ARCADIS
Infrastructure · Water · Environment · Buildings

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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 - email
J. Hewitt, NPS – email
M. Carter, NPS – email
P. Penoyer, NPS – email
R. Chatrathi, CSXT – PS&E Web
S. Jarvela, USEPA
L. Fischbeck, E&E – email
L. Bohn, FCHD

ENVIRONMENT

From:
Megan E. Kellner

Date:
March 8, 2013

Subject:
Well Installation Summary Report
C&O Canal/CSXT Brunswick Rail Yard, Brunswick, Maryland CSXT Project # 9415381

ARCADIS Project No.:
MD843.11.06

We are sending you:
☒ **Attached** ☐ **Under Separate Cover Via _____ the Following Items:**

☐ Shop Drawings ☐ Plans ☐ Specifications ☐ Change Order
☐ Prints ☐ Samples ☐ Copy of Letter ☒ Reports
☐ Other:

Copies	Date	Drawing No.	Rev.	Description	Action*
1	3/08/13			Well Installation Summary Report	RC

Action*
☐ A Approved ☐ CR Correct and Resubmit ☐ Resubmit _____ Copies
☐ AN Approved As Noted ☐ F File ☐ Return _____ Copies
☐ AS As Requested ☐ FA For Approval ☒ Review and Comment
☐ Other:

Mailing Method
☐ U.S. Postal Service 1st Class ☐ Courier/Hand Delivery ☐ FedEx Priority Overnight ☐ FedEx 2-Day Delivery
☐ Certified/Registered Mail ☐ United Parcel Service (UPS) ☒ FedEx Standard Overnight ☐ FedEx Economy
☐ Other:

Comments: Enclosed is a copy of the Well Installation Summary Report with a copy on CD for the Brunswick Rail Yard, Brunswick, Maryland. Two copies of the report were also delivered to Susan Bull with one electronic copy on CD. A PDF copy of the report was sent via email on March 8, 2013. Please contact me with questions.

Thanks, Megan Kellner

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Imagine the result

CSX Transportation, Inc.

Well Installation Summary Report

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

March 8, 2013

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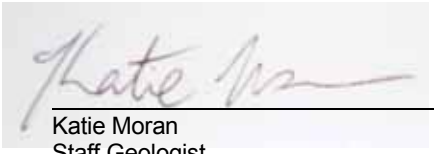
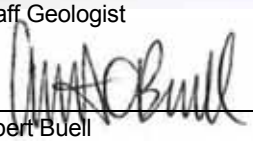
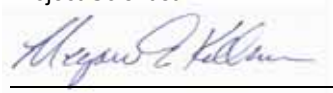


Katie Moran
Staff Geologist



Albert Buell
Project Scientist



Megan E. Kellner, P.G.
Project Manager

Well Installation Summary Report

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

Prepared for:
CSX Transportation, Inc.

Prepared by:
ARCADIS U.S., Inc.
1114 Benfield Boulevard
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Our Ref.:
MD000843.0011.0006

Date:
March 8, 2013

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List of Acronyms and Abbreviations

%	percent
ARCADIS	ARCADIS U.S., Inc.
AST	aboveground storage tank
bgs	below ground surface
C&O	Chesapeake and Ohio
CAP	Corrective Action Plan
CSXT	CSX Transportation, Inc.
FID	Flame Ionization Detector
ft bgs	feet below ground surface
LPH	liquid-phase hydrocarbon
MDE	Maryland Department of the Environment
MW	Monitoring Well
PID	Photoionization Detector
ppm	parts per million
PVC	polyvinyl chloride
the Site	CSXT Brunswick Rail Yard
TPH	total petroleum hydrocarbon
TPH-DRO	diesel range total petroleum hydrocarbons
VOC	volatile organic compound

1. Introduction

On behalf of CSX Transportation, Inc., (CSXT), ARCADIS U.S., Inc. (ARCADIS) has prepared this Well Installation Summary Report for the CSXT Brunswick Rail Yard (the Site) in Brunswick, Maryland, as requested by the Maryland Department of the Environment (MDE) in letter correspondence dated January 15, 2013. Additionally, the January 15, 2013 MDE correspondence documented MDE approval of the Revised Supplemental Investigation Work Plan (SIWP) submitted by ARCADIS on October 12, 2012. The objective of the tasks outlined in the SIWP is to further define the nature and extent of contamination at the Site and to fully characterize potential impacts to the C&O Canal National Historical Park property adjacent to the Site.

This report documents well installation activities completed during January 2013, in accordance with the SIWP. Complete documentation of supplemental investigation activities will be provided in the Supplemental Investigation Report and Revised Site Conceptual Model, to be submitted 45 days following the completion of related field investigation activities. The results of the supplemental investigation activities will be used by MDE to develop an amended Consent Order for the Site.

Liquid Petroleum 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, stated in the Consent Order, is to remove liquid non-aqueous phase diesel fuel related to the aboveground storage tank (AST) system, to the extent practicable as determined by the MDE, so there is no threat of migration, taking into consideration future rewatering of the Chesapeake and Ohio (C&O) canal. The MDE considers sheen on the groundwater measurable to $1/8^{th}$ of an inch, using an interface probe capable of detecting oil and water to 0.01 feet, as meeting this goal. The Consent Order specified a deadline for completing the cleanup in no longer than three years from approval of the Corrective Action Plan (CAP) Addendum, to be extended as reasonably necessary, by mutual agreement of MDE and CSXT, with modification to the Consent Order.

ARCADIS, on behalf of CSXT, submitted a CAP Addendum, per the Consent Order (ARCADIS, 2009), on March 2, 2009 and MDE approved it on May 27, 2009 (MDE, 2009). ARCADIS implemented the CAP Addendum in July 2009 Implementation included installation and operation of pneumatic skimmer pumps and the use of passive skimmers (absorbent socks and product recovery canisters) to facilitate removal of LPH from Site monitoring and extraction wells. Total cumulative recovery (through December 2012) by all methods since system implementation in July 2009 is

682 gallons of LPH, with 533 gallons of LPH recovered via the skimmer pumps. LPH recovery activities are documented in quarterly reports prepared by ARCADIS.

2. Well Installation Summary

Four monitoring wells were installed in January 2013 in accordance with the approved SIWP and MDE correspondence dated September 6, 2012 approving the installation plans. The primary objective for the installation of these additional wells is to further delineate subsurface LPH presence around the turntable and between the two existing MARC 20,000 gallon diesel aboveground storage tanks and the former diesel AST. Well locations were selected based on historical LPH occurrence and are shown on Figure 1.

2.1 Well Installation/Development

A ground penetrating radar survey of the proposed well locations was completed on December 12, 2012 to locate underground utilities prior to drilling. Planned well locations were adjusted as necessary to avoid underground infrastructure present at the Site. The drilling subcontractor, DTCI of Jarrettsville, Maryland, began drilling on January 7, 2013 using a hollow-stem auger. Four monitoring wells, MW-67 through MW-70, were installed between January 7 and January 9, 2013. All wells were constructed of 4-inch polyvinyl chloride (PVC) riser and 4-inch PVC 10-slot screen. Wells MW-67 and MW-69 were screened from 4 to 24 feet bgs; wells MW-68 and MW-70 were screened from 5 to 25 feet bgs. Well construction details for the new wells installed in January 2013 are presented on Table 1. Boring and well construction logs are included in Appendix A. Well completion reports are included in Appendix B.

Auger refusal was encountered at approximately 6 feet bgs during drilling at MW-69. The original borehole was backfilled with materials removed during drilling, and drilling of MW-69 was reinitiated at a location offset five feet to the west from the original location.

The new monitoring wells MW-67 through MW-70 were developed on January 10, 2012 via surging and pumping. Purge water generated during development was containerized and disposed of in the on-site CSX oil/water separator. LPH was not observed in the purge water during well development. Soil cuttings generated during drilling were containerized in 55-gallon drums for off-site disposal.

2.2 Survey

MW-67 through MW-70 were surveyed on March 1, 2013 by KCI Technologies of Fulton, Maryland. The survey included top of casing and ground surface elevations, and horizontal coordinates (northing and easting) at each new well location. Survey data are presented on Table 1. The survey report is included in Appendix B.

2.3 LPH/Water Level Measurements

Water-level measurements were collected at the four new wells on January 11, 2013, prior to comprehensive Site groundwater sampling activities. LPH was not detected. Water levels were also measured at the four new wells on March 1, 2013 during monthly LPH recovery system O&M activities. No LPH was detected in MW-67 through MW-69. However, an LPH thickness of 0.08 ft. was measured at MW-70 on March 1, 2013. Approximately 50 ml of LPH was recovered from the well using an absorbent sock. The occurrence of LPH at MW-70 was reported to MDE and will be monitored during future site visits. Well gauging data for the 4 monitoring wells is included in Table 2.

2.4 Soil Screening Results

Lithology was recorded at each new monitoring well location during drilling. 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 with a Photoionization Detector (PID) and/or Flame Ionization Detector (FID) during logging of the lithology. PID readings ranged from 0 parts per million (ppm) in the surface soils at each boring to a maximum reading of 128.2 ppm, which was observed at boring location MW-68 from 15.0 to 15.5 feet below ground surface (ft bgs). FID readings ranged from 0 ppm to 832 ppm, which was observed at boring location MW-67 from 8.0 to 8.5 ft bgs. Some soil samples were screened using one screening instrument due to intermittent difficulties with ambient air calibration of the FID and PID at the Site. FID and PID screening values are included with well boring logs presented in Appendix A.

2.5 Soil Sampling

Grab soil samples for laboratory analysis were collected from split-spoon samples retrieved at each boring. Two grab soil samples were collected at each new well location. One sample was collected from the soils exhibiting the highest FID/PID

reading during drilling. The second sample was collected immediately above the interpreted water table. Only one sample was collected at MW-70 due to the coincidence of the interpreted water table with the highest local FID reading. 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 volatile organic compounds including fuel oxygenates via USEPA method 8260; and
- SVOCs via USEPA method 8270.

Analytical results are summarized in Table 3. Complete laboratory analytical reports are included as Appendix C. An evaluation of soil analytical results will be included in the Supplemental Investigation Report and Revised Site Conceptual Model, to be submitted within 45 days of the completion of supplemental investigation activities.

3. References

ARCADIS, 2009. Corrective Action Plan Addendum, Dual-Phase Extraction Pilot Test Results, C&O Canal/Brunswick Rail Yard, Brunswick, Maryland, CSXT Project # 9415381, March 2, 2009.

ARCADIS, 2012. Revised Supplemental Investigation Work Plan, C&O Canal/Brunswick Rail Yard, Brunswick, Maryland, CSXT Project # 9415381, October 12, 2012.

Maryland Department of the Environment Waste Management Administration (MDE), 2007. Consent Order, Case No. 94-1379FR, CSXT Maintenance Yard, Brunswick, Maryland. July 18, 2007.

Maryland Department of the Environment Oil Control Program (MDE), 2009. Letter regarding Corrective Action Plan Approval, Case No. 94-1379FR, CSXT Maintenance Yard, Brunswick, Maryland. May 27, 2009.

Maryland Department of the Environment Oil Control Program (MDE), 2013. Letter regarding Revised Supplemental Investigation Work Plan Approval, Case No. 94-1379FR, CSXT Maintenance Yard, Brunswick, Maryland. January 15, 2013.

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Tables

Table 1
Well Construction Details
C and O Canal/Brunswick Rail Yard, Brunswick, Maryland

Well ID	Installation Date	Easting Coordinates (ft)	Northing Coordinates (ft)	Well Diameter (inches)	TOC Elevation (ft amsl)	Ground Surface Elevation (ft amsl)	Depth to Screen (from TOC)	Screen Length (ft)
MW-67	1/7/2013	1135451.6	599539.8	4.0	245.83	246.27	4.0	20
MW-68	1/8/2013	1135646.4	599523.3	4.0	245.09	245.97	5.0	20
MW-69	1/9/2013	1135620.6	599364.7	4.0	244.98	245.82	4.0	20
MW-70	1/9/2013	1135904.4	599399.4	4.0	245.57	246.07	5.0	20

Notes
Horizontal Coordinate Datum NAD 83/91, US Feet; Vertical Elevation Datum NAVD88, US Feet
ft amsl - feet above mean sea level
ft bTOC - feet below top of casing
LPH - Liquid-Phase Hydrocarbons
ND - Non-detect

Table 2
Well Gauging Data
C and O Canal/Brunswick Rail Yard, Brunswick, Maryland

Well ID	Date	TOC Elevation (ft amsl)	Depth to LPH (ft TOC)	Depth to Water (ftTOC)	LPH Thickness (ft)	Groundwater Elavation (ft amsl)
MW-67	1/11/2013	245.83	ND	13.27	ND	232.56
	3/1/2013	245.83	ND	12.84	ND	232.99
MW-68	1/11/2013	245.09	ND	4.68	ND	240.41
	3/1/2013	245.09	ND	4.56	ND	240.53
MW-69	1/11/2013	244.98	ND	12.96	ND	232.02
	3/1/2013	244.98	ND	12.44	ND	232.54
MW-70	1/11/2013	245.57	ND	13.43	ND	232.14
	3/1/2013	245.57	12.97	12.89	0.08	232.74

Notes
Horizontal Coordinate Datum NAD 83/91, US Feet; Vertical Elevation Datum NAVD88, US Feet
ft amsl - feet above mean sea level
ft TOC - feet below top of casing
LPH - Liquid-Phase Hydrocarbons
ND - Non-detect

Table 3
Soil Sampling Results (Detections)
C and O Canal/Brunswick Rail Yard, Brunswick, Maryland

Analysis	Constituent[2]	Units	Location ID	CSXT MW-67	CSXT MW-67	CSXT MW-68	CSXT MW-68	CSXT MW-69	CSXT MW-69	CSXT MW-70
			Sample Date	1/7/2013	1/7/2013	1/8/2013	1/8/2013	1/8/2013	1/8/2013	1/9/2013
			Sample Interval (ft bgs)	8 - 8.5	14.2 - 14.7	11.5 - 12	13.5 - 14	15.5 - 16	16.5 - 17	14.5 - 15
			Secondary Sample Interval (ft bgs)[1]	8 - 9	13.7 - 14.7	11 - 12	13 - 14	15 - 16	16 - 17	14.5 - 15.5
VOCs USEPA Method SW8260B	Benzene, 1-methylethyl	ug/kg		**420**	**1300**	< 220 U	**280**	**47 J**	**44 J**	**420**
	Cyclohexane	ug/kg		**86 J**	**170 J**	< 220 U	< 240 U	< 230 U	< 290 U	**150 J**
	Ethylbenzene	ug/kg		< 220 U	< 240 U	< 220 U	< 240 U	< 230 U	< 290 U	**1300**
	Methylcyclohexane	ug/kg		**620**	**1200**	**540**	**510**	< 230 U	< 290 U	**920**
	Naphthalene	ug/kg		< 220 U	< 240 U	< 220 U	< 240 U	< 230 U	< 290 U	**850**
	Toluene	ug/kg		< 220 U	< 240 U	< 220 U	< 240 U	< 230 U	< 290 U	**760**
	Xylenes, Total	ug/kg		< 450 U	< 470 U	< 440 U	< 480 U	< 470 U	< 580 U	**6100**
SVOCs USEPA Method SW8270D	2,4-Dimethylphenol	ug/kg		< 3800 U	< 3900 U	< 400 U	**360 J**	< 460 U	< 400 U	< 400 U
	2-Methyl naphthalene	ug/kg		< 3800 U	< 3900 U	< 400 U	< 400 U	< 460 U	< 400 U	**150 J**
	Acenaphthene	ug/kg		< 3800 U	< 3900 U	< 400 U	**1500**	< 460 U	< 400 U	< 400 U
	Acetophenone	ug/kg		< 3800 U	< 3900 U	< 400 U	< 400 U	< 460 U	< 400 U	**160 J**
	Fluoranthene	ug/kg		< 3800 U	< 3900 U	**78 J**	**140 J**	< 460 U	< 400 U	< 400 U
	Fluorene	ug/kg		**1300 J**	**5900**	**780**	**1800**	< 460 U	**920**	< 400 U
	Naphthalene	ug/kg		< 3800 U	< 3900 U	< 400 U	< 400 U	< 460 U	< 400 U	**77 J**
	N-Nitrosodiphenylamine	ug/kg		< 3800 U	< 3900 U	**4500**	< 400 U	< 460 U	< 400 U	< 400 U
	Phenanthrene	ug/kg		**3700 J**	**17000**	**2100**	**4600**	**110 J**	**2300**	< 400 U
	Pyrene	ug/kg		< 3800 U	**580 J**	**130 J**	**230 J**	< 460 U	**80 J**	< 400 U
TPH-DRO USEPA Method SW8015B	DRO [C10-C28]	mg/kg		**2300**	**13000**	**2400**	**3800**	**540**	**1600**	**110**
TPH-GRO USEPA Method SW8015B	GRO [C6-C10]	mg/kg		**38**	**55**	**21**	**71**	**25**	**36**	**130**

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 C.

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-DRO - Total Petroleum Hydrocarbons, Diesel Range Organics
TPH-GRO - Total Petroleum Hydrocarbons, Gasoline Range Organics

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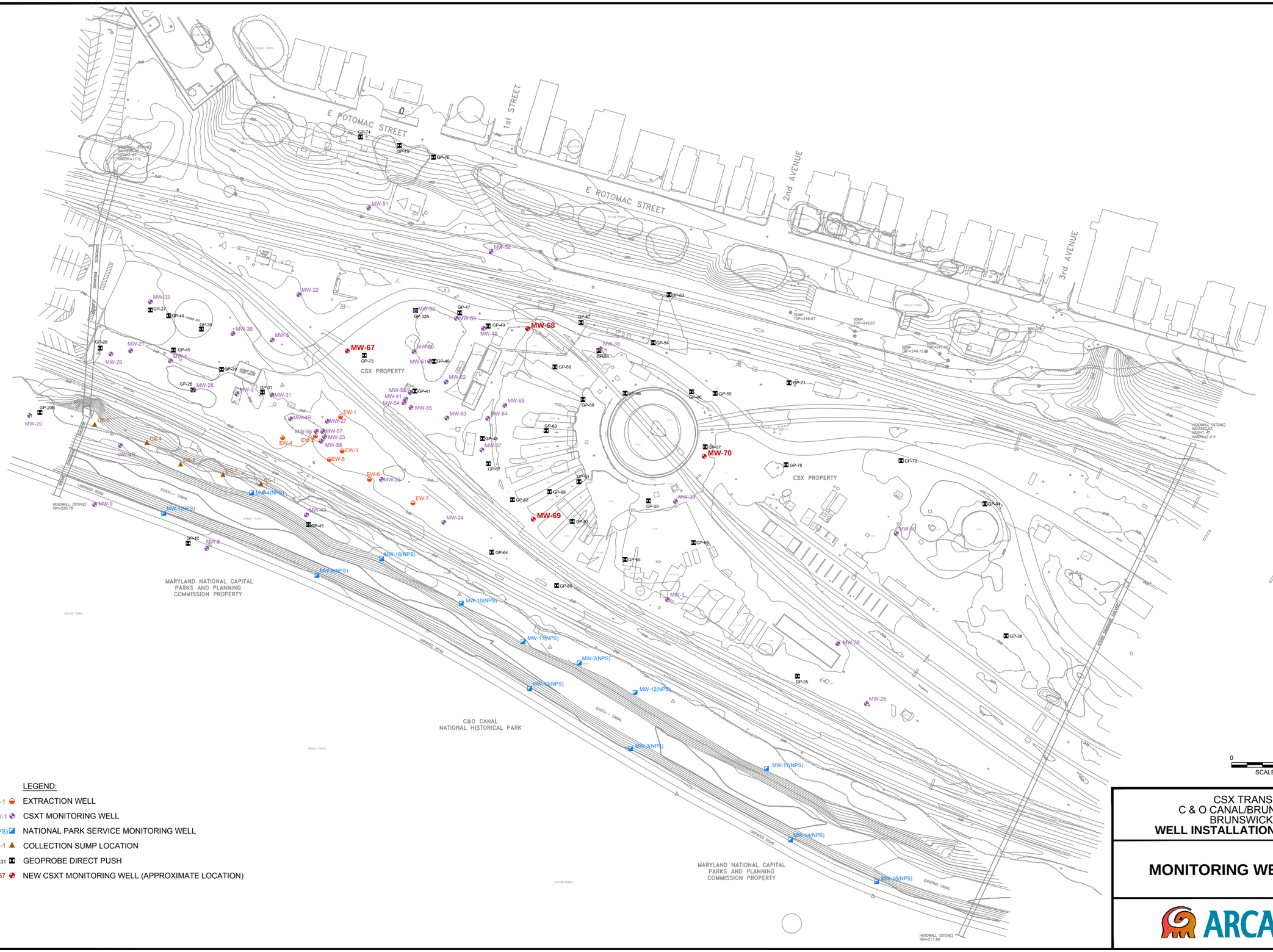
Figures



