	Benz[a]anthracene	25.5		1.90	4.08		1.99
4	C0	Chrysene/Triphenylene	28.8		1.90	5.93		1.99
4	BC1	C1-Chrysenes	27.2		1.90	12.1		1.99
4	BC2	C2-Chrysenes	22.9		1.90	15.4		1.99
4	BC3	C3-Chrysenes	18.8		1.90	18.9		1.99
4	BC4	C4-Chrysenes		U	1.90		U	1.99
5	BBF	Benzo[b]fluoranthene	14.1		1.90	3.98		1.99
5	BJKF	Benzo[j]fluoranthene/Benzo[k]fluoranthene	11.5		1.90	2.81		1.99
5	BAF	Benzo[a]fluoranthene	2.26		1.90	0.808	J	1.99
5	BEP	Benzo[e]pyrene	8.96		1.90	3.74		1.99
5	BAP	Benzo[a]pyrene	10.5		1.90	3.55		1.99
5	PER	Perylene	2.80		1.90	0.842	J	1.99
6	IND	Indeno[1,2,3-cd]pyrene	4.78		1.90	2.48		1.99
6	DA	Dibenz[ah]anthracene/Dibenz[ac]anthracene	1.37	J	1.90	0.511	J	1.99
6	GHI	Benzo[g,h,i]perylene	4.20		1.90	2.79		1.99
	CAR	Carbazole	11.8		1.90	8.47		1.99
3	4MDT	4-Methyldibenzothiophene	546		1.90	105		1.99
3	2MDT	2/3-Methyldibenzothiophene	380		1.90	68.2		1.99
3	1MDT	1-Methyldibenzothiophene	83.1		1.90	18.0		1.99
3	3MP	3-Methylphenanthrene	897		1.90	116		1.99
3	2MP	2-Methylphenanthrene	1020		1.90	113		1.99
3	2MA	2-Methylanthracene	87.2		1.90	22.8		1.99
3	9MP	9/4-Methylphenanthrene	588		1.90	83.0		1.99
3	1MP	1-Methylphenanthrene	409		1.90	67.1		1.99

Surrogates (% Recovery)		
Naphthalene-d8	82	91
Phenanthrene-d10	97	105

NewFields
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Project Name: CSXT-Arcadis-Brunswick Rail Yard
Project Number:

		Client ID	MW-49 (091213)		MW-70 (091213)	
		Lab ID	1310009-04		1310009-05	
		Matrix	NAPL		NAPL	
		Reference Method	Modified 8270D		Modified 8270D	
		Batch ID	SO100413B03		SO100413B03	
		Date Collected	09/12/2013		09/12/2013	
		Date Received	09/19/2013		09/19/2013	
		Date Prepped	09/24/2013		09/24/2013	
		Date Analyzed	10/05/2013		10/05/2013	
		Sample Size (wet)	0.1055		0.1006	
		% Solid	100.00		100.00	
		File ID	d32789.D		d32791.D	
		Units	mg/Kg		mg/Kg	
		Final Volume	20		20	
		Dilution	1		1	
		Reporting Limit	1.90		1.99	
Class	Abbrev	Analytes	Result	SSRL	Result	SSRL
		Benzo[a]pyrene-d12	110		110	

U: The analyte was analyzed for but not detected at the sample specific level reported.
B: Found in associated blank as well as sample.
J: Estimated value, below quantitation limit.
E: Estimated value, exceeds the upper limit of calibration.
NA: Not Applicable
D: Secondary Dilution Performed
D1: Tertiary Dilution Performed
[a]: Value outside of QC Limits.
§: Surrogate value outside of acceptable range.
X: It is not possible to calculate RPD, one result is below the detection limit, the other is above reporting limit.
G: Matrix Interference.
P: Greater than 40% RPD between the two columns, the higher value is reported according to the method.
I: Due to interference, the lower value is reported.
N: Spike recovery outside control limits.
E: Estimated due to Interference. (Metals)
¤: Duplicate outside control limits.
P: Spike compound. (Metals)
J: Below CRDL, Project DL, or RL but greater than or equal to MDL
C: Sample concentration is > 4 times the spike level, recovery limits do not apply. (Metals)
S: Spike Compound. (Organics)
§: RPD criteria not applicable to results less than 5 times the reporting limit. (Metals)
T: Tentatively identified corexit compound.
C: Co-elution.
Z: Result not surrogate corrected.
DL: Surrogate result diluted out of sample.
W: Matrix interference may be present based on chemical reasonableness evaluation.