LEGEND:

- EW-1 EXTRACTION WELL
- MW-1 CSXT MONITORING WELL
- MW-1(NPS) NATIONAL PARK SERVICE MONITORING WELL
- CS-1 COLLECTION SUMP LOCATION
- GP-31 GEOPROBE DIRECT PUSH
- MW-67 NEW CSXT MONITORING WELL (APPROXIMATE LOCATION)

CSX TRANSPORTATION
C & O CANAL/BRUNSWICK RAIL YARD
BRUNSWICK, MARYLAND
WELL INSTALLATION SUMMARY REPORT

MONITORING WELL LOCATIONS

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FIGURE
1

Appendix A

Boring and Well Construction Logs

Sample Log

Well/Borin MW-67 **Project Name and No.** CSXT Brunswick / MD000843.0011.00002

Site Location Brunswick, MD **Drilling Started** 1/7/2013 (1015) **Drilling Completed** 1/7/13 (1320)

Total Depth Drilled 25 feet **Hole Diameter** 10 inches **Sampling Interval** continuous feet

Length and Diameter of Sampling Device 2' / 2" **Type of Sampling Device** split spoon

Drilling Method HSA **Drilling Fluid Used** –

Drilling Contractor DTCI **Driller** Brian Van Doren **Helper** Eric Mitchell

Prepared By S. Kamas / 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)	FID (ppm)
0	2	1.3/2	11, 11, 8, 5	0-1.3: black cinders / gravel, FILL, dry, loose	0.0, 0.0	0.0, 0.0
2	4	1.1/2	4, 4, 4, 5	2.0-3.1: black cinders / gravel, FILL, dry, loose	2.0, 4.4	12.3
4	6	2.0/2	3, 3, 3, 4	4.0-6.0: brown clay, some silt, little gravel, med to high plasticity, slightly moist. Medium stiff, 10 YR 4/2 (dark grayish brown), slight odor	0.3, 10.0, 1.5, 1.0	350, 41, 62
6	8	1.2/2	3, 3, 4, 4	6.0-6.3: SAA	0.4, 0.8, 0.5	307
				6.3-7.2: SAA w/ color change to 10 YR 4/3 (brown)		
8	10	1.3/2	1, 2, 3, 4	8.0-9.3: SAA, moist, odor	10.7, 9.1, 80.9	832, 180, 140
10	12	1.9/2	3, 3, 6, 6	10.0-11.9: SAA, more moisture @ 11.0, gravels from 10.6-10.8 (dry), strong odor 11.0-11.9	17.2, 104.1, 54.1	404, 404, 156
12	14	1.2/2	1, 2, 1, 2	12.0-13.2: SAA, very moist, some gravels @ 13.1	17.5, 57.4, 60.1	145, 118, 287
14	16	1.4/2	2, 2, 4, 5	14.0-14.7: SAA with some gravel	71.8, 37.5, 31.4	109, 148, 48
				14.7-15.4: sandy silt with some clay and gravels (same color), saturated, water table at 14.9		
16	18	1.9/2	2, 2, 3.5	16.0-17.9: SAA, saturated	45.3, 19.6, 30.7	0.8, 29.6, 16.9
18	20	1.3/2	4, 9, 13, 22	18.0-18.5: SAA, saturated	21.6, 27.4	0.7, 62
				18.5-19.3: gravel zone, matrix SAA, saturated		

Sample Log (Continued)

Well/ Boring MW-67 **Project Name and No.** CSXT Brunswick / MD000843

Prepared By SK / KEM

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample Description	PID (ppm)	FID (ppm)
20	22	1.1/2	9, 13, 21, 23	20.0-21.1: silty-sand with gravel, same color, saturated	23.8, 12.5	332, 42
22	24	0.4/2	21, 50/3	slough no recovery. Suspected gravel zone	–	–
24	26	1.2/2	, 19, 29, 50/	24.0-25.2: sand with some silt, clay, gravels, same color, saturated	2.8, 2.9	0.0, 0.0
				END BORING		
	Notes: Soil samples collected from intervals:			(14.2-14.7, 1230)		
				(13.7-14.7, 1230)		
				(8.0-8.5, 1325)		
				(8.0-9.0, 1325)		

Sample Log

Well/Boring MW-68 **Project Name and No.** CSX Brunswick / MD000843.0011.00002

Site Location Brunswick, MD **Drilling Started** 1/8/2013 (0855) **Drilling Completed** 1/8/2013 (1130)

Total Depth Drilled 25 feet **Hole Diameter** 10 inches **Sampling Interval** contiuous feet

Length and Diameter of Sampling Device 2' / 2" **Type of Sampling Device** split spoon

Drilling Method HSA **Drilling Fluid Used** –

Drilling Contractor DTCI **Driller** Brian Van Doren **Helper** Eric Mitchell

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)	FID (ppm)
1	3	2.0/2	2, 21, 1, 11	0-1.0 concrete - used jackhammer to penetrate	0.6, 0.4, 0.2	
				1.0-3.0 black FILL, cinders, gravel		
3	5	1.3/2	1, 1, 1, 2	3.0-3.9 cinders, black: FILL	2.6, 2.3	
				3.9-4.3: coarse sand & small gravels, light gray		
5	7	0.9/2	1, 1, 1, 1	5.0-5.6: clay with little sand and silt, dark brown	5.4, 5.6	
				5.6-5.9: coarse sand, angular, saturated. Water and sample are black with odor		
7	9	2.0/2		7.0-7.8: sand and gravels, black saturated w/ odor, no sheen to liquid	33.6, 19.8, 21.4	78, 79, 91
9	11	0.3/2	3, 3, 3, 4	slough no recovery		
11	13	2.0/2	3, 4, 4, 4	11.0-12.2: silty clay, brown, wet	17.4, 34.5, 89.2	148, 125, 88
				12.2-12.7: coarse sand with silt and clay, little gravel, wet		
				12.7-13.0: silty clay with little sand, brown		
13	15	1.5/2	2, 2, 2, 3	13.0-14.5: sandy silt, brown, saturated	85, 46.4, 19.6	97, 130, 114
				13.6-13.8: stiff red-brown clay, water table @14.0		
15	17	20/2	2, 2, 4, 6	15.0-16.8: sandy silt, brown	128.2, 69.2, 97	137, 140, 130
				16.8- 17.0: silty sand, brown		

Sample Log (Continued)

Well/ Boring MW-68 **Project Name and No.** CSX Brunswick / MD000843.0011.00002

Prepared By K. Moran

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample Description	PID (ppm)	FID (ppm)
17	19	1.5/2	3, 4, 7, 9	17.0-18.1: SAA, saturated	41.5, 122.0, 65.9	79, 98
				18.1-19.5: silty sand with gravels, saturated, brown		
19	21	1.0/2	4, 6, 8, 8	19.0-20.0: SAA, saturated, gravels @ 19.6-19.7	28.5, 100.7	105, 98
21	23	2.0/2	12, 17, 19, 22	21.0-23.0: brown sandy silt, with gravel (some friable), saturated	11.1, 8.5, 6.7	86, 98, 76
23	25	1.1/2	9, 21, 17, 16	23.0-24.1: sandy silt, brown with gravels, saturated	3.7, 5.1	85, 76
				END BORING		
Notes: Soil samples collected from intervals:				(11.5-12.0)		
				(13.5-14.0)		
				(11-12)		
				(13-14)		
FID screening conducted at 1100. Values should be considered qualitative due to high ambient concentration (75 ppm) and out-of-range ambient calibration due to highbackground concentration						

Sample Log

Well/Boring MW-69 **Project Name and No.** CSX Brunswick / MD000843.0011.00002

Site Location Brunswick, MD **Drilling Started** 1/8/2013 (1240) **Drilling Completed** 1/9/2013 (0800)

Total Depth Drilled 24 feet **Hole Diameter** 10 inches **Sampling Interval** continuous feet

Length and Diameter of Sampling Device 2' / 2" **Type of Sampling Device** split spoon

Drilling Method HSA **Drilling Fluid Used** –

Drilling Contractor DTCI **Driller** Brian Van Dorn **Helper** Eric Mitchell

Prepared By Katie Moran **Hammer Weight** 140 lb **Hammer Drop** 30 inches

From	To	Sample Depth (feet below land surface) (feet)	Sample Recovery inches	Time/Hydraulic Pressure or Blows per 6	Sample Description	PID (ppm)	FID (ppm)
0	2	1.5/2	7, 5, 3, 3	0.0-1.5: black cinders with grey and white gravel, FILL, some brick		0.7, 0.8	
				Thin layer of brown sand at 1.3			
2	4	1.0/2	2, 1, 1, 1	2.0-3.0: Black cinders with gravel, FILL		0.6, 0.7	
				Driller reports obtruction at 4'. Auger through obstruction.			
4	6	0.8/2	50/3	4.0-4.6: SAA, FILL. Small piece wood @ 4.6		0.5	
				4.6-4.8: grey & blue sand & gravel, possibly weathered cobble/boulder or concrete			
				Auger through obstruction at 4.8'			
Obstruction at 6' bgs. Offset well location by 5' and resume logging.							
5	7	0.8/2	1, 2, 1, 2	5.0-5.8: clay, dark brown, with little sand. Moist from 5.5-5.8, odor			10
7	9	1.2/2	2, 2, 2, 2	7.0-7.8: silty clay, dark brown, with little sand, soft and wet. Odor			12.3, 14.9
				7.8-8.2: stiff dark brown silty clay. Odor			
9	11	1.6/2	1, 2, 2, 5	SAA, odor. Large gravel (single) at 9.5			11.2, 25, 11
11	13	1.8/2	1, 2, 1, 5	11.0-12.8: dark brown stiff clay, little sand, moist			9.7, 26.9, 10.1
13	15	1.7/2		13.0-14.7: SAA, moist, with thin sand lenses @ 13.5, 14.3, 14.6			8.1, 8.9, 9.7

Sample Log (Continued)

Well/Boring MW-69 **Project Name and No.** CSX Brunswick

Prepared By K. Moran

From	To	Sample Depth (feet below land surface) (feet)	Sample Recovery inches	Time/Hydraulic Pressure or Blows per 6	Sample Description	PID (ppm)	FID (ppm)
15	17	2.0/2	2, 2, 4, 6	15.0-16.8: dark brown sandy silt, moist/wet			18, 97, 34
				16.8-17.0: sand and gravel with some silt, saturated			
				Interpreted water table at 16.8			
17	19	2.0/2	3, 6, 6, 8	17.0-19.0: silt w/ fine sand, dark brown, wet. Sand & gravel zone:17.1-17.4			4.5, 14.1, 10
19	21	1.1/2	4, 6, 8, 13	19.0-19.4: stiff dark brown clay			9.4, 13, 7.8
				19.4-20.1: dark brown, sandy-silt w/ gravels, saturated			
21	23	2.0/2	8, 17, 22, 26	21.0-23.0: SAA w/ few gravels from 21.2-21.6. saturated			7.0, 6.9, 5.8
23	25	2.0/2	17, 21, 26, 29	23.0-25.0: silty sand w/ gravels, dark brown, saturated			7.2, 7.3, 8.7
Notes: PID and FID readings alternate due to malfunction of PID after relocation of borehole and discarding samples from first boring.							
	FID screening of samples conducted at 1550. Ambient PID reading: 0.5 ppm.						
Soil Samples collected at intervals:				(15.5-16.0)			
				(16.5-17.0)			
				(15-16)			
				(16-17)			

ARCADIS

Sample Log

Well/Boring MW-70 **Project Name and No.** CSX Brunswick / MD000843.0011.00002

Site Location Brunswick, MD **Drilling Started** 1/9/2013 (0942) **Drilling Completed** 1/9/2013 (1130)

Total Depth Drilled 25 feet **Hole Diameter** 10 inches **Sampling Interval** continuous

Length and Diameter of Sampling Device 2' / 2" **Type of Sampling Device** split spoon

Drilling Method HSA **Drilling Fluid Used** –

Drilling Contractor DTCI **Driller** Brian Van Doren **Helper** Eric Mitchell

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	FID (ppm)
0	2	1.7/2	7, 5, 4, 4	0.0-1.3: grey and black cinders, sand, gravel: FILL	30, 27, 26
				1.3-1.7: SAA w/ some red-brown clay	
2	4	1.5/2	3, 3, 2, 2	2.0-2.4: SAA	
				2.4-3.5: red-brown clay, moist, with little silt, sand, gravel	30, 29.4, 29
				Thin gravel zone @ 3.1	
4	6	1.4/2	2, 2, 2, 2	4.0-5.4: stiff clay, red-brown, w/ some sand & little gravel	28.9, 28.2, 27.2
6	8	2.0/2	4, 5, 6, 6	6.0-8.0: red-brown sandy-silt w/ some clay & gravel. Moist, little odor	28.5, 27.6, 27.5
				Thin gravel zone @ 7.5	
8	10	0.7/2	3, 3, 4, 5	8.0-8.7: SAA	25.0, 25.0
10	12	0.4/2	5, 6, 6, 5	10.0-10.4: brown silt with some fine sand and clay, vey moist	28.4
12	14	0.4/2	4, 3, 3, 5	12.0-12.4: SAA with few gravels. Saturated	62.2
14	16	1.6/2	1, 1, 1, 2	14.0-15.6: SAA, with odor. Saturated.	96, 114, 40.9
				Gravel zone @ 15.0-15.4	
				Interpreted water table at 15' bgs	

Sample Log (Continued)

Well/Boring MW-70 **Project Name and No.** CSX Brunswick / MD000843.0011.00002

Prepared By K. Moran

Sample Depth (feet below land surface) From	To	Sample Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample Description	FID (ppm)
16	18	1.4/2	2, 2, 4, 4	16.0-17.0: brown silt with little clay and fine sand	37, 58, 25
				17.0-17.4: brown sandy silt with little gravel, strong odor	
18	20	1.5/2	8, 13, 21, 27	18.0-18.4: SAA	
				18.4-19.5: brown sand and gravel with some silt. Saturated, odor.	55, 26, 24.5
20	22	2.0/2	13, 17, 23, 27	20.0-22.0: brown silty sand & gravel, little gravel 20.0-20.6, 21.5-21.8	21.4, 22.9, 24.1
22	24	0.3/2	51/2	22.0-22.3: brown silty sand, coarse-grained	21.5
24	26	1.2/2	27, 17, 16, 16	24.0-24.4: brown coarse sand with silt	15.6, 18.4
				24.4-25.0: brown coarse sand and gravel	
				25.0-25.2: fine sand with some silt, red-brown	
Notes: No PID reading taken due to equipment malfunction. FID screening of samples conducted at 1120.					
	Ambient FID at start: 35 ppm; at end: 21.0 ppm				
	Soil Samples collected at intervals: (14.5-15.0)				
				(14.5-15.5)	

ARCADIS

Appendix B

Well Completion and Survey Reports

DRILLER: REMOVE COPY AND RETAIN FOR YOUR RECORDS. RETURN COUNTY COPY TO COUNTY ENVIRONMENTAL AGENCY. SUBMIT COPY TO OWNER. RETURN ALL OTHER PARTS TO DEPARTMENT OF ENVIRONMENT, 1800 WASHINGTON BOULEVARD • BALTIMORE, MARYLAND 21230

C 1 | 0701 — SEQUENCE NO. (MDE USE ONLY)
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

STATE OF MARYLAND
WELL COMPLETION REPORT
FILL IN THIS FORM COMPLETELY
PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

COUNTY NUMBER

ST/CO USE ONLY
DATE Received MM DD YY

DATE WELL COMPLETED: MM 01 DD 10 YY 13

Depth of Well: 25 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL": FR-95-2140

OWNER CSX

WELL SITE ADDRESS (last name) SOUTH MAPLE AVE (first name) TOWN Brunswick MD

SUBDIVISION _____ SECTION _____ LOT _____

WELL LOG
Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

DESCRIPTION (Use additional sheets if needed)	FEET FROM	FEET TO	check if water bearing
Sand	0	25	8

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED: yes [Y] no [N]

CIRCLE APPROPRIATE LETTER
- A — A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED
- E — ELECTRIC LOG OBTAINED
- P — TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO.: MD 067

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO.: __ __ D __ __ __

SITE SUPERVISOR (sign. of driller or journeyman

GROUTING RECORD
WELL HAS BEEN GROUTED (Circle Appropriate Box): yes [Y] no [N]

TYPE OF GROUTING MATERIAL (Circle one)

CEMENT [C M] BENTONITE CLAY [B C]

NO. OF BAGS _____ NO. OF POUNDS _____

GALLONS OF WATER _____

DEPTH OF GROUT SEAL (to nearest foot)

from 0 (TOP) ft. to 3 (BOTTOM) ft.

(enter 0 if from surface)

CASING RECORD
casing types insert appropriate code below

[S T] STEEL [C O] CONCRETE [P L] PLASTIC [O T] OTHER

MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch)!	Total depth of main casing (nearest foot)
PL	4	5

OTHER CASING (if used) — EACH CASING

diameter inch	depth (feet) from	to

SCREEN RECORD
screen type or open hole — insert appropriate code below

[S T] STEEL [B R] BRASS [H O] OPEN HOLE [B Z] BRONZE [P L] PLASTIC [O T] OTHER

C 2

	DEPTH (nearest ft.)	
1 PL	5	25
2		
3		

EACH SCREEN

SLOT SIZE 1 .020 2 _____ 3 _____

DIAMETER OF SCREEN 4 (NEAREST INCH)

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68	from	to
	3	25

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)
T (E.R.O.S.) W Q

C 3

PUMPING TEST
HOURS PUMPED (nearest hour): 1

PUMPING RATE (gal. per min.): .5

METHOD USED TO MEASURE PUMPING RATE: Bucket

WATER LEVEL (distance from land surface)

BEFORE PUMPING: 8 ft.

WHEN PUMPING: 12 ft.

TYPE OF PUMP USED (for test)
- [A] air
- [P] piston
- [T] turbine
- [C] centrifugal
- [R] rotary
- [O] other (describe below)
- [J] jet
- [S] submersible

PUMP INSTALLED
DRILLER INSTALLED PUMP (CIRCLE) (YES or NO): YES NO

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.

TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29.

CAPACITY: GALLONS PER MINUTE (to nearest gallon)

PUMP HORSE POWER

PUMP COLUMN LENGTH (nearest ft.)

CASING HEIGHT (circle appropriate box and enter casing height)
- [+] above LAND SURFACE
- [−] below

(nearest) foot

LATITUDE 39.310874

LONGITUDE 77.623453

(DEFAULT COORD. WGS 84)

NOTES:

MW-70

DRILLER: REMOVE COPY AND RETAIN FOR YOUR RECORDS. RETURN COUNTY COPY TO COUNTY ENVIRONMENTAL AGENCY. SUBMIT COPY TO OWNER. RETURN ALL OTHER PARTS TO DEPARTMENT OF ENVIRONMENT, 1800 WASHINGTON BOULEVARD • BALTIMORE, MARYLAND 21230

C 1 | 0702 | SEQUENCE NO. (MDE USE ONLY)

1 2 3 6 (THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

STATE OF MARYLAND
WELL COMPLETION REPORT
FILL IN THIS FORM COMPLETELY
PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

COUNTY NUMBER

ST/CO USE ONLY
DATE Received MM DD YY
8 13

DATE WELL COMPLETED MM 01 DD 09 YY 13
15 20

Depth of Well 22 25 26 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL" FR-95-2138
28 29 30 31 32 33 34 35 36 37

OWNER CSX RAILROAD. (last name / first name)

WELL SITE ADDRESS SOUTH MAPLE TOWN BRUNSWICK.

SUBDIVISION SECTION LOT

WELL LOG
Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

DESCRIPTION (Use additional sheets if needed)	FEET FROM	FEET TO	check if water bearing
Sand	0	25	8

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED yes Y / no N

CIRCLE APPROPRIATE LETTER
- A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED
- E ELECTRIC LOG OBTAINED
- P TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO. M G D 067

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO. _ _ D _ _ _

SITE SUPERVISOR (sign. of driller or journeyman

GROUTING RECORD
WELL HAS BEEN GROUTED (Circle Appropriate Box) yes Y / no N (44)

TYPE OF GROUTING MATERIAL (Circle one)
CEMENT C M (45 46) BENTONITE CLAY B C (45 46)

NO. OF BAGS _____ NO. OF POUNDS _____

GALLONS OF WATER _____

DEPTH OF GROUT SEAL (to nearest foot)
from _____ (48 TOP 52) ft. to _____ (54 BOTTOM 58) ft.
(enter 0 if from surface)

CASING RECORD
(casing types insert appropriate code below)
S T STEEL | C O CONCRETE | P L PLASTIC | O T OTHER

MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch)!	Total depth of main casing (nearest foot)
PL (60 61)	4 (63 64)	5 (66 70)

OTHER CASING (if used) — EACH CASING

diameter inch	depth (feet) from	to

SCREEN RECORD
(screen type or open hole insert appropriate code below)
S T STEEL | B R BRASS BRONZE | H O OPEN HOLE | P L PLASTIC | O T OTHER

C 2 (1 2)

DEPTH (nearest ft.) — EACH SCREEN

1	PL (8 9)	5 (11 15)	25 (17 21)
2	(23 24)	(26 30)	(32 36)
3	(38 39)	(41 45)	(47 51)

SLOT SIZE 1 .020 2 _____ 3 _____

DIAMETER OF SCREEN 4 (56 60) (NEAREST INCH)

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68

from	to
3	25

(68)

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)
T (E.R.O.S.) W Q
70 72 74 75 76

C 3 (1 2)

PUMPING TEST
HOURS PUMPED (nearest hour) 1 (8 9)

PUMPING RATE (gal. per min.) .5 (11 15)

METHOD USED TO MEASURE PUMPING RATE Bucket.

WATER LEVEL (distance from land surface)

BEFORE PUMPING 8 (17 20) ft.

WHEN PUMPING 12 (22 25) ft.

TYPE OF PUMP USED (for test)
A air (27) | P piston (27) | T turbine (27)
C centrifugal (27) | R rotary (27) | O other (describe below) (27)
J jet (27) | S submersible (27)

PUMP INSTALLED
DRILLER INSTALLED PUMP (CIRCLE) (YES or NO) YES / NO

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.

TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29. (29)

CAPACITY: GALLONS PER MINUTE (to nearest gallon) (31 35)

PUMP HORSE POWER (37 41)

PUMP COLUMN LENGTH (nearest ft.) (43 47)

CASING HEIGHT (circle appropriate box and enter casing height)
+ (49) above / – (49) below LAND SURFACE
-6. (50 51) (nearest foot)

LATITUDE 39.311197
LONGITUDE 77.625231
(DEFAULT COORD. WGS 84)

NOTES:
MW-67

DRILLER: REMOVE COPY AND RETAIN FOR YOUR RECORDS. RETURN COUNTY COPY TO COUNTY ENVIRONMENTAL AGENCY. SUBMIT COPY TO OWNER. RETURN ALL OTHER PARTS TO DEPARTMENT OF ENVIRONMENT, 1800 WASHINGTON BOULEVARD • BALTIMORE, MARYLAND 21230

C 1 | 0703 — SEQUENCE NO. (MDE USE ONLY)
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

STATE OF MARYLAND
WELL COMPLETION REPORT
FILL IN THIS FORM COMPLETELY PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

COUNTY NUMBER

ST/CO USE ONLY
DATE Received MM DD YY

DATE WELL COMPLETED: MM 01 DD 09 YY 13

Depth of Well: 25 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL": FR - 95 - 2139

OWNER CSX RAILROAD (last name)
WELL SITE ADDRESS SOUTH MAPLE AVE (first name) TOWN BRUNSWICK
SUBDIVISION ____ SECTION ____ LOT ____

WELL LOG
Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

DESCRIPTION (Use additional sheets if needed)	FEET FROM	FEET TO	check if water bearing
Sand	0	25	8

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED: yes [Y] no [N]

CIRCLE APPROPRIATE LETTER
- A — A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED
- E — ELECTRIC LOG OBTAINED
- P — TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO.: M G D 067

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO.: __ __ D __ __ __

SITE SUPERVISOR (sign. of driller or journeyman

GROUTING RECORD
WELL HAS BEEN GROUTED (Circle Appropriate Box): yes [Y] no [N]

TYPE OF GROUTING MATERIAL (Circle one)
CEMENT [CM] BENTONITE CLAY [BC]

NO. OF BAGS ____ NO. OF POUNDS ____
GALLONS OF WATER ____
DEPTH OF GROUT SEAL (to nearest foot)
from 1 ft. TOP to 3 ft. BOTTOM
(enter 0 if from surface)

CASING RECORD
casing types insert appropriate code below:
[ST] STEEL [CO] CONCRETE [PL] PLASTIC [OT] OTHER

MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch)!	Total depth of main casing (nearest foot)
PL	4	5

OTHER CASING (if used)

EACH CASING	diameter inch	depth (feet) from	to

SCREEN RECORD
screen type or open hole — insert appropriate code below:
[ST] STEEL [BR] BRASS BRONZE [HO] OPEN HOLE [PL] PLASTIC [OT] OTHER

EACH SCREEN	screen type	DEPTH (nearest ft.)	
1	PL	5	25
2			
3			

SLOT SIZE 1 .020 2 ____ 3 ____

DIAMETER OF SCREEN 4 (NEAREST INCH)

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68	from	to
	3	25

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)
T (E.R.O.S.) W Q

PUMPING TEST
HOURS PUMPED (nearest hour): 1
PUMPING RATE (gal. per min.): .5
METHOD USED TO MEASURE PUMPING RATE: Bucket
WATER LEVEL (distance from land surface)
BEFORE PUMPING: 8 ft.
WHEN PUMPING: 12 ft.

TYPE OF PUMP USED (for test)
[A] air [P] piston [T] turbine
[C] centrifugal [R] rotary [O] other (describe below)
[J] jet [S] submersible

PUMP INSTALLED
DRILLER INSTALLED PUMP (CIRCLE) (YES or NO): YES (NO)

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.

TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29.
CAPACITY: GALLONS PER MINUTE (to nearest gallon)
PUMP HORSE POWER
PUMP COLUMN LENGTH (nearest ft.)

CASING HEIGHT (circle appropriate box and enter casing height)
[+] above / [-] below LAND SURFACE
- 6 (nearest foot)

LATITUDE 39.311223
LONGITUDE 77.624417
(DEFAULT COORD. WGS 84)

NOTES:
mw 68

DRILLER: REMOVE COPY AND RETAIN FOR YOUR RECORDS. RETURN COUNTY COPY TO COUNTY ENVIRONMENTAL AGENCY. SUBMIT COPY TO OWNER. RETURN ALL OTHER PARTS TO DEPARTMENT OF ENVIRONMENT, 1800 WASHINGTON BOULEVARD • BALTIMORE, MARYLAND 21230

C 1 | 0704 — SEQUENCE NO. (MDE USE ONLY)
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

STATE OF MARYLAND
WELL COMPLETION REPORT
FILL IN THIS FORM COMPLETELY
PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

COUNTY NUMBER

ST/CO USE ONLY
DATE Received MM DD YY

DATE WELL COMPLETED: MM 01 DD 09 YY 13

Depth of Well: 25 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL": FR-95-2137

OWNER: CSX Rail Road (last name)
WELL SITE ADDRESS: South Maple Ave (first name) TOWN: Boonsboro
SUBDIVISION: SECTION: LOT:

WELL LOG
Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

DESCRIPTION (Use additional sheets if needed)	FEET FROM	FEET TO	check if water bearing
Sand	0	25	8

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED: yes Y / no N

CIRCLE APPROPRIATE LETTER
- A — A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED
- E — ELECTRIC LOG OBTAINED
- P — TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO. M 4 D 067

DRILLERS SIGNATURE
(MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO. ___ D ___

SITE SUPERVISOR (sign. of driller or journeyman

GROUTING RECORD
WELL HAS BEEN GROUTED (Circle Appropriate Box): yes Y / no N

TYPE OF GROUTING MATERIAL (Circle one)
CEMENT CM — BENTONITE CLAY BC

NO. OF BAGS ____ NO. OF POUNDS ____
GALLONS OF WATER ____
DEPTH OF GROUT SEAL (to nearest foot)
from -6 ft. (TOP) to 3 ft. (BOTTOM)
(enter 0 if from surface)

CASING RECORD
casing types insert appropriate code below
ST STEEL — CO CONCRETE — PL PLASTIC — OT OTHER

MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch)!	Total depth of main casing (nearest foot)
PL	4	5

OTHER CASING (if used)

EACH CASING	diameter inch	depth (feet) from	depth (feet) to

SCREEN RECORD
screen type or open hole — insert appropriate code below
ST STEEL — BR BRASS BRONZE — HO OPEN HOLE — PL PLASTIC — OT OTHER

EACH SCREEN		DEPTH (nearest ft.)	
1	PL	5	25
2			
3			

SLOT SIZE 1 .020 2 ____ 3 ____
DIAMETER OF SCREEN 4 (NEAREST INCH)

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68: from 3 to 25

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)
T (E.R.O.S.) W Q

C 3

PUMPING TEST
HOURS PUMPED (nearest hour): 1
PUMPING RATE (gal. per min.): .5
METHOD USED TO MEASURE PUMPING RATE: Bucket
WATER LEVEL (distance from land surface)
BEFORE PUMPING: 8 ft.
WHEN PUMPING: 12 ft.

TYPE OF PUMP USED (for test)
A air — P piston — T turbine — C centrifugal — R rotary — O other (describe below) — J jet — S submersible

PUMP INSTALLED
DRILLER INSTALLED PUMP (CIRCLE) (YES or NO): YES / NO

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.

TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29.
CAPACITY: GALLONS PER MINUTE (to nearest gallon)
PUMP HORSE POWER
PUMP COLUMN LENGTH (nearest ft.)
CASING HEIGHT (circle appropriate box and enter casing height)
+ above / − below
LAND SURFACE -6 (nearest foot)

LATITUDE 39.310874
LONGITUDE 77.624364
(DEFAULT COORD. WGS 84)

NOTES:
mw-69

Exhibit A-2
Survey Report

SURVEY REPORT

LOCATION: CSX Brunswick Yard **DATE:** 04 March 2013

SITE: Brunswick, Maryland

SURVEYOR: C. Allen Paugh, Kci Technologies Inc. Fulton 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	Ground Elev. (Top of Lid)	Location ID	Notes
11003	599539.8	1135451.6	245.83	246.27	WELL	MW67
11005	599364.7	1135620.6	244.98	245.82	WELL	MW69
11007	599523.3	1135646.4	245.09	245.97	WELL	MW68
11010	599399.4	1135904.4	245.57	246.07	WELL	MW70

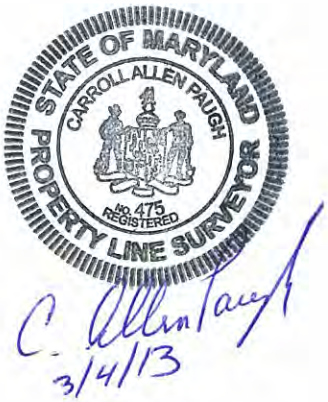

Exhibit A-2
Survey Report

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.

Appendix C

Laboratory Analytical Reports

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: 680-86309-1
Client Project/Site: C&O Canal Brunswick, MD - Railyard

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

Attn: Joshua Wilson

Authorized for release by:
1/22/2013 3:48:38 PM

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

Job ID: 680-86309-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: C&O Canal Brunswick, MD - Railyard

Report Number: 680-86309-1

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 01/08/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 5.6 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples MW-67 (14.2-14.7) (680-86309-1) and MW-67 (8-8.5) (680-86309-3) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. Sample TB-1 (010713) (680-86309-5) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Method(s) 8260B: The laboratory control sample (LCS) for batch 170673 exceeded control limits for the following analyte: 1,1,2,2-tetrachloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.MW-67 (14.2-14.7) (680-86309-1), MW-67 (8-8.5) (680-86309-3)

Method(s) 8260B: The following samples were diluted due to the abundance of non-target analytes: MW-67 (14.2-14.7) (680-86309-1), MW-67 (8-8.5) (680-86309-3). Elevated reporting limits (RLs) are provided.

SEMIVOLATILE ORGANIC COMPOUNDS (SOLID)

Samples MW-67 (13.7-14.7) (680-86309-2) and MW-67 (8-9) (680-86309-4) were analyzed for Semivolatile Organic Compounds (Solid) in accordance with EPA SW-846 Method 8270D.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 1G011013D exceeded the method criteria for the following analyte(s): 4chloraniline, benzidine, benzo(k)fluoranthene, benzaldehyde, hezachlorophene,1,4-phenylenediamine, a,a-dimethylphenethylamine, and 2-picoline. 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 1G010913D was outside method criteria for the following analyte(s): benzoic acid, acenaphthene, benzidine, benzaldehyde, a,a-dimethylphenethylamine, and hexachlorophene. 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 batches 262471 and 262692 was outside method criteria for the

Job ID: 680-86309-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

following analyte(s): N-nitroso-dimethylamine, 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 following sample(s) was diluted due to the nature of the sample matrix : MW-67 (13.7-14.7) (680-86309-2), MW-67 (8-9) (680-86309-4). As such, surrogate recoveries are not reported, and elevated reporting limits (RLs) are provided.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 262692 exceeded the method criteria for the following analyte(s): Benzidine and Benzaldehyde. 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 262692 was outside method criteria for the following analyte(s): Benzoic Acid, Benzidine and Benzaldehyde. 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 minimum response factor (RF) criteria for the initial calibration (ICAL) analyzed in batch 262692 was outside criteria for the following analyte(s): Acenaphthene. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered estimated.

GASOLINE RANGE ORGANICS (GRO)

Samples MW-67 (14.2-14.7) (680-86309-1) and MW-67 (8-8.5) (680-86309-3) 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.

DIESEL RANGE ORGANICS (DRO)

Samples MW-67 (13.7-14.7) (680-86309-2) and MW-67 (8-9) (680-86309-4) were analyzed for Diesel Range Organics (DRO) 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) 8015B: The following sample(s) was diluted due to abundance of target analytes: MW-67 (13.7-14.7) (680-86309-2), MW-67 (8-9) (680-86309-4). As such, surrogate recoveries are not reported, and elevated reporting limits (RLs) are provided.

Method(s) 8015B: The capping continuing calibration verification (CCV) associated with batch 263373 analyzed on 01/18/2013 at 21:14 on instrument FIDQ did not meet criteria on the column. The associated samples were analyzed twice with similar results.

Oil Range Organics (C20-C36) recovery is outside laboratory control limits for the MS and MSD of sample MW-67 (13.7-14.7) (680-86309-2)

Sample Summary

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

TestAmerica Job ID: 680-86309-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-86309-1	MW-67 (14.2-14.7)	Solid	01/07/13 12:30	01/08/13 09:16
680-86309-2	MW-67 (13.7-14.7)	Solid	01/07/13 12:30	01/08/13 09:16
680-86309-3	MW-67 (8-8.5)	Solid	01/07/13 13:25	01/08/13 09:16
680-86309-4	MW-67 (8-9)	Solid	01/07/13 13:25	01/08/13 09:16
680-86309-5	TB-1 (010713)	Water	01/07/13 00:00	01/08/13 09:16

Method Summary

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

TestAmerica Job ID: 680-86309-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015B	Gasoline Range Organics - (GC)	SW846	TAL SAV
8015B	Diesel Range Organics (DRO) (GC)	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.
*	LCS or LCSD 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.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
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.

GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
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, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
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, MD - Railyard

TestAmerica Job ID: 680-86309-1

Client Sample ID: MW-67 (14.2-14.7)
Date Collected: 01/07/13 12:30
Date Received: 01/08/13 09:16

Lab Sample ID: 680-86309-1
Matrix: Solid
Percent Solids: 84.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1200	U	1200	340	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Benzene	240	U	240	23	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Bromodichloromethane	240	U	240	40	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Bromoform	240	U	240	30	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Bromomethane	240	U	240	66	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Carbon disulfide	240	U	240	56	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Carbon tetrachloride	240	U	240	80	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Chlorobenzene	240	U	240	24	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Chloroethane	240	U	240	89	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Chloroform	240	U	240	28	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Chloromethane	240	U	240	47	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
cis-1,2-Dichloroethene	240	U	240	36	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
cis-1,3-Dichloropropene	240	U	240	56	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Cyclohexane	**170**	**J**	240	44	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Dibromochloromethane	240	U	240	41	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,2-Dibromo-3-Chloropropane	240	U	240	160	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,2-Dichlorobenzene	240	U	240	33	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,3-Dichlorobenzene	240	U	240	45	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,4-Dichlorobenzene	240	U	240	39	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Dichlorodifluoromethane	240	U	240	61	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,1-Dichloroethane	240	U	240	39	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,2-Dichloroethane	240	U	240	39	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,1-Dichloroethene	240	U	240	35	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,2-Dichloropropane	240	U	240	35	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Diisopropyl ether	240	U	240	26	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Ethylbenzene	240	U	240	29	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Ethylene Dibromide	240	U	240	23	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Ethyl tert-butyl ether	240	U	240	26	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
2-Hexanone	1200	U	1200	240	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Isopropylbenzene	**1300**		240	32	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Methyl acetate	240	U	240	220	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Methylcyclohexane	**1200**		240	41	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Methylene Chloride	240	U	240	160	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Methyl Ethyl Ketone	1200	U	1200	190	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
methyl isobutyl ketone	1200	U	1200	190	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Methyl tert-butyl ether	240	U	240	47	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Naphthalene	240	U	240	47	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Styrene	240	U	240	36	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Tert-amyl methyl ether	240	U	240	21	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
tert-Butyl alcohol	240	U	240	160	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,1,2,2-Tetrachloroethane	240	U *	240	34	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Tetrachloroethene	240	U	240	40	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Toluene	240	U	240	33	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
trans-1,2-Dichloroethene	240	U	240	36	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
trans-1,3-Dichloropropene	240	U	240	43	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,2,4-Trichlorobenzene	240	U	240	34	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,1,1-Trichloroethane	240	U	240	52	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,1,2-Trichloroethane	240	U	240	43	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Trichloroethene	240	U	240	23	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50

Client Sample ID: MW-67 (14.2-14.7)

Lab Sample ID: 680-86309-1
Date Collected: 01/07/13 12:30
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 84.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	240	U	240	45	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
1,1,2-Trichloro-1,2,2-trifluoroethane	240	U	240	94	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Vinyl chloride	240	U	240	43	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50
Xylenes, Total	470	U	470	89	ug/Kg	☼	01/16/13 07:00	01/16/13 09:18	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*113*		*72 - 122*	*01/16/13 07:00*	*01/16/13 09:18*	*50*
Dibromofluoromethane	*91*		*79 - 118*	*01/16/13 07:00*	*01/16/13 09:18*	*50*
Toluene-d8 (Surr)	*99*		*80 - 120*	*01/16/13 07:00*	*01/16/13 09:18*	*50*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	55		21	1.6	mg/Kg	☼	01/08/13 11:59	01/15/13 13:14	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*109*		*70 - 131*	*01/08/13 11:59*	*01/15/13 13:14*	*100*

Client Sample ID: MW-67 (13.7-14.7)