Triton Analytics Corp.
16840 Barker Springs, #302
Houston, TX 77084
(281) 578-2289

TAC Reference: 8297
Requested By: Ted Healey/NewFields
Project Reference: Arcadis CSX Brunswick Rail Yard
Date: 10/17/2013

Certificate of Analysis

Sample ID	Sulfur by ASTM D5453 %wt
L1318627-01 MW-56 (9/12/13) 1305	0.264
L1318627-02 MW-55 (9/12/13) 1355	0.288
L1318627-03 MW-37 (9/12/13) 1430	0.220
L1318627-04 MW-49 (9/12/13) 1630	0.297
L1318627-05 MW-70 (9/16/13) 1315	728 ppm

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Appendix G

NPS MW-18 Boring Log and Construction Log

Sample Log

Well/Boring NPS MW-18 **Project Name and No.** CSXT Brunswick / MD000843.0010.00004

Site Location Brunswick, MD **Drilling Started** 6/24/2013 (1030) **Drilling Completed** 6/24/13 (1350)

Total Depth Drilled 15 feet **Hole Diameter** 10 inches **Sampling Interval** continuous feet

Length and Diameter of Sampling Device 26' / 2" **Type of Sampling Device** split spoon

Drilling Method HSA **Drilling Fluid Used** –

Drilling Contractor DTCI **Driller** Bob Atkinson **Helper** Tom

Prepared By K. Moran **Hammer Weight** 140 lb **Hammer Drop** 30 inches

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample Description	PID (ppm)
0	2	0.5	4,5,4,4	SOIL: Loose brown/black sandy soil with organic material, roots	5.4
2	4	0.3	3,1,1,1	SAA, few gravels	
4	6	2	2,2,2,2,	4.0-4.25: black/brown sandy soil with organics - SATURATED	11.4, 0, 0, 0
				4.3-6.0: brown silty clay with specks of orange clay, little sand. Medium plasticity. MOIST	
6	8	1.5	5,5,7,8	6.5-7.0: soft brown clay. WET	6, 0, 1, 7
				7.0-8.0: very stiff brown clay with a few orange specs. LITTLE MOISTURE.	
8	10	2.2	6,7,8,10	8.0-8.5: soft brown silty clay, little sand. WET	35, 11.7, 15, 27
				8.5-10.0: Hard, stiff red-brown clay. Very resistant to penetration. LITTLE MOISTURE.	
10	12	2.1	4,5,7,7	10.0-12.0: Very stiff red-brown clay. LITTLE MOISTURE	27, 32, 21, 27
12	14	2.2	7,8,10,12	12.0-14.0: SAA	0, 23, 12, 0
14	15	1.25	8,9	14.0-15.0: SAA	22, 0
SOIL SAMPLES COLLECTED FROM 8.0-8.5 (VOCS) AND 8.0-9.0 (TPH-GRO, TPH-DRO/ORO)					

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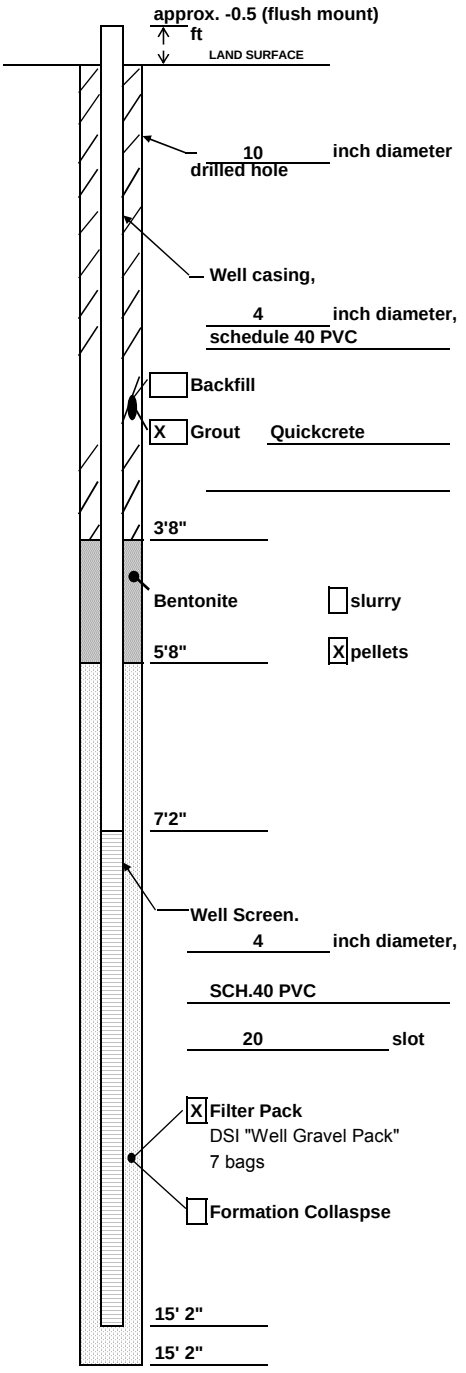
Well Construction Log