Lab Sample ID: 680-86309-2
Date Collected: 01/07/13 12:30
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 84.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	3900	U	3900	680	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Phenol	3900	U	3900	400	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Bis(2-chloroethyl)ether	3900	U	3900	530	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2-Chlorophenol	3900	U	3900	470	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2-Methylphenol	3900	U	3900	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
bis (2-chloroisopropyl) ether	3900	U	3900	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Acetophenone	3900	U	3900	330	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
3 & 4 Methylphenol	3900	U	3900	500	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
N-Nitrosodi-n-propylamine	3900	U	3900	380	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Hexachloroethane	3900	U	3900	330	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Nitrobenzene	3900	U	3900	300	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Isophorone	3900	U	3900	390	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2-Nitrophenol	3900	U	3900	480	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2,4-Dimethylphenol	3900	U	3900	520	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Bis(2-chloroethoxy)methane	3900	U	3900	460	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2,4-Dichlorophenol	3900	U	3900	410	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Naphthalene	3900	U	3900	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
4-Chloroaniline	7700	U	7700	610	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Hexachlorobutadiene	3900	U	3900	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Caprolactam	3900	U	3900	770	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
4-Chloro-3-methylphenol	3900	U	3900	410	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2-Methylnaphthalene	3900	U	3900	450	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Hexachlorocyclopentadiene	3900	U	3900	480	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2,4,6-Trichlorophenol	3900	U	3900	340	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2,4,5-Trichlorophenol	3900	U	3900	410	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
1,1'-Biphenyl	3900	U	3900	8700	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2-Chloronaphthalene	3900	U	3900	410	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10

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

TestAmerica Job ID: 680-86309-1

Client Sample ID: MW-67 (13.7-14.7)
Date Collected: 01/07/13 12:30
Date Received: 01/08/13 09:16

Lab Sample ID: 680-86309-2
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
2-Nitroaniline	20000	U	20000	530	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Dimethyl phthalate	3900	U	3900	400	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2,6-Dinitrotoluene	3900	U	3900	490	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Acenaphthylene	3900	U	3900	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
3-Nitroaniline	20000	U	20000	540	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Acenaphthene	3900	U	3900	480	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2,4-Dinitrophenol	20000	U	20000	9700	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
4-Nitrophenol	20000	U	20000	3900	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Dibenzofuran	3900	U	3900	390	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
2,4-Dinitrotoluene	3900	U	3900	570	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Diethyl phthalate	3900	U	3900	430	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Fluorene	**5900**		3900	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
4-Chlorophenyl phenyl ether	3900	U	3900	520	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
4-Nitroaniline	20000	U	20000	570	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
4,6-Dinitro-2-methylphenol	20000	U	20000	2000	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
N-Nitrosodiphenylamine	3900	U	3900	390	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
4-Bromophenyl phenyl ether	3900	U	3900	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Hexachlorobenzene	3900	U	3900	460	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Atrazine	3900	U	3900	270	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Pentachlorophenol	20000	U	20000	3900	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Phenanthrene	**17000**		3900	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Anthracene	3900	U	3900	290	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Carbazole	3900	U	3900	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Di-n-butyl phthalate	3900	U	3900	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Fluoranthene	3900	U	3900	380	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Pyrene	**580**	**J**	3900	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Butyl benzyl phthalate	3900	U	3900	300	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
3,3'-Dichlorobenzidine	7700	U	7700	330	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Benzo[a]anthracene	3900	U	3900	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Chrysene	3900	U	3900	250	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Bis(2-ethylhexyl) phthalate	3900	U	3900	340	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Di-n-octyl phthalate	3900	U	3900	340	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Benzo[b]fluoranthene	3900	U	3900	450	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Benzo[k]fluoranthene	3900	U	3900	760	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Benzo[a]pyrene	3900	U	3900	610	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Indeno[1,2,3-cd]pyrene	3900	U	3900	330	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Dibenz(a,h)anthracene	3900	U	3900	460	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10
Benzo[g,h,i]perylene	3900	U	3900	260	ug/Kg	☼	01/08/13 20:24	01/13/13 21:06	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*0*	*D*	*46 - 130*	*01/08/13 20:24*	*01/13/13 21:06*	*10*
2-Fluorobiphenyl	*0*	*D*	*58 - 130*	*01/08/13 20:24*	*01/13/13 21:06*	*10*
Terphenyl-d14 (Surr)	*0*	*D*	*60 - 130*	*01/08/13 20:24*	*01/13/13 21:06*	*10*
Phenol-d5 (Surr)	*0*	*D*	*49 - 130*	*01/08/13 20:24*	*01/13/13 21:06*	*10*
2-Fluorophenol (Surr)	*0*	*D*	*40 - 130*	*01/08/13 20:24*	*01/13/13 21:06*	*10*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*58 - 130*	*01/08/13 20:24*	*01/13/13 21:06*	*10*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**13000**		390	250	mg/Kg	☼	01/10/13 15:51	01/16/13 15:31	100

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

TestAmerica Job ID: 680-86309-1

Client Sample ID: MW-67 (13.7-14.7)

Lab Sample ID: 680-86309-2
Date Collected: 01/07/13 12:30
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 84.6

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (C20-C36)	2400	U	2400	2400	mg/Kg	☼	01/10/13 15:51	01/16/13 15:31	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0*	*D*	*56 - 135*	*01/10/13 15:51*	*01/16/13 15:31*	*100*

Client Sample ID: MW-67 (8-8.5)

Lab Sample ID: 680-86309-3
Date Collected: 01/07/13 13:25
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 85.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1100	U	1100	330	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Benzene	220	U	220	22	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Bromodichloromethane	220	U	220	37	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Bromoform	220	U	220	28	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Bromomethane	220	U	220	62	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Carbon disulfide	220	U	220	54	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Carbon tetrachloride	220	U	220	76	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Chlorobenzene	220	U	220	23	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Chloroethane	220	U	220	85	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Chloroform	220	U	220	26	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Chloromethane	220	U	220	45	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
cis-1,2-Dichloroethene	220	U	220	34	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
cis-1,3-Dichloropropene	220	U	220	54	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Cyclohexane	**86**	**J**	220	42	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Dibromochloromethane	220	U	220	39	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,2-Dibromo-3-Chloropropane	220	U	220	150	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,2-Dichlorobenzene	220	U	220	32	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,3-Dichlorobenzene	220	U	220	42	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,4-Dichlorobenzene	220	U	220	37	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Dichlorodifluoromethane	220	U	220	58	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,1-Dichloroethane	220	U	220	37	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,2-Dichloroethane	220	U	220	37	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,1-Dichloroethene	220	U	220	33	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,2-Dichloropropane	220	U	220	33	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Diisopropyl ether	220	U	220	25	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Ethylbenzene	220	U	220	27	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Ethylene Dibromide	220	U	220	21	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Ethyl tert-butyl ether	220	U	220	25	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
2-Hexanone	1100	U	1100	220	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Isopropylbenzene	**420**		220	30	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Methyl acetate	220	U	220	210	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Methylcyclohexane	**620**		220	39	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Methylene Chloride	220	U	220	150	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Methyl Ethyl Ketone	1100	U	1100	180	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
methyl isobutyl ketone	1100	U	1100	180	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Methyl tert-butyl ether	220	U	220	45	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Naphthalene	220	U	220	45	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Styrene	220	U	220	34	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Tert-amyl methyl ether	220	U	220	20	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50

Client Sample ID: MW-67 (8-8.5)

Lab Sample ID: 680-86309-3

Date Collected: 01/07/13 13:25
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 85.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butyl alcohol	220	U	220	150	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,1,2,2-Tetrachloroethane	220	U *	220	32	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Tetrachloroethene	220	U	220	37	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Toluene	220	U	220	31	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
trans-1,2-Dichloroethene	220	U	220	34	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
trans-1,3-Dichloropropene	220	U	220	41	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,2,4-Trichlorobenzene	220	U	220	33	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,1,1-Trichloroethane	220	U	220	49	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,1,2-Trichloroethane	220	U	220	41	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Trichloroethene	220	U	220	21	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Trichlorofluoromethane	220	U	220	42	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
1,1,2-Trichloro-1,2,2-trifluoroethane	220	U	220	89	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Vinyl chloride	220	U	220	41	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50
Xylenes, Total	450	U	450	85	ug/Kg	☼	01/16/13 07:00	01/16/13 09:40	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*110*		*72 - 122*	*01/16/13 07:00*	*01/16/13 09:40*	*50*
Dibromofluoromethane	*93*		*79 - 118*	*01/16/13 07:00*	*01/16/13 09:40*	*50*
Toluene-d8 (Surr)	*101*		*80 - 120*	*01/16/13 07:00*	*01/16/13 09:40*	*50*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	38		12	0.89	mg/Kg	☼	01/08/13 11:59	01/15/13 13:33	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*72*		*70 - 131*	*01/08/13 11:59*	*01/15/13 13:33*	*50*

Client Sample ID: MW-67 (8-9)

Lab Sample ID: 680-86309-4

Date Collected: 01/07/13 13:25
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 86.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	3800	U	3800	670	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Phenol	3800	U	3800	390	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Bis(2-chloroethyl)ether	3800	U	3800	520	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2-Chlorophenol	3800	U	3800	460	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2-Methylphenol	3800	U	3800	310	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
bis (2-chloroisopropyl) ether	3800	U	3800	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Acetophenone	3800	U	3800	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
3 & 4 Methylphenol	3800	U	3800	500	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
N-Nitrosodi-n-propylamine	3800	U	3800	370	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Hexachloroethane	3800	U	3800	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Nitrobenzene	3800	U	3800	300	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Isophorone	3800	U	3800	380	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2-Nitrophenol	3800	U	3800	470	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2,4-Dimethylphenol	3800	U	3800	510	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Bis(2-chloroethoxy)methane	3800	U	3800	450	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2,4-Dichlorophenol	3800	U	3800	400	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Naphthalene	3800	U	3800	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10

Client Sample ID: MW-67 (8-9)
Date Collected: 01/07/13 13:25
Date Received: 01/08/13 09:16

Lab Sample ID: 680-86309-4
Matrix: Solid
Percent Solids: 86.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	7600	U	7600	600	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Hexachlorobutadiene	3800	U	3800	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Caprolactam	3800	U	3800	760	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
4-Chloro-3-methylphenol	3800	U	3800	400	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2-Methylnaphthalene	3800	U	3800	440	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Hexachlorocyclopentadiene	3800	U	3800	470	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2,4,6-Trichlorophenol	3800	U	3800	330	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2,4,5-Trichlorophenol	3800	U	3800	400	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
1,1'-Biphenyl	3800	U	3800	8500	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2-Chloronaphthalene	3800	U	3800	400	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2-Nitroaniline	20000	U	20000	520	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Dimethyl phthalate	3800	U	3800	390	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2,6-Dinitrotoluene	3800	U	3800	490	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Acenaphthylene	3800	U	3800	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
3-Nitroaniline	20000	U	20000	530	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Acenaphthene	3800	U	3800	470	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2,4-Dinitrophenol	20000	U	20000	9600	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
4-Nitrophenol	20000	U	20000	3800	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Dibenzofuran	3800	U	3800	380	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
2,4-Dinitrotoluene	3800	U	3800	570	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Diethyl phthalate	3800	U	3800	430	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Fluorene	**1300**	**J**	3800	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
4-Chlorophenyl phenyl ether	3800	U	3800	510	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
4-Nitroaniline	20000	U	20000	570	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
4,6-Dinitro-2-methylphenol	20000	U	20000	2000	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
N-Nitrosodiphenylamine	3800	U	3800	380	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
4-Bromophenyl phenyl ether	3800	U	3800	420	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Hexachlorobenzene	3800	U	3800	450	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Atrazine	3800	U	3800	270	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Pentachlorophenol	20000	U	20000	3800	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Phenanthrene	**3700**	**J**	3800	310	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Anthracene	3800	U	3800	290	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Carbazole	3800	U	3800	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Di-n-butyl phthalate	3800	U	3800	350	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Fluoranthene	3800	U	3800	370	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Pyrene	3800	U	3800	310	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Butyl benzyl phthalate	3800	U	3800	300	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
3,3'-Dichlorobenzidine	7600	U	7600	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Benzo[a]anthracene	3800	U	3800	310	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Chrysene	3800	U	3800	240	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Bis(2-ethylhexyl) phthalate	3800	U	3800	330	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Di-n-octyl phthalate	3800	U	3800	330	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Benzo[b]fluoranthene	3800	U	3800	440	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Benzo[k]fluoranthene	3800	U	3800	750	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Benzo[a]pyrene	3800	U	3800	600	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Indeno[1,2,3-cd]pyrene	3800	U	3800	320	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Dibenz(a,h)anthracene	3800	U	3800	450	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10
Benzo[g,h,i]perylene	3800	U	3800	250	ug/Kg	☼	01/08/13 20:24	01/13/13 21:35	10

Client Sample ID: MW-67 (8-9)

Lab Sample ID: 680-86309-4

Date Collected: 01/07/13 13:25
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 86.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	*0*	*D*	*46 - 130*	*01/08/13 20:24*	*01/13/13 21:35*	*10*
2-Fluorobiphenyl	*0*	*D*	*58 - 130*	*01/08/13 20:24*	*01/13/13 21:35*	*10*
Terphenyl-d14 (Surr)	*0*	*D*	*60 - 130*	*01/08/13 20:24*	*01/13/13 21:35*	*10*
Phenol-d5 (Surr)	*0*	*D*	*49 - 130*	*01/08/13 20:24*	*01/13/13 21:35*	*10*
2-Fluorophenol (Surr)	*0*	*D*	*40 - 130*	*01/08/13 20:24*	*01/13/13 21:35*	*10*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*58 - 130*	*01/08/13 20:24*	*01/13/13 21:35*	*10*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2300**		76	49	mg/Kg	☼	01/10/13 15:51	01/16/13 15:45	20
Oil Range Organics (C20-C36)	460	U	460	460	mg/Kg	☼	01/10/13 15:51	01/16/13 15:45	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*0*	*D*	*56 - 135*	*01/10/13 15:51*	*01/16/13 15:45*	*20*

Client Sample ID: TB-1 (010713)

Lab Sample ID: 680-86309-5

Date Collected: 01/07/13 00:00
Matrix: Water
Date Received: 01/08/13 09:16

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			01/11/13 13:59	1
Benzene	1.0	U	1.0	0.34	ug/L			01/11/13 13:59	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Bromoform	5.0	U	5.0	0.71	ug/L			01/11/13 13:59	1
Bromomethane	1.0	U	1.0	0.98	ug/L			01/11/13 13:59	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Chloroethane	1.0	U	1.0	0.76	ug/L			01/11/13 13:59	1
Chloroform	1.0	U	1.0	0.60	ug/L			01/11/13 13:59	1
Chloromethane	1.0	U	1.0	0.83	ug/L			01/11/13 13:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/11/13 13:59	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			01/11/13 13:59	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			01/11/13 13:59	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			01/11/13 13:59	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			01/11/13 13:59	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			01/11/13 13:59	1
2-Hexanone	25	U	25	3.1	ug/L			01/11/13 13:59	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			01/11/13 13:59	1

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

TestAmerica Job ID: 680-86309-1

Client Sample ID: TB-1 (010713)
Date Collected: 01/07/13 00:00
Date Received: 01/08/13 09:16

Lab Sample ID: 680-86309-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acetate	5.0	U	5.0	2.1	ug/L			01/11/13 13:59	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			01/11/13 13:59	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			01/11/13 13:59	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			01/11/13 13:59	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			01/11/13 13:59	1
Naphthalene	1.0	U	1.0	1.0	ug/L			01/11/13 13:59	1
Styrene	1.0	U	1.0	1.0	ug/L			01/11/13 13:59	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			01/11/13 13:59	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			01/11/13 13:59	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			01/11/13 13:59	1
Toluene	1.0	U	1.0	0.70	ug/L			01/11/13 13:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/11/13 13:59	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			01/11/13 13:59	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			01/11/13 13:59	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			01/11/13 13:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			01/11/13 13:59	1
Xylenes, Total	10	U	10	1.6	ug/L			01/11/13 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*78 - 118*		*01/11/13 13:59*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*01/11/13 13:59*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*01/11/13 13:59*	*1*

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

TestAmerica Job ID: 680-86309-1

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

Lab Sample ID: MB 400-170440/4
Matrix: Water
Analysis Batch: 170440

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			01/11/13 08:27	1
Benzene	1.0	U	1.0	0.34	ug/L			01/11/13 08:27	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Bromoform	5.0	U	5.0	0.71	ug/L			01/11/13 08:27	1
Bromomethane	1.0	U	1.0	0.98	ug/L			01/11/13 08:27	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Chloroethane	1.0	U	1.0	0.76	ug/L			01/11/13 08:27	1
Chloroform	1.0	U	1.0	0.60	ug/L			01/11/13 08:27	1
Chloromethane	1.0	U	1.0	0.83	ug/L			01/11/13 08:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/11/13 08:27	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			01/11/13 08:27	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			01/11/13 08:27	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			01/11/13 08:27	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			01/11/13 08:27	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			01/11/13 08:27	1
2-Hexanone	25	U	25	3.1	ug/L			01/11/13 08:27	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			01/11/13 08:27	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			01/11/13 08:27	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			01/11/13 08:27	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			01/11/13 08:27	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			01/11/13 08:27	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			01/11/13 08:27	1
Naphthalene	1.0	U	1.0	1.0	ug/L			01/11/13 08:27	1
Styrene	1.0	U	1.0	1.0	ug/L			01/11/13 08:27	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			01/11/13 08:27	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			01/11/13 08:27	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			01/11/13 08:27	1
Toluene	1.0	U	1.0	0.70	ug/L			01/11/13 08:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/11/13 08:27	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			01/11/13 08:27	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			01/11/13 08:27	1

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

Lab Sample ID: MB 400-170440/4
Matrix: Water
Analysis Batch: 170440

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			01/11/13 08:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			01/11/13 08:27	1
Xylenes, Total	10	U	10	1.6	ug/L			01/11/13 08:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*78 - 118*		*01/11/13 08:27*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*01/11/13 08:27*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*01/11/13 08:27*	*1*

Lab Sample ID: LCS 400-170440/1000
Matrix: Water
Analysis Batch: 170440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	194		ug/L		97	24 - 150
Benzene	50.0	51.5		ug/L		103	79 - 116
Bromodichloromethane	50.0	50.7		ug/L		101	75 - 127
Bromoform	50.0	47.9		ug/L		96	65 - 121
Bromomethane	50.0	49.9		ug/L		100	10 - 150
Carbon disulfide	50.0	52.3		ug/L		105	41 - 140
Carbon tetrachloride	50.0	48.5		ug/L		97	46 - 141
Chlorobenzene	50.0	51.1		ug/L		102	85 - 113
Chloroethane	50.0	73.4		ug/L		147	37 - 150
Chloroform	50.0	50.6		ug/L		101	73 - 122
Chloromethane	50.0	30.6		ug/L		61	49 - 141
cis-1,2-Dichloroethene	50.0	50.4		ug/L		101	78 - 122
cis-1,3-Dichloropropene	50.0	50.9		ug/L		102	70 - 122
Cyclohexane	50.0	53.5		ug/L		107	69 - 123
Dibromochloromethane	50.0	50.8		ug/L		102	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	51.0		ug/L		102	52 - 124
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	80 - 121
1,3-Dichlorobenzene	50.0	50.2		ug/L		100	77 - 124
1,4-Dichlorobenzene	50.0	49.3		ug/L		99	79 - 119
Dichlorodifluoromethane	50.0	29.4		ug/L		59	27 - 144
1,1-Dichloroethane	50.0	50.1		ug/L		100	75 - 126
1,2-Dichloroethane	50.0	47.1		ug/L		94	69 - 128
1,1-Dichloroethene	50.0	52.5		ug/L		105	50 - 134
1,2-Dichloropropane	50.0	50.1		ug/L		100	77 - 126
Diisopropyl ether	50.0	47.3		ug/L		95	69 - 143
Ethylbenzene	50.0	51.2		ug/L		102	82 - 115
Ethylene Dibromide	50.0	50.6		ug/L		101	82 - 119
Ethyl tert-butyl ether	50.0	59.3		ug/L		119	58 - 142
2-Hexanone	200	192		ug/L		96	60 - 150
Isopropylbenzene	50.0	51.5		ug/L		103	76 - 118
Methyl acetate	50.0	47.3		ug/L		95	58 - 150
Methylcyclohexane	50.0	52.5		ug/L		105	72 - 121