(Unconsolidated)



* Depth Below Land Surface

Project Name and No. CSX Brunswick, MD000843.0010.00004

Well NPS MW-18 **Town/City** Brunswick

County Frederick **State** MD

Permit No. FR-95-1966

Land-Surface Elevation and Datum:

____ feet ☐ Surveyed ☐ Estimated

Installation Date(s) 6/24/2013

Drilling Method HSA

Drilling Contractor DTCI

Drilling Fluid N/A

Development Technique(s) and Date(s)

Fluid Loss During Drilling 0 gallons

Water Removed During Development ____ gallons

Static Depth to Water 1.95 feet below M.P.**

Pumping Depth to Water ____ feet below M.P.**

Pumping Duration ____ mins

Yield ____ gpm **Date** ____

Specific Capacity ____ gpm/ft

Well Purpose Monitoring Well

Remarks ____

Prepared by K. Moran

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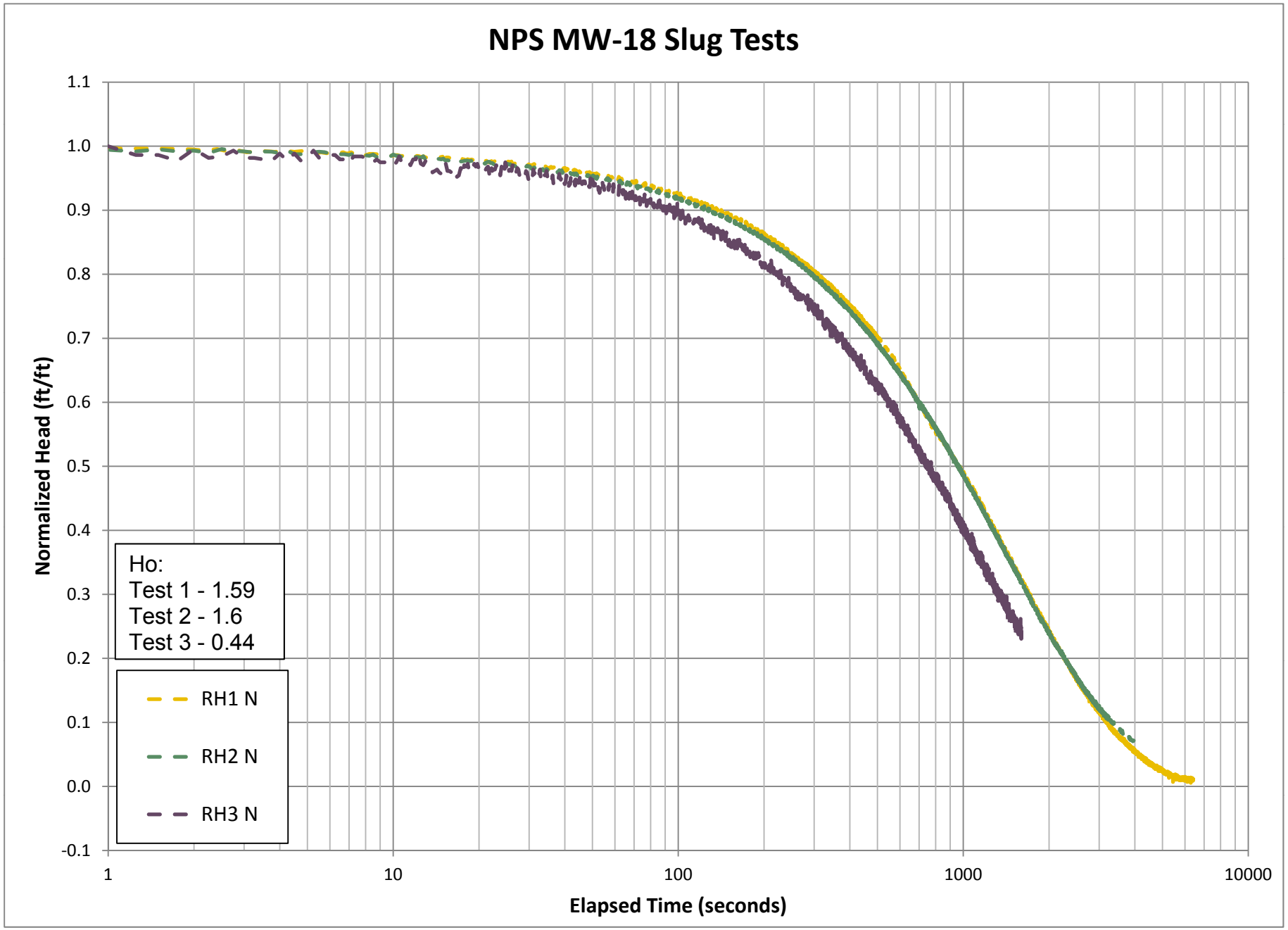
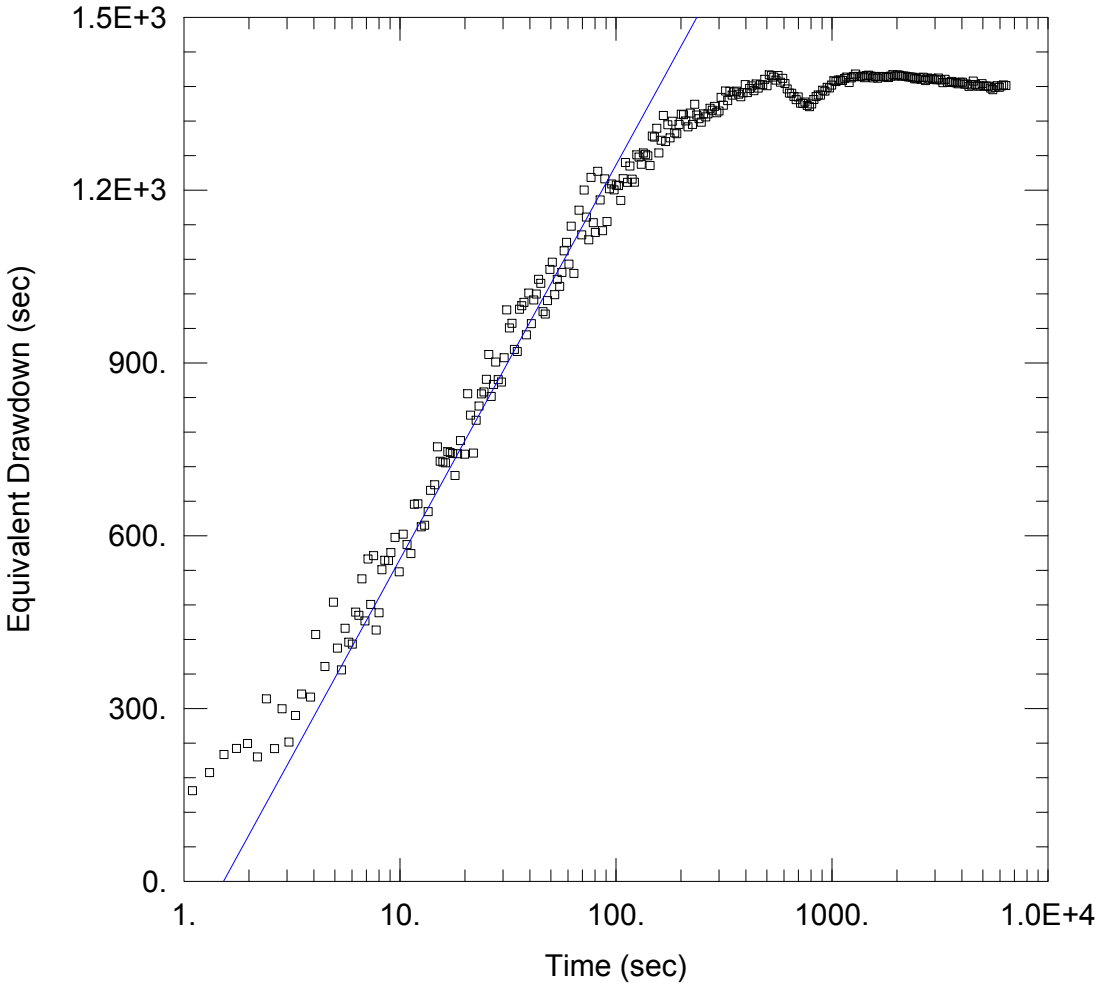
Appendix H

NPS MW-18 Slug Test Results


NPS MW-18 Slug Tests
Normalized Head (ft/ft)
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
1
10
100
1000
10000
Elapsed Time (seconds)
Ho:
Test 1 - 1.59
Test 2 - 1.6
Test 3 - 0.44
RH1 N
RH2 N
RH3 N