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

Lab Sample ID: LCS 400-170440/1000
Matrix: Water
Analysis Batch: 170440

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	53.0		ug/L		106	70 - 130
Methyl Ethyl Ketone	200	208		ug/L		104	62 - 137
methyl isobutyl ketone	200	189		ug/L		95	63 - 150
Methyl tert-butyl ether	50.0	49.5		ug/L		99	70 - 124
Naphthalene	50.0	50.4		ug/L		101	45 - 131
Styrene	50.0	52.8		ug/L		106	79 - 124
Tert-amyl methyl ether	50.0	61.0		ug/L		122	65 - 125
tert-Butyl alcohol	250	291		ug/L		116	44 - 150
1,1,2,2-Tetrachloroethane	50.0	53.8		ug/L		108	68 - 132
Tetrachloroethene	50.0	50.8		ug/L		102	76 - 124
Toluene	50.0	50.1		ug/L		100	81 - 112
trans-1,2-Dichloroethene	50.0	52.3		ug/L		105	70 - 126
trans-1,3-Dichloropropene	50.0	51.1		ug/L		102	64 - 120
1,2,4-Trichlorobenzene	50.0	48.4		ug/L		97	69 - 128
1,1,1-Trichloroethane	50.0	48.6		ug/L		97	66 - 130
1,1,2-Trichloroethane	50.0	52.3		ug/L		105	81 - 117
Trichloroethene	50.0	50.1		ug/L		100	77 - 119
Trichlorofluoromethane	50.0	49.3		ug/L		99	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.0		ug/L		104	45 - 138
Vinyl chloride	50.0	48.9		ug/L		98	60 - 128
Xylenes, Total	150	155		ug/L		103	81 - 119

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*78 - 118*
Dibromofluoromethane	*103*		*81 - 121*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 400-170686/1-A
Matrix: Solid
Analysis Batch: 170673

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170686

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Benzene	5.0	U	5.0	0.49	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Bromoform	5.0	U	5.0	0.63	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Chloroform	5.0	U	5.0	0.59	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg		01/16/13 07:00	01/16/13 08:56	1

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

Lab Sample ID: MB 400-170686/1-A
Matrix: Solid
Analysis Batch: 170673

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170686

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
2-Hexanone	25	U	25	5.0	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Methylene Chloride	5.0	U	5.0	3.4	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Styrene	5.0	U	5.0	0.76	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Toluene	5.0	U	5.0	0.70	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Trichloroethene	5.0	U	5.0	0.48	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg		01/16/13 07:00	01/16/13 08:56	1
Xylenes, Total	10	U	10	1.9	ug/Kg		01/16/13 07:00	01/16/13 08:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*72 - 122*	*01/16/13 07:00*	*01/16/13 08:56*	*1*
Dibromofluoromethane	*96*		*79 - 118*	*01/16/13 07:00*	*01/16/13 08:56*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*	*01/16/13 07:00*	*01/16/13 08:56*	*1*

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

Lab Sample ID: LCS 400-170686/2-A
Matrix: Solid
Analysis Batch: 170673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170686

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	171		ug/Kg		85	43 - 150
Benzene	50.0	46.0		ug/Kg		92	74 - 119
Bromodichloromethane	50.0	46.0		ug/Kg		92	68 - 128
Bromoform	50.0	48.8		ug/Kg		98	54 - 125
Bromomethane	50.0	41.2		ug/Kg		82	25 - 150
Carbon disulfide	50.0	46.7		ug/Kg		93	26 - 150
Carbon tetrachloride	50.0	41.4		ug/Kg		83	70 - 128
Chlorobenzene	50.0	53.1		ug/Kg		106	80 - 116
Chloroethane	50.0	69.2		ug/Kg		138	22 - 150
Chloroform	50.0	43.6		ug/Kg		87	74 - 119
Chloromethane	50.0	40.7		ug/Kg		81	36 - 147
cis-1,2-Dichloroethene	50.0	43.9		ug/Kg		88	68 - 126
cis-1,3-Dichloropropene	50.0	48.8		ug/Kg		98	68 - 125
Cyclohexane	50.0	48.7		ug/Kg		97	62 - 126
Dibromochloromethane	50.0	44.2		ug/Kg		88	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	54.3		ug/Kg		109	57 - 123
1,2-Dichlorobenzene	50.0	51.9		ug/Kg		104	76 - 120
1,3-Dichlorobenzene	50.0	52.8		ug/Kg		106	78 - 118
1,4-Dichlorobenzene	50.0	51.7		ug/Kg		103	77 - 118
Dichlorodifluoromethane	50.0	41.5		ug/Kg		83	44 - 145
1,1-Dichloroethane	50.0	44.7		ug/Kg		89	61 - 128
1,2-Dichloroethane	50.0	42.2		ug/Kg		84	70 - 125
1,1-Dichloroethene	50.0	45.2		ug/Kg		90	62 - 130
1,2-Dichloropropane	50.0	46.3		ug/Kg		93	64 - 129
Diisopropyl ether	50.0	41.4		ug/Kg		83	46 - 144
Ethylbenzene	50.0	55.1		ug/Kg		110	78 - 116
Ethylene Dibromide	50.0	47.1		ug/Kg		94	78 - 119
Ethyl tert-butyl ether	50.0	49.9		ug/Kg		100	60 - 128
2-Hexanone	200	177		ug/Kg		89	54 - 140
Isopropylbenzene	50.0	54.9		ug/Kg		110	78 - 119
Methyl acetate	50.0	40.9		ug/Kg		82	52 - 139
Methylcyclohexane	50.0	48.0		ug/Kg		96	65 - 126
Methylene Chloride	50.0	49.8		ug/Kg		100	45 - 150
Methyl Ethyl Ketone	200	203		ug/Kg		101	62 - 126
methyl isobutyl ketone	200	172		ug/Kg		86	56 - 137
Methyl tert-butyl ether	50.0	47.4		ug/Kg		95	69 - 124
Naphthalene	50.0	55.3		ug/Kg		111	64 - 126
Styrene	50.0	55.3		ug/Kg		111	66 - 132
Tert-amyl methyl ether	50.0	55.7		ug/Kg		111	65 - 124
tert-Butyl alcohol	250	284		ug/Kg		114	12 - 150
1,1,2,2-Tetrachloroethane	50.0	62.8	*	ug/Kg		126	67 - 120
Tetrachloroethene	50.0	45.1		ug/Kg		90	74 - 126
Toluene	50.0	46.2		ug/Kg		92	76 - 116
trans-1,2-Dichloroethene	50.0	45.7		ug/Kg		91	65 - 130
trans-1,3-Dichloropropene	50.0	48.0		ug/Kg		96	65 - 126
1,2,4-Trichlorobenzene	50.0	55.6		ug/Kg		111	72 - 126
1,1,1-Trichloroethane	50.0	41.2		ug/Kg		82	72 - 121
1,1,2-Trichloroethane	50.0	48.9		ug/Kg		98	75 - 118

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

Lab Sample ID: LCS 400-170686/2-A
Matrix: Solid
Analysis Batch: 170673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170686

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	43.3		ug/Kg		87	76 - 122
Trichlorofluoromethane	50.0	42.6		ug/Kg		85	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	44.1		ug/Kg		88	74 - 123
Vinyl chloride	50.0	44.5		ug/Kg		89	52 - 134
Xylenes, Total	150	167		ug/Kg		111	77 - 118

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*108*		*72 - 122*
Dibromofluoromethane	*96*		*79 - 118*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCSD 400-170686/3-A
Matrix: Solid
Analysis Batch: 170673

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 170686

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	146		ug/Kg		73	43 - 150	16	30
Benzene	50.0	46.5		ug/Kg		93	74 - 119	1	30
Bromodichloromethane	50.0	45.8		ug/Kg		92	68 - 128	0	30
Bromoform	50.0	46.5		ug/Kg		93	54 - 125	5	30
Bromomethane	50.0	54.3		ug/Kg		109	25 - 150	27	30
Carbon disulfide	50.0	44.7		ug/Kg		89	26 - 150	4	30
Carbon tetrachloride	50.0	41.2		ug/Kg		82	70 - 128	0	30
Chlorobenzene	50.0	53.1		ug/Kg		106	80 - 116	0	30
Chloroethane	50.0	69.4		ug/Kg		139	22 - 150	0	30
Chloroform	50.0	44.2		ug/Kg		88	74 - 119	1	30
Chloromethane	50.0	35.1		ug/Kg		70	36 - 147	15	30
cis-1,2-Dichloroethene	50.0	43.1		ug/Kg		86	68 - 126	2	30
cis-1,3-Dichloropropene	50.0	48.7		ug/Kg		97	68 - 125	0	30
Cyclohexane	50.0	49.1		ug/Kg		98	62 - 126	1	30
Dibromochloromethane	50.0	43.8		ug/Kg		88	65 - 131	1	30
1,2-Dibromo-3-Chloropropane	50.0	51.2		ug/Kg		102	57 - 123	6	30
1,2-Dichlorobenzene	50.0	52.1		ug/Kg		104	76 - 120	0	30
1,3-Dichlorobenzene	50.0	51.4		ug/Kg		103	78 - 118	3	30
1,4-Dichlorobenzene	50.0	51.4		ug/Kg		103	77 - 118	1	30
Dichlorodifluoromethane	50.0	36.0		ug/Kg		72	44 - 145	14	30
1,1-Dichloroethane	50.0	44.2		ug/Kg		88	61 - 128	1	30
1,2-Dichloroethane	50.0	42.1		ug/Kg		84	70 - 125	0	30
1,1-Dichloroethene	50.0	44.1		ug/Kg		88	62 - 130	2	30
1,2-Dichloropropane	50.0	46.5		ug/Kg		93	64 - 129	0	30
Diisopropyl ether	50.0	39.9		ug/Kg		80	46 - 144	4	30
Ethylbenzene	50.0	55.2		ug/Kg		110	78 - 116	0	30
Ethylene Dibromide	50.0	46.4		ug/Kg		93	78 - 119	2	30
Ethyl tert-butyl ether	50.0	52.4		ug/Kg		105	60 - 128	5	30
2-Hexanone	200	161		ug/Kg		81	54 - 140	9	30
Isopropylbenzene	50.0	54.9		ug/Kg		110	78 - 119	0	30
Methyl acetate	50.0	36.0		ug/Kg		72	52 - 139	13	30

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

Lab Sample ID: LCSD 400-170686/3-A
Matrix: Solid
Analysis Batch: 170673

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 170686

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylcyclohexane			50.0	48.5		ug/Kg		97	65 - 126	1	30
Methylene Chloride			50.0	47.1		ug/Kg		94	45 - 150	5	30
Methyl Ethyl Ketone			200	178		ug/Kg		89	62 - 126	13	30
methyl isobutyl ketone			200	158		ug/Kg		79	56 - 137	9	30
Methyl tert-butyl ether			50.0	45.8		ug/Kg		92	69 - 124	3	30
Naphthalene			50.0	56.5		ug/Kg		113	64 - 126	2	30
Styrene			50.0	55.1		ug/Kg		110	66 - 132	0	30
Tert-amyl methyl ether			50.0	56.9		ug/Kg		114	65 - 124	2	30
tert-Butyl alcohol			250	236		ug/Kg		94	12 - 150	19	30
1,1,2,2-Tetrachloroethane			50.0	59.2		ug/Kg		118	67 - 120	6	30
Tetrachloroethene			50.0	46.1		ug/Kg		92	74 - 126	2	30
Toluene			50.0	46.9		ug/Kg		94	76 - 116	1	30
trans-1,2-Dichloroethene			50.0	45.2		ug/Kg		90	65 - 130	1	30
trans-1,3-Dichloropropene			50.0	47.8		ug/Kg		96	65 - 126	1	30
1,2,4-Trichlorobenzene			50.0	54.6		ug/Kg		109	72 - 126	2	30
1,1,1-Trichloroethane			50.0	42.0		ug/Kg		84	72 - 121	2	30
1,1,2-Trichloroethane			50.0	47.0		ug/Kg		94	75 - 118	4	30
Trichloroethene			50.0	44.1		ug/Kg		88	76 - 122	2	30
Trichlorofluoromethane			50.0	41.3		ug/Kg		83	65 - 132	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	42.1		ug/Kg		84	74 - 123	5	30
Vinyl chloride			50.0	41.9		ug/Kg		84	52 - 134	6	30
Xylenes, Total			150	168		ug/Kg		112	77 - 118	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*72 - 122*
Dibromofluoromethane	*97*		*79 - 118*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 680-262089/19-A
Matrix: Solid
Analysis Batch: 262471

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	58	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Phenol	330	U	330	34	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Bis(2-chloroethyl)ether	330	U	330	45	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2-Chlorophenol	330	U	330	40	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2-Methylphenol	330	U	330	27	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Acetophenone	330	U	330	28	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
3 & 4 Methylphenol	330	U	330	43	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Hexachloroethane	330	U	330	28	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Nitrobenzene	330	U	330	26	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Isophorone	330	U	330	33	ug/Kg		01/08/13 20:24	01/10/13 17:48	1

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

Lab Sample ID: MB 680-262089/19-A
Matrix: Solid
Analysis Batch: 262471

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	330	U	330	41	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2,4-Dimethylphenol	330	U	330	44	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Bis(2-chloroethoxy)methane	330	U	330	39	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Naphthalene	330	U	330	30	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
4-Chloroaniline	660	U	660	52	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Caprolactam	330	U	330	66	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2-Methylnaphthalene	330	U	330	38	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Hexachlorocyclopentadiene	330	U	330	41	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
1,1'-Biphenyl	330	U	330	740	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2-Nitroaniline	1700	U	1700	45	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Dimethyl phthalate	330	U	330	34	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2,6-Dinitrotoluene	330	U	330	42	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Acenaphthylene	330	U	330	36	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
3-Nitroaniline	1700	U	1700	46	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Acenaphthene	330	U	330	41	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2,4-Dinitrophenol	1700	U	1700	830	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Dibenzofuran	330	U	330	33	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
2,4-Dinitrotoluene	330	U	330	49	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Diethyl phthalate	330	U	330	37	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Fluorene	330	U	330	36	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
4-Chlorophenyl phenyl ether	330	U	330	44	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
4-Nitroaniline	1700	U	1700	49	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Hexachlorobenzene	330	U	330	39	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Atrazine	330	U	330	23	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Phenanthrene	330	U	330	27	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Anthracene	330	U	330	25	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Carbazole	330	U	330	30	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Fluoranthene	330	U	330	32	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Pyrene	330	U	330	27	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
3,3'-Dichlorobenzidine	660	U	660	28	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Chrysene	330	U	330	21	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Benzo[b]fluoranthene	330	U	330	38	ug/Kg		01/08/13 20:24	01/10/13 17:48	1

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

Lab Sample ID: MB 680-262089/19-A
Matrix: Solid
Analysis Batch: 262471

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	330	U	330	65	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Benzo[a]pyrene	330	U	330	52	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Dibenz(a,h)anthracene	330	U	330	39	ug/Kg		01/08/13 20:24	01/10/13 17:48	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		01/08/13 20:24	01/10/13 17:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*55*		*46 - 130*	*01/08/13 20:24*	*01/10/13 17:48*	*1*
2-Fluorobiphenyl	*64*		*58 - 130*	*01/08/13 20:24*	*01/10/13 17:48*	*1*
Terphenyl-d14 (Surr)	*71*		*60 - 130*	*01/08/13 20:24*	*01/10/13 17:48*	*1*
Phenol-d5 (Surr)	*60*		*49 - 130*	*01/08/13 20:24*	*01/10/13 17:48*	*1*
2-Fluorophenol (Surr)	*61*		*40 - 130*	*01/08/13 20:24*	*01/10/13 17:48*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*58 - 130*	*01/08/13 20:24*	*01/10/13 17:48*	*1*

Lab Sample ID: LCS 680-262089/20-A
Matrix: Solid
Analysis Batch: 262471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3320	584		ug/Kg		18	10 - 130
Phenol	3320	2070		ug/Kg		62	46 - 130
Bis(2-chloroethyl)ether	3320	1910		ug/Kg		57	42 - 130
2-Chlorophenol	3320	2120		ug/Kg		64	51 - 130
2-Methylphenol	3320	2200		ug/Kg		66	49 - 130
bis (2-chloroisopropyl) ether	3320	1940		ug/Kg		58	44 - 130
Acetophenone	3320	1520		ug/Kg		46	42 - 130
3 & 4 Methylphenol	3320	2330		ug/Kg		70	50 - 130
N-Nitrosodi-n-propylamine	3320	2190		ug/Kg		66	48 - 130
Hexachloroethane	3320	1750		ug/Kg		53	44 - 130
Nitrobenzene	3320	1990		ug/Kg		60	43 - 130
Isophorone	3320	1970		ug/Kg		59	48 - 130
2-Nitrophenol	3320	2230		ug/Kg		67	45 - 130
2,4-Dimethylphenol	3320	2360		ug/Kg		71	47 - 130
Bis(2-chloroethoxy)methane	3320	2400		ug/Kg		72	56 - 130
2,4-Dichlorophenol	3320	2410		ug/Kg		72	53 - 130
Naphthalene	3320	2100		ug/Kg		63	54 - 130
4-Chloroaniline	3320	2020		ug/Kg		61	36 - 130
Hexachlorobutadiene	3320	2250		ug/Kg		68	47 - 130
Caprolactam	3320	2460		ug/Kg		74	52 - 130
4-Chloro-3-methylphenol	3320	2510		ug/Kg		75	52 - 130
2-Methylnaphthalene	3320	2210		ug/Kg		67	55 - 130
Hexachlorocyclopentadiene	3320	2120		ug/Kg		64	35 - 130
2,4,6-Trichlorophenol	3320	2530		ug/Kg		76	53 - 130
2,4,5-Trichlorophenol	3320	2570		ug/Kg		77	60 - 130
1,1'-Biphenyl	3320	2030		ug/Kg		61	57 - 130
2-Chloronaphthalene	3320	2240		ug/Kg		67	55 - 130
2-Nitroaniline	3320	2350		ug/Kg		71	52 - 130
Dimethyl phthalate	3320	2620		ug/Kg		79	63 - 130

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

Lab Sample ID: LCS 680-262089/20-A
Matrix: Solid
Analysis Batch: 262471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,6-Dinitrotoluene	3320	2490		ug/Kg		75	57 - 130
Acenaphthylene	3320	2400		ug/Kg		72	58 - 130
3-Nitroaniline	3320	2470		ug/Kg		74	42 - 130
Acenaphthene	3320	2360		ug/Kg		71	58 - 130
2,4-Dinitrophenol	3320	2540		ug/Kg		76	10 - 154
4-Nitrophenol	3320	2340		ug/Kg		70	30 - 130
Dibenzofuran	3320	2390		ug/Kg		72	56 - 130
2,4-Dinitrotoluene	3320	2640		ug/Kg		79	55 - 130
Diethyl phthalate	3320	2710		ug/Kg		82	62 - 130
Fluorene	3320	2410		ug/Kg		73	58 - 130
4-Chlorophenyl phenyl ether	3320	2520		ug/Kg		76	61 - 130
4-Nitroaniline	3320	2720		ug/Kg		82	49 - 130
4,6-Dinitro-2-methylphenol	3320	2640		ug/Kg		79	14 - 137
N-Nitrosodiphenylamine	3320	2690		ug/Kg		81	62 - 130
4-Bromophenyl phenyl ether	3320	2650		ug/Kg		80	65 - 130
Hexachlorobenzene	3320	2520		ug/Kg		76	59 - 130
Atrazine	3320	2580		ug/Kg		78	54 - 141
Pentachlorophenol	3320	2520		ug/Kg		76	38 - 131
Phenanthrene	3320	2550		ug/Kg		77	61 - 130
Anthracene	3320	2500		ug/Kg		75	60 - 130
Carbazole	3320	2790		ug/Kg		84	60 - 130
Di-n-butyl phthalate	3320	2930		ug/Kg		88	65 - 130
Fluoranthene	3320	2720		ug/Kg		82	62 - 130
Pyrene	3320	2640		ug/Kg		79	59 - 130
Butyl benzyl phthalate	3320	3050		ug/Kg		92	65 - 134
3,3'-Dichlorobenzidine	3320	2360		ug/Kg		71	45 - 130
Benzo[a]anthracene	3320	2700		ug/Kg		81	62 - 130
Chrysene	3320	2790		ug/Kg		84	62 - 130
Bis(2-ethylhexyl) phthalate	3320	2850		ug/Kg		86	62 - 132
Di-n-octyl phthalate	3320	3020		ug/Kg		91	59 - 146
Benzo[b]fluoranthene	3320	2740		ug/Kg		83	53 - 130
Benzo[k]fluoranthene	3320	2490		ug/Kg		75	57 - 130
Benzo[a]pyrene	3320	2860		ug/Kg		86	68 - 131
Indeno[1,2,3-cd]pyrene	3320	2820		ug/Kg		85	52 - 130
Dibenz(a,h)anthracene	3320	2640		ug/Kg		79	56 - 130
Benzo[g,h,i]perylene	3320	2700		ug/Kg		81	54 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*51*		*46 - 130*
2-Fluorobiphenyl	*61*		*58 - 130*
Terphenyl-d14 (Surr)	*74*		*60 - 130*
Phenol-d5 (Surr)	*59*		*49 - 130*
2-Fluorophenol (Surr)	*56*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*75*		*58 - 130*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 680-262823/3
Matrix: Solid
Analysis Batch: 262823

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	5.0	U	5.0	0.38	mg/Kg			01/15/13 12:04	20

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*123*		*70 - 131*		*01/15/13 12:04*	*20*

Lab Sample ID: LCS 680-262823/4
Matrix: Solid
Analysis Batch: 262823

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			40.0	31.5		mg/Kg		79	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*105*		*70 - 131*

Lab Sample ID: LCSD 680-262823/5
Matrix: Solid
Analysis Batch: 262823

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			40.0	32.0		mg/Kg		80	64 - 133	2	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*106*		*70 - 131*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 680-262260/20-A
Matrix: Solid
Analysis Batch: 263036

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262260

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		01/10/13 15:51	01/16/13 13:10	1
Oil Range Organics (C20-C36)	20	U	20	20	mg/Kg		01/10/13 15:51	01/16/13 13:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*56 - 135*	*01/10/13 15:51*	*01/16/13 13:10*	*1*

Lab Sample ID: LCS 680-262260/21-A
Matrix: Solid
Analysis Batch: 263036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262260

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			33.3	33.1		mg/Kg		100	19 - 171		

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 680-262260/21-A
Matrix: Solid
Analysis Batch: 263036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262260

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	*89*		*56 - 135*

Lab Sample ID: LCS 680-262260/24-A
Matrix: Solid
Analysis Batch: 263036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262260

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Oil Range Organics (C20-C36)			66.4	69.0		mg/Kg		104	50 - 150		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	*99*		*56 - 135*

GC/MS VOA

Analysis Batch: 170440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-5	TB-1 (010713)	Total/NA	Water	8260B	
LCS 400-170440/1000	Lab Control Sample	Total/NA	Water	8260B	
MB 400-170440/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 170673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-1	MW-67 (14.2-14.7)	Total/NA	Solid	8260B	170686
680-86309-3	MW-67 (8-8.5)	Total/NA	Solid	8260B	170686
LCS 400-170686/2-A	Lab Control Sample	Total/NA	Solid	8260B	170686
LCSD 400-170686/3-A	Lab Control Sample Dup	Total/NA	Solid	8260B	170686
MB 400-170686/1-A	Method Blank	Total/NA	Solid	8260B	170686

Prep Batch: 170686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-1	MW-67 (14.2-14.7)	Total/NA	Solid	5035	
680-86309-3	MW-67 (8-8.5)	Total/NA	Solid	5035	
LCS 400-170686/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 400-170686/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 400-170686/1-A	Method Blank	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 262089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-2	MW-67 (13.7-14.7)	Total/NA	Solid	3546	
680-86309-4	MW-67 (8-9)	Total/NA	Solid	3546	
LCS 680-262089/20-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-262089/19-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 262471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-262089/20-A	Lab Control Sample	Total/NA	Solid	8270D	262089
MB 680-262089/19-A	Method Blank	Total/NA	Solid	8270D	262089

Analysis Batch: 262692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-2	MW-67 (13.7-14.7)	Total/NA	Solid	8270D	262089
680-86309-4	MW-67 (8-9)	Total/NA	Solid	8270D	262089

GC VOA

Prep Batch: 262080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-1	MW-67 (14.2-14.7)	Total/NA	Solid	5035	
680-86309-3	MW-67 (8-8.5)	Total/NA	Solid	5035	

Analysis Batch: 262823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-1	MW-67 (14.2-14.7)	Total/NA	Solid	8015B	262080
680-86309-3	MW-67 (8-8.5)	Total/NA	Solid	8015B	262080

GC VOA (Continued)

Analysis Batch: 262823 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-262823/4	Lab Control Sample	Total/NA	Solid	8015B	
LCSD 680-262823/5	Lab Control Sample Dup	Total/NA	Solid	8015B	
MB 680-262823/3	Method Blank	Total/NA	Solid	8015B	

GC Semi VOA

Prep Batch: 262260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-2	MW-67 (13.7-14.7)	Total/NA	Solid	3546	
680-86309-4	MW-67 (8-9)	Total/NA	Solid	3546	
LCS 680-262260/21-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 680-262260/24-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-262260/20-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 263036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86309-2	MW-67 (13.7-14.7)	Total/NA	Solid	8015B	262260
680-86309-4	MW-67 (8-9)	Total/NA	Solid	8015B	262260
LCS 680-262260/21-A	Lab Control Sample	Total/NA	Solid	8015B	262260
LCS 680-262260/24-A	Lab Control Sample	Total/NA	Solid	8015B	262260
MB 680-262260/20-A	Method Blank	Total/NA	Solid	8015B	262260

Lab Chronicle

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

TestAmerica Job ID: 680-86309-1

Client Sample ID: MW-67 (14.2-14.7)

Lab Sample ID: 680-86309-1
Date Collected: 01/07/13 12:30
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			170686	01/16/13 07:00	SH	TAL PEN
Total/NA	Analysis	8260B		50	170673	01/16/13 09:18	SH	TAL PEN
Total/NA	Prep	5035			262080	01/08/13 11:59	FS	TAL SAV
Total/NA	Analysis	8015B		100	262823	01/15/13 13:14	SMC	TAL SAV

Client Sample ID: MW-67 (13.7-14.7)

Lab Sample ID: 680-86309-2
Date Collected: 01/07/13 12:30
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 84.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			262089	01/08/13 20:24	AJW	TAL SAV
Total/NA	Analysis	8270D		10	262692	01/13/13 21:06	BB	TAL SAV
Total/NA	Prep	3546			262260	01/10/13 15:51	AJW	TAL SAV
Total/NA	Analysis	8015B		100	263036	01/16/13 15:31	JEM	TAL SAV

Client Sample ID: MW-67 (8-8.5)

Lab Sample ID: 680-86309-3
Date Collected: 01/07/13 13:25
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 85.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			170686	01/16/13 07:00	SH	TAL PEN
Total/NA	Analysis	8260B		50	170673	01/16/13 09:40	SH	TAL PEN
Total/NA	Prep	5035			262080	01/08/13 11:59	FS	TAL SAV
Total/NA	Analysis	8015B		50	262823	01/15/13 13:33	SMC	TAL SAV

Client Sample ID: MW-67 (8-9)

Lab Sample ID: 680-86309-4
Date Collected: 01/07/13 13:25
Matrix: Solid
Date Received: 01/08/13 09:16
Percent Solids: 86.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			262089	01/08/13 20:24	AJW	TAL SAV
Total/NA	Analysis	8270D		10	262692	01/13/13 21:35	BB	TAL SAV
Total/NA	Prep	3546			262260	01/10/13 15:51	AJW	TAL SAV
Total/NA	Analysis	8015B		20	263036	01/16/13 15:45	JEM	TAL SAV

Client Sample ID: TB-1 (010713)

Lab Sample ID: 680-86309-5
Date Collected: 01/07/13 00:00
Matrix: Water
Date Received: 01/08/13 09:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	170440	01/11/13 13:59	SH	TAL PEN

Lab Chronicle

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

TestAmerica Job ID: 680-86309-1

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 # 130107 - 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): MD

CSXT Project Number: 94153381

Proj. City: Brunswick

CSXT Project Name: GC Canal/Brunswick Rail Yard

CSXT Contact: Raghu Chatrathi

LWON: ENV 35683

CONSULTANT INFORMATION

Project #: MD000843.0011.00002

Company: ARCADIS, INC

PM: Megan Kellner

Address: 1114 Benfield Blvd

Email: megan.kellner@arcadis-us.com

City, State, Zip: Millersville, MD 21108

Phone: 410-987-0032 Fax: 410-987-4392

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 ⇒ (2)	(1)	(6)	(1)	METHODS FOR ANALYSIS				COMMENTS	LAB USE
								Pres. Code				TPH-GRO (SW846)	TPH-DRO/ORO (8015)	Full-suite VOCs (8260)	SVOCs (8270)		
MW-67 (14.2-14.7)	2 terracore	1/7/13	1230	KM	N	grab	SO					X		X			
MW-67 (13.7-14.7)	2 8-oz	1/7/13	1230	KM	N	grab	SO						X		X		
MW-67 (4-8.5)	2 terracore	1/7/13	1325	KM	N	grab	SO					X		X			
MW-67 (8-9)	2 8-oz	1/7/13	1325	KM	N	grab	SO						X		X		
TB-1 (010713)	2 VOA	1/7/13	—	—	—	—	LIQ							X			

Relinquished By	Date/Time	Received By	Date/Time
	1-7-2013/1635		1-7-2013/1635
	1-7-2013/1645		01/08/13 07:16
Relinquished By:	Date/Time:	Received By:	Date/Time:
Received By Laboratory:	Date/Time:	Lab Remarks:	

Comments & Special Analytical Requirements:

5.6°C

680-86309

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)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-86309-1

Login Number: 86309

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.	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: 680-86309-1

Login Number: 86309
List Number: 1
Creator: Crawford, Lauren E

List Source: TestAmerica Pensacola
List Creation: 01/09/13 06:11 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	2.3°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	

Certification Summary

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

TestAmerica Job ID: 680-86309-1

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		0399-01	02-28-13
A2LA	ISO/IEC 17025		399.01	02-28-13
Alabama	State Program	4	41450	06-30-13
Alaska (UST)	State Program	10	UST-104	06-19-13
Arkansas DEQ	State Program	6	88-0692	02-01-13
California	NELAP	9	3217CA	07-31-13
Colorado	State Program	8	N/A	12-31-12
Connecticut	State Program	1	PH-0161	03-31-13
Florida	NELAP	4	E87052	06-30-13
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-13
Georgia	State Program	4	803	06-30-13
Guam	State Program	9	09-005r	04-17-13
Hawaii	State Program	9	N/A	06-30-13
Illinois	NELAP	5	200022	11-30-12
Indiana	State Program	5	N/A	06-30-13
Iowa	State Program	7	353	07-01-13
Kentucky	State Program	4	90084	12-31-12
Kentucky (UST)	State Program	4	18	02-28-13
Louisiana	NELAP	6	30690	06-30-13
Louisiana	NELAP	6	LA100015	12-31-12
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-12
Massachusetts	State Program	1	M-GA006	06-30-13
Michigan	State Program	5	9925	06-30-13
Mississippi	State Program	4	N/A	06-30-13
Montana	State Program	8	CERT0081	12-31-12
Nebraska	State Program	7	TestAmerica-Savannah	06-30-13
New Jersey	NELAP	2	GA769	06-30-13
New Mexico	State Program	6	N/A	06-30-13
New York	NELAP	2	10842	04-01-13
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	01-01-13
South Carolina	State Program	4	98001	06-30-13
Tennessee	State Program	4	TN02961	06-30-13
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-13
Washington	State Program	10	C1794	06-10-13
West Virginia	State Program	3	9950C	12-31-12
West Virginia DEP	State Program	3	94	06-30-13
Wisconsin	State Program	5	999819810	08-31-13
Wyoming	State Program	8	8TMS-Q	06-30-13

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

Certification Summary

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

TestAmerica Job ID: 680-86309-1

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
Arizona	State Program	9	AZ0710	01-11-14
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-13
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
Kentucky (UST)	State Program	4	53	07-05-13
Louisiana	NELAP	6	30976	06-30-13
Maryland	State Program	3	233	09-30-13
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	12-31-12
Oklahoma	State Program	6	9810	08-31-13
Pennsylvania	NELAP	3	68-00467	12-31-12
Rhode Island	State Program	1	LAO00307	12-30-12
South Carolina	State Program	4	96026	06-30-12
Tennessee	State Program	4	TN02907	06-30-13
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-13
West Virginia DEP	State Program	3	136	06-30-13

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: 680-86377-1
Client Project/Site: C&O Canal Brunswick, MD - Railyard

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

Attn: Ms. Megan Kellner

Authorized for release by:
2/14/2013 12:01:51 PM

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

Job ID: 680-86377-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: C&O Canal Brunswick, MD - Railyard
Report Number: 680-86377-1

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 01/10/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.1 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample TB (010813) (680-86377-5) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. Samples MW-68 (11.5-12) (680-86377-1), MW-68 (13.5-14) (680-86377-2), MW-69 (15.5-16.0) (680-86377-3) and MW-69 (16.5-17.0) (680-86377-4) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

The laboratory control sample (LCS) for analytical batch 170628 exceeded control limits for the following analyte: cis-1,2-dichloroethene. This analyte was biased high in the LCS and not detected in the associated samples; therefore, the data have been reported. MW-68 (11.5-12) (680-86377-1), MW-68 (13.5-14) (680-86377-2), MW-69 (15.5-16.0) (680-86377-3), MW-69 (16.5-17.0) (680-86377-4)

The following samples were diluted due to the abundance of non-target analytes: MW-68 (11.5-12) (680-86377-1), MW-68 (13.5-14) (680-86377-2), MW-69 (15.5-16.0) (680-86377-3), MW-69 (16.5-17.0) (680-86377-4). Elevated reporting limits (RLs) are provided.

SEMIVOLATILE ORGANIC COMPOUNDS (SOLID)

Samples MW-68 (11-12) (680-86377-6), MW-68 (13-14) (680-86377-7), MW-69 (15-16) (680-86377-8) and MW-69 (16-17) (680-86377-9) were analyzed for Semivolatile Organic Compounds (Solid) in accordance with EPA SW-846 Method 8270D.

Surrogate recovery for the following sample(s) was outside control limits: MW-68 (13-14) (680-86377-7), MW-69 (15-16) (680-86377-8), MW-69 (16-17) (680-86377-9). Re-extraction was performed with concurring results. The original analysis has been reported.

The initial calibration verification (ICV) analyzed in batch 263840 was outside method criteria for the following analyte(s): benzidine, benzaldehyde, atrazine, and hexachlorophene, 2-nitroanaline, 4-nitrophenol, benzidine, benzaldehyde, atrazine, 1,4-phenylenediamine, 1,4-napthoquinone, 1,3,5-trinitrobenzene, 2-diallate, 4-nitroquinoline-1-oxide, methapyrilene, 3,3-dimethylbenzidine, hexachlorphene and 2,3,6-trichlorophenol. 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 263840 exceeded the method criteria for the following analyte(s): 4-nitrophenol, benzidine, benzaldehyde and atrazine. 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 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,

Job ID: 680-86377-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

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 initial calibration verification (ICV) is 30%.

4-Chloroaniline recovery is outside laboratory control limits for LCS 680-262668/19-A. Several compounds recovered outside laboratory control limits in the MS and/or MSD for sample MW-68 (11-12) (680-86377-6). Refer to the QC report for details.

GASOLINE RANGE ORGANICS (GRO)

Samples MW-68 (11.5-12) (680-86377-1), MW-68 (13.5-14) (680-86377-2), MW-69 (15.5-16.0) (680-86377-3) and MW-69 (16.5-17.0) (680-86377-4) 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.

DIESEL RANGE ORGANICS (DRO)

Samples MW-68 (11-12) (680-86377-6), MW-68 (13-14) (680-86377-7), MW-69 (15-16) (680-86377-8) and MW-69 (16-17) (680-86377-9) were analyzed for Diesel Range Organics (DRO) 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.

The following sample(s) was diluted due to abundance of target analytes : (680-86377-7 MS), (680-86377-7 MSD), MW-68 (11-12) (680-86377-6), MW-68 (13-14) (680-86377-7), MW-69 (15-16) (680-86377-8), MW-69 (16-17) (680-86377-9). As such, surrogate recoveries are not reported, and elevated reporting limits (RLs) are provided.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 262678 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

The capping continuing calibration verification (CCV) associated with batch 263373 analyzed on 01/18/2013 at 21:14 on instrument FIDQ did not meet criteria on the column. The associated samples were analyzed twice with similar results.

Sample Summary

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

TestAmerica Job ID: 680-86377-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-86377-1	MW-68 (11.5-12)	Solid	01/08/13 11:20	01/10/13 08:45
680-86377-2	MW-68 (13.5-14)	Solid	01/08/13 11:25	01/10/13 08:45
680-86377-3	MW-69 (15.5-16.0)	Solid	01/08/13 16:10	01/10/13 08:45
680-86377-4	MW-69 (16.5-17.0)	Solid	01/08/13 16:15	01/10/13 08:45
680-86377-5	TB (010813)	Water	01/08/13 00:00	01/10/13 08:45
680-86377-6	MW-68 (11-12)	Solid	01/08/13 11:20	01/10/13 08:45
680-86377-7	MW-68 (13-14)	Solid	01/08/13 11:25	01/10/13 08:45
680-86377-8	MW-69 (15-16)	Solid	01/08/13 16:10	01/10/13 08:45
680-86377-9	MW-69 (16-17)	Solid	01/08/13 16:15	01/10/13 08:45

Method Summary

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

TestAmerica Job ID: 680-86377-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015B	Gasoline Range Organics - (GC)	SW846	TAL SAV
8015B	Diesel Range Organics (DRO) (GC)	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.
*	LCS or LCSD 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.