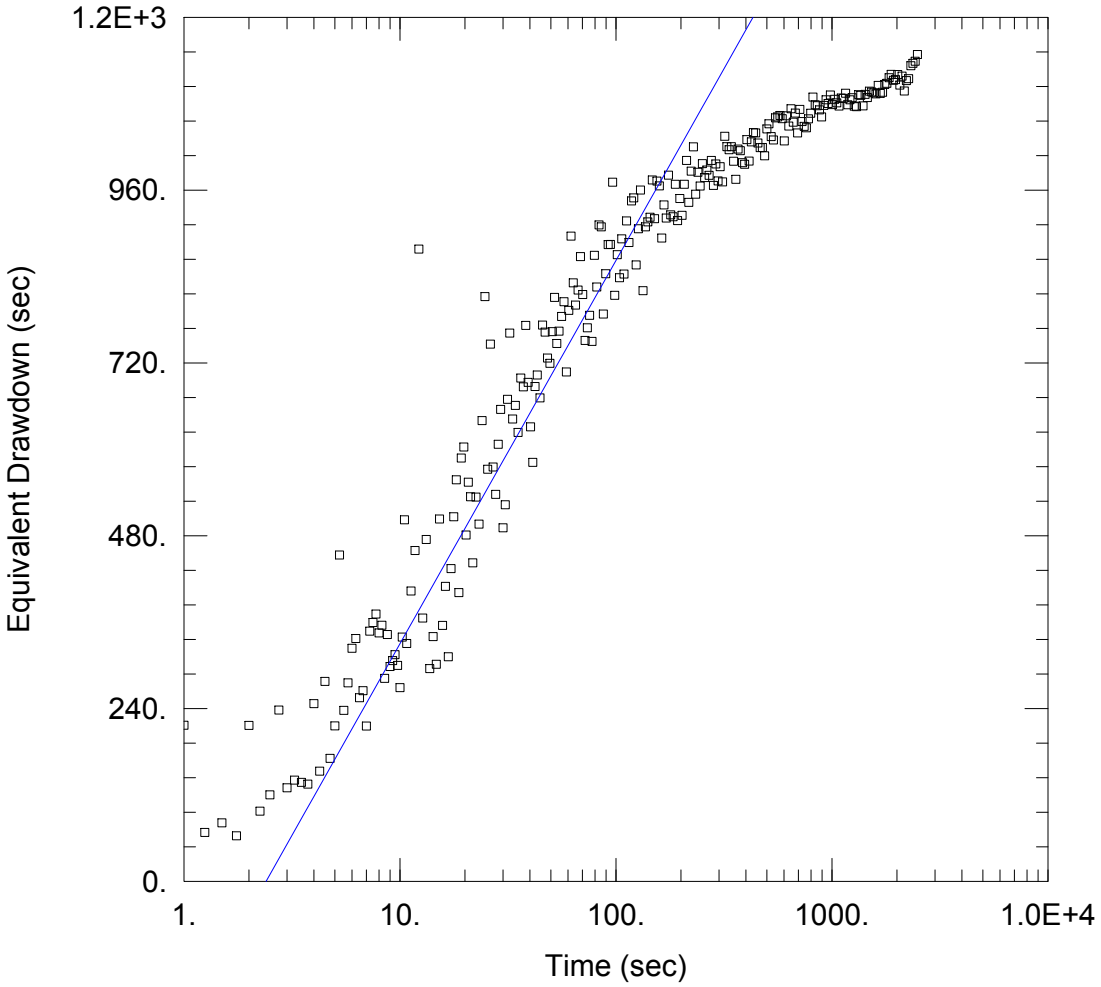
NPS MW-18 RH1

PROJECT INFORMATION

Company: ARCADIS
Client: CSX
Project: MD000843.0011.00003
Location: Brunswick, MD
Test Well: NPS MW-18
Test Date: 7/25/13

SOLUTION

Aquifer Model: Confined
Solution Method: Peres-Onur-Reynolds
T = 2.1 ft^2/day
S = 0.00084



NPS MW-18 RH3

PROJECT INFORMATION

Company: ARCADIS
Client: CSX
Project: MD000843.0011.00003
Location: Brunswick, MD
Test Well: NPS MW-18
Test Date: 7/25/13

SOLUTION

Aquifer Model: Confined
Solution Method: Peres-Onur-Reynolds
T = 2.7 ft^2/day
S = 0.0017