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.
F	MS or MSD exceeds the control limits
X	Surrogate is outside control limits
*	LCS or LCSD exceeds the control limits
F	RPD of the MS and MSD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

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, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
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, MD - Railyard

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-68 (11.5-12)
Date Collected: 01/08/13 11:20
Date Received: 01/10/13 08:45

Lab Sample ID: 680-86377-1
Matrix: Solid
Percent Solids: 82.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1100	U	1100	320	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Benzene	220	U	220	22	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Bromodichloromethane	220	U	220	37	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Bromoform	220	U	220	28	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Bromomethane	220	U	220	62	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Carbon disulfide	220	U	220	53	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Carbon tetrachloride	220	U	220	75	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Chlorobenzene	220	U	220	23	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Chloroethane	220	U	220	84	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Chloroform	220	U	220	26	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Chloromethane	220	U	220	44	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
cis-1,2-Dichloroethene	220	U *	220	34	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
cis-1,3-Dichloropropene	220	U	220	53	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Cyclohexane	220	U	220	42	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Dibromochloromethane	220	U	220	38	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,2-Dibromo-3-Chloropropane	220	U	220	150	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,2-Dichlorobenzene	220	U	220	31	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,3-Dichlorobenzene	220	U	220	42	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,4-Dichlorobenzene	220	U	220	36	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Dichlorodifluoromethane	220	U	220	57	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,1-Dichloroethane	220	U	220	37	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,2-Dichloroethane	220	U	220	36	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,1-Dichloroethene	220	U	220	33	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,2-Dichloropropane	220	U	220	33	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Diisopropyl ether	220	U	220	24	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Ethylbenzene	220	U	220	27	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Ethylene Dibromide	220	U	220	21	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Ethyl tert-butyl ether	220	U	220	25	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
2-Hexanone	1100	U	1100	220	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Isopropylbenzene	220	U	220	30	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Methyl acetate	220	U	220	200	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Methylcyclohexane	**540**		220	38	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Methylene Chloride	220	U	220	150	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Methyl Ethyl Ketone	1100	U	1100	180	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
methyl isobutyl ketone	1100	U	1100	180	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Methyl tert-butyl ether	220	U	220	44	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Naphthalene	220	U	220	44	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Styrene	220	U	220	34	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Tert-amyl methyl ether	220	U	220	19	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
tert-Butyl alcohol	220	U	220	150	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,1,2,2-Tetrachloroethane	220	U	220	32	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Tetrachloroethene	220	U	220	37	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Toluene	220	U	220	31	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
trans-1,2-Dichloroethene	220	U	220	34	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
trans-1,3-Dichloropropene	220	U	220	41	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,2,4-Trichlorobenzene	220	U	220	32	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,1,1-Trichloroethane	220	U	220	49	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,1,2-Trichloroethane	220	U	220	41	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Trichloroethene	220	U	220	21	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-68 (11.5-12)

Lab Sample ID: 680-86377-1
Date Collected: 01/08/13 11:20
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	220	U	220	42	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
1,1,2-Trichloro-1,2,2-trifluoroethane	220	U	220	88	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Vinyl chloride	220	U	220	41	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50
Xylenes, Total	440	U	440	84	ug/Kg	☼	01/15/13 06:00	01/15/13 11:56	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 122*	*01/15/13 06:00*	*01/15/13 11:56*	*50*
Dibromofluoromethane	*92*		*79 - 118*	*01/15/13 06:00*	*01/15/13 11:56*	*50*
Toluene-d8 (Surr)	*98*		*80 - 120*	*01/15/13 06:00*	*01/15/13 11:56*	*50*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	21		12	0.92	mg/Kg	☼	01/10/13 10:16	01/16/13 14:00	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*78*		*70 - 131*	*01/10/13 10:16*	*01/16/13 14:00*	*50*

Client Sample ID: MW-68 (13.5-14)

Lab Sample ID: 680-86377-2
Date Collected: 01/08/13 11:25
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 83.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1200	U	1200	350	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Benzene	240	U	240	24	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Bromodichloromethane	240	U	240	41	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Bromoform	240	U	240	30	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Bromomethane	240	U	240	68	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Carbon disulfide	240	U	240	58	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Carbon tetrachloride	240	U	240	82	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Chlorobenzene	240	U	240	25	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Chloroethane	240	U	240	92	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Chloroform	240	U	240	28	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Chloromethane	240	U	240	48	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
cis-1,2-Dichloroethene	240	U *	240	37	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
cis-1,3-Dichloropropene	240	U	240	58	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Cyclohexane	240	U	240	45	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Dibromochloromethane	240	U	240	42	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,2-Dibromo-3-Chloropropane	240	U	240	160	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,2-Dichlorobenzene	240	U	240	34	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,3-Dichlorobenzene	240	U	240	46	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,4-Dichlorobenzene	240	U	240	40	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Dichlorodifluoromethane	240	U	240	63	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,1-Dichloroethane	240	U	240	40	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,2-Dichloroethane	240	U	240	40	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,1-Dichloroethene	240	U	240	36	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,2-Dichloropropane	240	U	240	36	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Diisopropyl ether	240	U	240	27	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Ethylbenzene	240	U	240	29	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Ethylene Dibromide	240	U	240	23	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-68 (13.5-14)

Lab Sample ID: 680-86377-2

Date Collected: 01/08/13 11:25
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 83.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl tert-butyl ether	240	U	240	27	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
2-Hexanone	1200	U	1200	240	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Isopropylbenzene	**280**		240	33	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Methyl acetate	240	U	240	220	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Methylcyclohexane	**510**		240	42	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Methylene Chloride	240	U	240	160	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Methyl Ethyl Ketone	1200	U	1200	200	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
methyl isobutyl ketone	1200	U	1200	190	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Methyl tert-butyl ether	240	U	240	48	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Naphthalene	240	U	240	48	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Styrene	240	U	240	37	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Tert-amyl methyl ether	240	U	240	21	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
tert-Butyl alcohol	240	U	240	160	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,1,2,2-Tetrachloroethane	240	U	240	35	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Tetrachloroethene	240	U	240	41	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Toluene	240	U	240	34	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
trans-1,2-Dichloroethene	240	U	240	37	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
trans-1,3-Dichloropropene	240	U	240	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,2,4-Trichlorobenzene	240	U	240	35	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,1,1-Trichloroethane	240	U	240	53	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,1,2-Trichloroethane	240	U	240	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Trichloroethene	240	U	240	23	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Trichlorofluoromethane	240	U	240	46	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
1,1,2-Trichloro-1,2,2-trifluoroethane	240	U	240	97	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Vinyl chloride	240	U	240	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50
Xylenes, Total	480	U	480	92	ug/Kg	☼	01/15/13 06:00	01/15/13 12:14	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 122*	*01/15/13 06:00*	*01/15/13 12:14*	*50*
Dibromofluoromethane	*98*		*79 - 118*	*01/15/13 06:00*	*01/15/13 12:14*	*50*
Toluene-d8 (Surr)	*96*		*80 - 120*	*01/15/13 06:00*	*01/15/13 12:14*	*50*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**71**		25	1.9	mg/Kg	☼	01/10/13 10:16	01/16/13 15:17	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*87*		*70 - 131*	*01/10/13 10:16*	*01/16/13 15:17*	*100*

Client Sample ID: MW-69 (15.5-16.0)

Lab Sample ID: 680-86377-3

Date Collected: 01/08/13 16:10
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1200	U	1200	340	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Benzene	230	U	230	23	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Bromodichloromethane	230	U	230	39	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Bromoform	230	U	230	29	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Bromomethane	230	U	230	65	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-69 (15.5-16.0)
Date Collected: 01/08/13 16:10
Date Received: 01/10/13 08:45

Lab Sample ID: 680-86377-3
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
Carbon disulfide	230	U	230	56	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Carbon tetrachloride	230	U	230	79	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Chlorobenzene	230	U	230	24	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Chloroethane	230	U	230	88	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Chloroform	230	U	230	27	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Chloromethane	230	U	230	47	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
cis-1,2-Dichloroethene	230	U *	230	35	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
cis-1,3-Dichloropropene	230	U	230	56	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Cyclohexane	230	U	230	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Dibromochloromethane	230	U	230	40	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,2-Dibromo-3-Chloropropane	230	U	230	150	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,2-Dichlorobenzene	230	U	230	33	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,3-Dichlorobenzene	230	U	230	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,4-Dichlorobenzene	230	U	230	38	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Dichlorodifluoromethane	230	U	230	60	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,1-Dichloroethane	230	U	230	39	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,2-Dichloroethane	230	U	230	38	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,1-Dichloroethene	230	U	230	35	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,2-Dichloropropane	230	U	230	34	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Diisopropyl ether	230	U	230	26	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Ethylbenzene	230	U	230	28	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Ethylene Dibromide	230	U	230	22	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Ethyl tert-butyl ether	230	U	230	26	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
2-Hexanone	1200	U	1200	230	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Isopropylbenzene	**47**	**J**	230	32	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Methyl acetate	230	U	230	210	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Methylcyclohexane	230	U	230	40	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Methylene Chloride	230	U	230	160	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Methyl Ethyl Ketone	1200	U	1200	190	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
methyl isobutyl ketone	1200	U	1200	190	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Methyl tert-butyl ether	230	U	230	47	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Naphthalene	230	U	230	47	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Styrene	230	U	230	35	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Tert-amyl methyl ether	230	U	230	20	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
tert-Butyl alcohol	230	U	230	160	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,1,2,2-Tetrachloroethane	230	U	230	33	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Tetrachloroethene	230	U	230	39	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Toluene	230	U	230	33	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
trans-1,2-Dichloroethene	230	U	230	35	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
trans-1,3-Dichloropropene	230	U	230	43	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,2,4-Trichlorobenzene	230	U	230	34	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,1,1-Trichloroethane	230	U	230	51	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,1,2-Trichloroethane	230	U	230	43	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Trichloroethene	230	U	230	22	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Trichlorofluoromethane	230	U	230	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
1,1,2-Trichloro-1,2,2-trifluoroethane	230	U	230	93	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Vinyl chloride	230	U	230	43	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50
Xylenes, Total	470	U	470	88	ug/Kg	☼	01/15/13 06:00	01/15/13 12:31	50

Client Sample ID: MW-69 (15.5-16.0)

Lab Sample ID: 680-86377-3
Date Collected: 01/08/13 16:10
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		72 - 122	01/15/13 06:00	01/15/13 12:31	50
Dibromofluoromethane	95		79 - 118	01/15/13 06:00	01/15/13 12:31	50
Toluene-d8 (Surr)	98		80 - 120	01/15/13 06:00	01/15/13 12:31	50

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	25		12	0.92	mg/Kg	☼	01/10/13 10:16	01/16/13 14:36	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	83		70 - 131	01/10/13 10:16	01/16/13 14:36	50

Client Sample ID: MW-69 (16.5-17.0)

Lab Sample ID: 680-86377-4
Date Collected: 01/08/13 16:15
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1400	U	1400	420	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Benzene	290	U	290	28	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Bromodichloromethane	290	U	290	48	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Bromoform	290	U	290	36	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Bromomethane	290	U	290	81	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Carbon disulfide	290	U	290	69	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Carbon tetrachloride	290	U	290	98	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Chlorobenzene	290	U	290	30	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Chloroethane	290	U	290	110	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Chloroform	290	U	290	34	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Chloromethane	290	U	290	58	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
cis-1,2-Dichloroethene	290	U *	290	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
cis-1,3-Dichloropropene	290	U	290	69	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Cyclohexane	290	U	290	54	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Dibromochloromethane	290	U	290	50	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,2-Dibromo-3-Chloropropane	290	U	290	190	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,2-Dichlorobenzene	290	U	290	41	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,3-Dichlorobenzene	290	U	290	55	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,4-Dichlorobenzene	290	U	290	47	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Dichlorodifluoromethane	290	U	290	75	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,1-Dichloroethane	290	U	290	48	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,2-Dichloroethane	290	U	290	47	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,1-Dichloroethene	290	U	290	43	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,2-Dichloropropane	290	U	290	43	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Diisopropyl ether	290	U	290	32	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Ethylbenzene	290	U	290	35	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Ethylene Dibromide	290	U	290	28	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Ethyl tert-butyl ether	290	U	290	32	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
2-Hexanone	1400	U	1400	290	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Isopropylbenzene	44	J	290	39	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Methyl acetate	290	U	290	260	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Methylcyclohexane	290	U	290	50	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Methylene Chloride	290	U	290	200	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50

Client Sample ID: MW-69 (16.5-17.0)

Lab Sample ID: 680-86377-4

Date Collected: 01/08/13 16:15
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	1400	U	1400	240	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
methyl isobutyl ketone	1400	U	1400	230	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Methyl tert-butyl ether	290	U	290	58	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Naphthalene	290	U	290	58	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Styrene	290	U	290	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Tert-amyl methyl ether	290	U	290	25	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
tert-Butyl alcohol	290	U	290	200	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,1,2,2-Tetrachloroethane	290	U	290	41	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Tetrachloroethene	290	U	290	48	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Toluene	290	U	290	40	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
trans-1,2-Dichloroethene	290	U	290	44	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
trans-1,3-Dichloropropene	290	U	290	53	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,2,4-Trichlorobenzene	290	U	290	42	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,1,1-Trichloroethane	290	U	290	63	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,1,2-Trichloroethane	290	U	290	53	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Trichloroethene	290	U	290	28	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Trichlorofluoromethane	290	U	290	55	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
1,1,2-Trichloro-1,2,2-trifluoroethane	290	U	290	120	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Vinyl chloride	290	U	290	53	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50
Xylenes, Total	580	U	580	110	ug/Kg	☼	01/15/13 06:00	01/15/13 12:47	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 122*	*01/15/13 06:00*	*01/15/13 12:47*	*50*
Dibromofluoromethane	*97*		*79 - 118*	*01/15/13 06:00*	*01/15/13 12:47*	*50*
Toluene-d8 (Surr)	*96*		*80 - 120*	*01/15/13 06:00*	*01/15/13 12:47*	*50*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	36		15	1.1	mg/Kg	☼	01/10/13 10:16	01/16/13 14:57	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*90*		*70 - 131*	*01/10/13 10:16*	*01/16/13 14:57*	*50*

Client Sample ID: TB (010813)

Lab Sample ID: 680-86377-5

Date Collected: 01/08/13 00:00
Matrix: Water
Date Received: 01/10/13 08:45

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			01/14/13 20:13	1
Benzene	1.0	U	1.0	0.34	ug/L			01/14/13 20:13	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Bromoform	5.0	U	5.0	0.71	ug/L			01/14/13 20:13	1
Bromomethane	1.0	U	1.0	0.98	ug/L			01/14/13 20:13	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Chloroethane	1.0	U	1.0	0.76	ug/L			01/14/13 20:13	1
Chloroform	1.0	U	1.0	0.60	ug/L			01/14/13 20:13	1
Chloromethane	1.0	U	1.0	0.83	ug/L			01/14/13 20:13	1

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: TB (010813)
Date Collected: 01/08/13 00:00
Date Received: 01/10/13 08:45

Lab Sample ID: 680-86377-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/14/13 20:13	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			01/14/13 20:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			01/14/13 20:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			01/14/13 20:13	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			01/14/13 20:13	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			01/14/13 20:13	1
2-Hexanone	25	U	25	3.1	ug/L			01/14/13 20:13	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			01/14/13 20:13	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			01/14/13 20:13	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			01/14/13 20:13	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			01/14/13 20:13	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			01/14/13 20:13	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			01/14/13 20:13	1
Naphthalene	1.0	U	1.0	1.0	ug/L			01/14/13 20:13	1
Styrene	1.0	U	1.0	1.0	ug/L			01/14/13 20:13	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			01/14/13 20:13	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			01/14/13 20:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			01/14/13 20:13	1
Toluene	1.0	U	1.0	0.70	ug/L			01/14/13 20:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/14/13 20:13	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			01/14/13 20:13	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			01/14/13 20:13	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			01/14/13 20:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			01/14/13 20:13	1
Xylenes, Total	10	U	10	1.6	ug/L			01/14/13 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*78 - 118*		*01/14/13 20:13*	*1*
Dibromofluoromethane	*110*		*81 - 121*		*01/14/13 20:13*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/14/13 20:13*	*1*

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-68 (11-12)
Date Collected: 01/08/13 11:20
Date Received: 01/10/13 08:45

Lab Sample ID: 680-86377-6
Matrix: Solid
Percent Solids: 82.3

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	☼	01/22/13 20:36	01/23/13 23:41	1
Phenol	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Acetophenone	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Isophorone	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Naphthalene	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Caprolactam	400	U	400	80	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
1,1'-Biphenyl	400	U	400	900	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Acenaphthene	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Fluorene	**780**		400	44	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
N-Nitrosodiphenylamine	**4500**		400	40	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Atrazine	400	U	400	28	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Phenanthrene	**2100**		400	33	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Anthracene	400	U	400	30	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1

Client Sample ID: MW-68 (11-12)

Lab Sample ID: 680-86377-6

Date Collected: 01/08/13 11:20
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Fluoranthene	**78**	**J**	400	39	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Pyrene	**130**	**J**	400	33	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Chrysene	400	U	400	26	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	01/22/13 20:36	01/23/13 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*58*		*46 - 130*	*01/22/13 20:36*	*01/23/13 23:41*	*1*
2-Fluorobiphenyl	*64*		*58 - 130*	*01/22/13 20:36*	*01/23/13 23:41*	*1*
Terphenyl-d14 (Surr)	*67*		*60 - 130*	*01/22/13 20:36*	*01/23/13 23:41*	*1*
Phenol-d5 (Surr)	*67*		*49 - 130*	*01/22/13 20:36*	*01/23/13 23:41*	*1*
2-Fluorophenol (Surr)	*65*		*40 - 130*	*01/22/13 20:36*	*01/23/13 23:41*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*58 - 130*	*01/22/13 20:36*	*01/23/13 23:41*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2400**		40	25	mg/Kg	☼	01/15/13 20:01	01/17/13 17:53	10
Oil Range Organics (C20-C36)	240	U	240	240	mg/Kg	☼	01/15/13 20:01	01/17/13 17:53	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0*	*D*	*56 - 135*	*01/15/13 20:01*	*01/17/13 17:53*	*10*

Client Sample ID: MW-68 (13-14)

Lab Sample ID: 680-86377-7

Date Collected: 01/08/13 11:25
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.0

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	☼	01/22/13 20:36	01/24/13 00:08	1
Phenol	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
bis (2-chloroisopropyl) ether	400	U	400	37	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Acetophenone	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-68 (13-14)
Date Collected: 01/08/13 11:25
Date Received: 01/10/13 08:45

Lab Sample ID: 680-86377-7
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
Isophorone	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2,4-Dimethylphenol	**360**	**J**	400	54	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Bis(2-chloroethoxy)methane	400	U	400	48	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Naphthalene	400	U	400	37	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Caprolactam	400	U	400	80	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
1,1'-Biphenyl	400	U	400	900	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Acenaphthene	**1500**		400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Fluorene	**1800**		400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
4-Chlorophenyl phenyl ether	400	U	400	54	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Hexachlorobenzene	400	U	400	48	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Atrazine	400	U	400	28	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Phenanthrene	**4600**		400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Anthracene	400	U	400	30	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Carbazole	400	U	400	37	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Di-n-butyl phthalate	400	U	400	37	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Fluoranthene	**140**	**J**	400	39	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Pyrene	**230**	**J**	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Chrysene	400	U	400	26	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1

Client Sample ID: MW-68 (13-14)

Lab Sample ID: 680-86377-7

Date Collected: 01/08/13 11:25
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Dibenz(a,h)anthracene	400	U	400	48	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	01/22/13 20:36	01/24/13 00:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*55*		*46 - 130*	*01/22/13 20:36*	*01/24/13 00:08*	*1*
2-Fluorobiphenyl	*60*		*58 - 130*	*01/22/13 20:36*	*01/24/13 00:08*	*1*
Terphenyl-d14 (Surr)	*64*		*60 - 130*	*01/22/13 20:36*	*01/24/13 00:08*	*1*
Phenol-d5 (Surr)	*65*		*49 - 130*	*01/22/13 20:36*	*01/24/13 00:08*	*1*
2-Fluorophenol (Surr)	*64*		*40 - 130*	*01/22/13 20:36*	*01/24/13 00:08*	*1*
2,4,6-Tribromophenol (Surr)	*71*		*58 - 130*	*01/22/13 20:36*	*01/24/13 00:08*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**3800**		80	51	mg/Kg	☼	01/15/13 20:01	01/17/13 18:21	20
Oil Range Organics (C20-C36)	480	U	480	480	mg/Kg	☼	01/15/13 20:01	01/17/13 18:21	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0*	*D*	*56 - 135*	*01/15/13 20:01*	*01/17/13 18:21*	*20*

Client Sample ID: MW-69 (15-16)

Lab Sample ID: 680-86377-8

Date Collected: 01/08/13 16:10
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 70.8

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	☼	01/15/13 20:32	01/18/13 21:37	1
Phenol	460	U	460	48	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Bis(2-chloroethyl)ether	460	U	460	63	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2-Chlorophenol	460	U	460	56	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2-Methylphenol	460	U	460	38	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
bis (2-chloroisopropyl) ether	460	U	460	42	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Acetophenone	460	U	460	39	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
3 & 4 Methylphenol	460	U	460	60	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
N-Nitrosodi-n-propylamine	460	U	460	45	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Hexachloroethane	460	U	460	39	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Nitrobenzene	460	U	460	36	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Isophorone	460	U	460	46	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2-Nitrophenol	460	U	460	57	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2,4-Dimethylphenol	460	U	460	62	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Bis(2-chloroethoxy)methane	460	U	460	55	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2,4-Dichlorophenol	460	U	460	49	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Naphthalene	460	U	460	42	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
4-Chloroaniline	930	U *	930	73	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Hexachlorobutadiene	460	U	460	50	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Caprolactam	460	U	460	93	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
4-Chloro-3-methylphenol	460	U	460	49	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2-Methylnaphthalene	460	U	460	53	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-69 (15-16)
Date Collected: 01/08/13 16:10
Date Received: 01/10/13 08:45

Lab Sample ID: 680-86377-8
Matrix: Solid
Percent Solids: 70.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	460	U	460	57	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2,4,6-Trichlorophenol	460	U	460	41	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2,4,5-Trichlorophenol	460	U	460	49	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
1,1'-Biphenyl	460	U	460	1000	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2-Chloronaphthalene	460	U	460	49	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2-Nitroaniline	2400	U	2400	63	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Dimethyl phthalate	460	U	460	48	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2,6-Dinitrotoluene	460	U	460	59	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Acenaphthylene	460	U	460	50	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
3-Nitroaniline	2400	U	2400	64	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Acenaphthene	460	U	460	57	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2,4-Dinitrophenol	2400	U	2400	1200	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
4-Nitrophenol	2400	U	2400	460	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Dibenzofuran	460	U	460	46	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
2,4-Dinitrotoluene	460	U	460	69	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Diethyl phthalate	460	U	460	52	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Fluorene	460	U	460	50	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
4-Chlorophenyl phenyl ether	460	U	460	62	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
4-Nitroaniline	2400	U	2400	69	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
4,6-Dinitro-2-methylphenol	2400	U	2400	240	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
N-Nitrosodiphenylamine	460	U	460	46	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
4-Bromophenyl phenyl ether	460	U	460	50	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Hexachlorobenzene	460	U	460	55	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Atrazine	460	U	460	32	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Pentachlorophenol	2400	U	2400	460	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Phenanthrene	**110**	**J**	460	38	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Anthracene	460	U	460	35	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Carbazole	460	U	460	42	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Di-n-butyl phthalate	460	U	460	42	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Fluoranthene	460	U	460	45	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Pyrene	460	U	460	38	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Butyl benzyl phthalate	460	U	460	36	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
3,3'-Dichlorobenzidine	930	U	930	39	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Benzo[a]anthracene	460	U	460	38	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Chrysene	460	U	460	29	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Bis(2-ethylhexyl) phthalate	460	U	460	41	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Di-n-octyl phthalate	460	U	460	41	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Benzo[b]fluoranthene	460	U	460	53	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Benzo[k]fluoranthene	460	U	460	91	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Benzo[a]pyrene	460	U	460	73	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Indeno[1,2,3-cd]pyrene	460	U	460	39	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Dibenz(a,h)anthracene	460	U	460	55	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1
Benzo[g,h,i]perylene	460	U	460	31	ug/Kg	☼	01/15/13 20:32	01/18/13 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*36*	*X*	*46 - 130*	*01/15/13 20:32*	*01/18/13 21:37*	*1*
2-Fluorobiphenyl	*51*	*X*	*58 - 130*	*01/15/13 20:32*	*01/18/13 21:37*	*1*
Terphenyl-d14 (Surr)	*46*	*X*	*60 - 130*	*01/15/13 20:32*	*01/18/13 21:37*	*1*
Phenol-d5 (Surr)	*53*		*49 - 130*	*01/15/13 20:32*	*01/18/13 21:37*	*1*
2-Fluorophenol (Surr)	*53*		*40 - 130*	*01/15/13 20:32*	*01/18/13 21:37*	*1*

Client Sample ID: MW-69 (15-16)

Lab Sample ID: 680-86377-8

Date Collected: 01/08/13 16:10
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 70.8

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	*70*		*58 - 130*	*01/15/13 20:32*	*01/18/13 21:37*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**540**		23	15	mg/Kg	☼	01/15/13 20:01	01/17/13 17:25	5
Oil Range Organics (C20-C36)	140	U	140	140	mg/Kg	☼	01/15/13 20:01	01/17/13 17:25	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*0*	*D*	*56 - 135*	*01/15/13 20:01*	*01/17/13 17:25*	*5*

Client Sample ID: MW-69 (16-17)

Lab Sample ID: 680-86377-9

Date Collected: 01/08/13 16:15
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.2

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	☼	01/22/13 20:36	01/24/13 01:05	1
Phenol	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Bis(2-chloroethyl)ether	400	U	400	54	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2-Chlorophenol	400	U	400	48	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Acetophenone	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Nitrobenzene	400	U	400	31	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Isophorone	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2,4-Dimethylphenol	400	U	400	53	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2,4-Dichlorophenol	400	U	400	42	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Naphthalene	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Caprolactam	400	U	400	80	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
4-Chloro-3-methylphenol	400	U	400	42	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2-Methylnaphthalene	400	U	400	46	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2,4,5-Trichlorophenol	400	U	400	42	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
1,1'-Biphenyl	400	U	400	900	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2-Chloronaphthalene	400	U	400	42	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2-Nitroaniline	2100	U	2100	54	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Acenaphthene	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1

Client Sample ID: MW-69 (16-17)
Date Collected: 01/08/13 16:15
Date Received: 01/10/13 08:45

Lab Sample ID: 680-86377-9
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
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
2,4-Dinitrotoluene	400	U	400	59	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Fluorene	**920**		400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
4-Chlorophenyl phenyl ether	400	U	400	53	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
4-Nitroaniline	2100	U	2100	59	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Atrazine	400	U	400	28	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Phenanthrene	**2300**		400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Anthracene	400	U	400	30	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Carbazole	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Fluoranthene	400	U	400	39	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Pyrene	**80**	**J**	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Butyl benzyl phthalate	400	U	400	31	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Chrysene	400	U	400	25	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	01/22/13 20:36	01/24/13 01:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*57*		*46 - 130*	*01/22/13 20:36*	*01/24/13 01:05*	*1*
2-Fluorobiphenyl	*60*		*58 - 130*	*01/22/13 20:36*	*01/24/13 01:05*	*1*
Terphenyl-d14 (Surr)	*62*		*60 - 130*	*01/22/13 20:36*	*01/24/13 01:05*	*1*
Phenol-d5 (Surr)	*63*		*49 - 130*	*01/22/13 20:36*	*01/24/13 01:05*	*1*
2-Fluorophenol (Surr)	*65*		*40 - 130*	*01/22/13 20:36*	*01/24/13 01:05*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*58 - 130*	*01/22/13 20:36*	*01/24/13 01:05*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1600**		40	25	mg/Kg	☼	01/15/13 20:01	01/17/13 20:27	10
Oil Range Organics (C20-C36)	240	U	240	240	mg/Kg	☼	01/15/13 20:01	01/17/13 20:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0*	*D*	*56 - 135*	*01/15/13 20:01*	*01/17/13 20:27*	*10*

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

Lab Sample ID: MB 400-170586/4
Matrix: Water
Analysis Batch: 170586

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.34	ug/L			01/14/13 16:25	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			01/14/13 16:25	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			01/14/13 16:25	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			01/14/13 16:25	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			01/14/13 16:25	1
Naphthalene	1.0	U	1.0	1.0	ug/L			01/14/13 16:25	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			01/14/13 16:25	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			01/14/13 16:25	1
Toluene	1.0	U	1.0	0.70	ug/L			01/14/13 16:25	1
Xylenes, Total	10	U	10	1.6	ug/L			01/14/13 16:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*78 - 118*		*01/14/13 16:25*	*1*
Dibromofluoromethane	*114*		*81 - 121*		*01/14/13 16:25*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*01/14/13 16:25*	*1*

Lab Sample ID: LCS 400-170586/1000
Matrix: Water
Analysis Batch: 170586

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	51.4		ug/L		103	79 - 116
Diisopropyl ether	50.0	56.0		ug/L		112	69 - 143
Ethylbenzene	50.0	50.3		ug/L		101	82 - 115
Ethyl tert-butyl ether	50.0	58.5		ug/L		117	58 - 142
Methyl tert-butyl ether	50.0	58.3		ug/L		117	70 - 124
Naphthalene	50.0	57.6		ug/L		115	45 - 131
Tert-amyl methyl ether	50.0	50.4		ug/L		101	65 - 125
tert-Butyl alcohol	250	253		ug/L		101	44 - 150
Toluene	50.0	51.4		ug/L		103	81 - 112
Xylenes, Total	150	151		ug/L		101	81 - 119

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*78 - 118*
Dibromofluoromethane	*114*		*81 - 121*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 400-170639/1-A
Matrix: Solid
Analysis Batch: 170628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170639

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Benzene	5.0	U	5.0	0.49	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Bromoform	5.0	U	5.0	0.63	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg		01/15/13 06:00	01/15/13 09:52	1

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

Lab Sample ID: MB 400-170639/1-A
Matrix: Solid
Analysis Batch: 170628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170639

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Chloroform	5.0	U	5.0	0.59	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
2-Hexanone	25	U	25	5.0	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Methylene Chloride	5.0	U	5.0	3.4	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Styrene	5.0	U	5.0	0.76	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Toluene	5.0	U	5.0	0.70	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Trichloroethene	5.0	U	5.0	0.48	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg		01/15/13 06:00	01/15/13 09:52	1
Xylenes, Total	10	U	10	1.9	ug/Kg		01/15/13 06:00	01/15/13 09:52	1

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

Lab Sample ID: MB 400-170639/1-A
Matrix: Solid
Analysis Batch: 170628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170639

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	*97*		*72 - 122*	*01/15/13 06:00*	*01/15/13 09:52*	*1*
Dibromofluoromethane	*105*		*79 - 118*	*01/15/13 06:00*	*01/15/13 09:52*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*01/15/13 06:00*	*01/15/13 09:52*	*1*

Lab Sample ID: LCS 400-170639/2-A
Matrix: Solid
Analysis Batch: 170628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170639

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	248		ug/Kg		124	43 - 150
Benzene	50.0	53.1		ug/Kg		106	74 - 119
Bromodichloromethane	50.0	53.2		ug/Kg		106	68 - 128
Bromoform	50.0	49.2		ug/Kg		98	54 - 125
Bromomethane	50.0	58.3		ug/Kg		117	25 - 150
Carbon disulfide	50.0	52.5		ug/Kg		105	26 - 150
Carbon tetrachloride	50.0	52.7		ug/Kg		105	70 - 128
Chlorobenzene	50.0	54.9		ug/Kg		110	80 - 116
Chloroethane	50.0	67.4		ug/Kg		135	22 - 150
Chloroform	50.0	54.4		ug/Kg		109	74 - 119
Chloromethane	50.0	61.9		ug/Kg		124	36 - 147
cis-1,2-Dichloroethene	50.0	64.0	*	ug/Kg		128	68 - 126
cis-1,3-Dichloropropene	50.0	51.4		ug/Kg		103	68 - 125
Cyclohexane	50.0	51.0		ug/Kg		102	62 - 126
Dibromochloromethane	50.0	57.3		ug/Kg		115	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	46.9		ug/Kg		94	57 - 123
1,2-Dichlorobenzene	50.0	53.6		ug/Kg		107	76 - 120
1,3-Dichlorobenzene	50.0	54.9		ug/Kg		110	78 - 118
1,4-Dichlorobenzene	50.0	53.9		ug/Kg		108	77 - 118
Dichlorodifluoromethane	50.0	49.3		ug/Kg		99	44 - 145
1,1-Dichloroethane	50.0	63.8		ug/Kg		128	61 - 128
1,2-Dichloroethane	50.0	56.9		ug/Kg		114	70 - 125
1,1-Dichloroethene	50.0	56.1		ug/Kg		112	62 - 130
1,2-Dichloropropane	50.0	61.0		ug/Kg		122	64 - 129
Diisopropyl ether	50.0	64.5		ug/Kg		129	46 - 144
Ethylbenzene	50.0	53.9		ug/Kg		108	78 - 116
Ethylene Dibromide	50.0	55.6		ug/Kg		111	78 - 119
Ethyl tert-butyl ether	50.0	60.3		ug/Kg		121	60 - 128
2-Hexanone	200	242		ug/Kg		121	54 - 140
Isopropylbenzene	50.0	55.4		ug/Kg		111	78 - 119
Methyl acetate	50.0	61.9		ug/Kg		124	52 - 139
Methylcyclohexane	50.0	52.3		ug/Kg		105	65 - 126
Methylene Chloride	50.0	52.6		ug/Kg		105	45 - 150
Methyl Ethyl Ketone	200	218		ug/Kg		109	62 - 126
methyl isobutyl ketone	200	247		ug/Kg		123	56 - 137
Methyl tert-butyl ether	50.0	55.8		ug/Kg		112	69 - 124
Naphthalene	50.0	49.6		ug/Kg		99	64 - 126
Styrene	50.0	55.9		ug/Kg		112	66 - 132
Tert-amyl methyl ether	50.0	52.3		ug/Kg		105	65 - 124

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

Lab Sample ID: LCS 400-170639/2-A
Matrix: Solid
Analysis Batch: 170628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170639

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butyl alcohol	250	324		ug/Kg		130	12 - 150
1,1,2,2-Tetrachloroethane	50.0	53.4		ug/Kg		107	67 - 120
Tetrachloroethene	50.0	54.9		ug/Kg		110	74 - 126
Toluene	50.0	53.7		ug/Kg		107	76 - 116
trans-1,2-Dichloroethene	50.0	55.3		ug/Kg		111	65 - 130
trans-1,3-Dichloropropene	50.0	51.5		ug/Kg		103	65 - 126
1,2,4-Trichlorobenzene	50.0	49.5		ug/Kg		99	72 - 126
1,1,1-Trichloroethane	50.0	56.1		ug/Kg		112	72 - 121
1,1,2-Trichloroethane	50.0	52.7		ug/Kg		105	75 - 118
Trichloroethene	50.0	52.1		ug/Kg		104	76 - 122
Trichlorofluoromethane	50.0	58.1		ug/Kg		116	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	54.9		ug/Kg		110	74 - 123
Vinyl chloride	50.0	57.2		ug/Kg		114	52 - 134
Xylenes, Total	150	164		ug/Kg		109	77 - 118

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*72 - 122*
Dibromofluoromethane	*106*		*79 - 118*
Toluene-d8 (Surr)	*95*		*80 - 120*

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

Lab Sample ID: MB 680-262668/18-A
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262668

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	57	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Phenol	330	U	330	34	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Bis(2-chloroethyl)ether	330	U	330	44	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2-Chlorophenol	330	U	330	39	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2-Methylphenol	330	U	330	27	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Acetophenone	330	U	330	28	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
3 & 4 Methylphenol	330	U	330	42	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Hexachloroethane	330	U	330	28	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Nitrobenzene	330	U	330	26	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Isophorone	330	U	330	33	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2-Nitrophenol	330	U	330	40	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2,4-Dimethylphenol	330	U	330	43	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Bis(2-chloroethoxy)methane	330	U	330	38	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Naphthalene	330	U	330	30	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
4-Chloroaniline	650	U	650	51	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Caprolactam	330	U	330	65	ug/Kg		01/15/13 20:32	01/18/13 20:13	1

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

Lab Sample ID: MB 680-262668/18-A
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262668

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2-Methylnaphthalene	330	U	330	37	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Hexachlorocyclopentadiene	330	U	330	40	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
1,1'-Biphenyl	330	U	330	730	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2-Nitroaniline	1700	U	1700	44	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Dimethyl phthalate	330	U	330	34	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2,6-Dinitrotoluene	330	U	330	41	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Acenaphthylene	330	U	330	36	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
3-Nitroaniline	1700	U	1700	45	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Acenaphthene	330	U	330	40	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2,4-Dinitrophenol	1700	U	1700	820	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Dibenzofuran	330	U	330	33	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
2,4-Dinitrotoluene	330	U	330	48	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Diethyl phthalate	330	U	330	37	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Fluorene	330	U	330	36	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
4-Chlorophenyl phenyl ether	330	U	330	43	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
4-Nitroaniline	1700	U	1700	48	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Hexachlorobenzene	330	U	330	38	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Atrazine	330	U	330	23	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Phenanthrene	330	U	330	27	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Anthracene	330	U	330	25	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Carbazole	330	U	330	30	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Fluoranthene	330	U	330	32	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Pyrene	330	U	330	27	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
3,3'-Dichlorobenzidine	650	U	650	28	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Chrysene	330	U	330	21	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Benzo[b]fluoranthene	330	U	330	37	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Benzo[k]fluoranthene	330	U	330	64	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Benzo[a]pyrene	330	U	330	51	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Dibenz(a,h)anthracene	330	U	330	38	ug/Kg		01/15/13 20:32	01/18/13 20:13	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		01/15/13 20:32	01/18/13 20:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*66*		*46 - 130*	*01/15/13 20:32*	*01/18/13 20:13*	*1*

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

Lab Sample ID: MB 680-262668/18-A
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262668

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	69		58 - 130	01/15/13 20:32	01/18/13 20:13	1
Terphenyl-d14 (Surr)	72		60 - 130	01/15/13 20:32	01/18/13 20:13	1
Phenol-d5 (Surr)	71		49 - 130	01/15/13 20:32	01/18/13 20:13	1
2-Fluorophenol (Surr)	68		40 - 130	01/15/13 20:32	01/18/13 20:13	1
2,4,6-Tribromophenol (Surr)	94		58 - 130	01/15/13 20:32	01/18/13 20:13	1
2,4,6-Tribromophenol (Surr)	94		58 - 130	01/15/13 20:32	01/18/13 20:13	1

Lab Sample ID: LCS 680-262668/19-A
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262668

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3280	981		ug/Kg		30	10 - 130
Phenol	3280	2420		ug/Kg		74	46 - 130
Bis(2-chloroethyl)ether	3280	2400		ug/Kg		73	42 - 130
2-Chlorophenol	3280	2470		ug/Kg		75	51 - 130
2-Methylphenol	3280	2510		ug/Kg		77	49 - 130
bis (2-chloroisopropyl) ether	3280	2450		ug/Kg		75	44 - 130
Acetophenone	3280	1940		ug/Kg		59	42 - 130
3 & 4 Methylphenol	3280	2510		ug/Kg		77	50 - 130
N-Nitrosodi-n-propylamine	3280	2690		ug/Kg		82	48 - 130
Hexachloroethane	3280	2260		ug/Kg		69	44 - 130
Nitrobenzene	3280	2540		ug/Kg		77	43 - 130
Isophorone	3280	2290		ug/Kg		70	48 - 130
2-Nitrophenol	3280	3030		ug/Kg		92	45 - 130
2,4-Dimethylphenol	3280	2390		ug/Kg		73	47 - 130
Bis(2-chloroethoxy)methane	3280	2540		ug/Kg		77	56 - 130
2,4-Dichlorophenol	3280	2640		ug/Kg		80	53 - 130
Naphthalene	3280	2350		ug/Kg		72	54 - 130
4-Chloroaniline	3280	1020	*	ug/Kg		31	36 - 130
Hexachlorobutadiene	3280	2810		ug/Kg		86	47 - 130
Caprolactam	3280	3500		ug/Kg		107	52 - 130
4-Chloro-3-methylphenol	3280	2800		ug/Kg		85	52 - 130
2-Methylnaphthalene	3280	2500		ug/Kg		76	55 - 130
Hexachlorocyclopentadiene	3280	2490		ug/Kg		76	35 - 130
2,4,6-Trichlorophenol	3280	2840		ug/Kg		87	53 - 130
2,4,5-Trichlorophenol	3280	2850		ug/Kg		87	60 - 130
1,1'-Biphenyl	3280	2430		ug/Kg		74	57 - 130
2-Chloronaphthalene	3280	2540		ug/Kg		77	55 - 130
2-Nitroaniline	3280	3380		ug/Kg		103	52 - 130
Dimethyl phthalate	3280	2830		ug/Kg		86	63 - 130
2,6-Dinitrotoluene	3280	3170		ug/Kg		97	57 - 130
Acenaphthylene	3280	2700		ug/Kg		82	58 - 130
3-Nitroaniline	3280	1740		ug/Kg		53	42 - 130
Acenaphthene	3280	2530		ug/Kg		77	58 - 130
2,4-Dinitrophenol	3280	4260		ug/Kg		130	10 - 154
4-Nitrophenol	3280	2750		ug/Kg		84	30 - 130
Dibenzofuran	3280	2630		ug/Kg		80	56 - 130

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

Lab Sample ID: LCS 680-262668/19-A
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262668

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dinitrotoluene	3280	3240		ug/Kg		99	55 - 130
Diethyl phthalate	3280	2890		ug/Kg		88	62 - 130
Fluorene	3280	2660		ug/Kg		81	58 - 130
4-Chlorophenyl phenyl ether	3280	2780		ug/Kg		85	61 - 130
4-Nitroaniline	3280	2480		ug/Kg		76	49 - 130
4,6-Dinitro-2-methylphenol	3280	3810		ug/Kg		116	14 - 137
N-Nitrosodiphenylamine	3280	2690		ug/Kg		82	62 - 130
4-Bromophenyl phenyl ether	3280	2890		ug/Kg		88	65 - 130
Hexachlorobenzene	3280	2730		ug/Kg		83	59 - 130
Atrazine	3280	2960		ug/Kg		90	54 - 141
Pentachlorophenol	3280	2750		ug/Kg		84	38 - 131
Phenanthrene	3280	2590		ug/Kg		79	61 - 130
Anthracene	3280	2560		ug/Kg		78	60 - 130
Carbazole	3280	2730		ug/Kg		83	60 - 130
Di-n-butyl phthalate	3280	2950		ug/Kg		90	65 - 130
Fluoranthene	3280	2670		ug/Kg		81	62 - 130
Pyrene	3280	2680		ug/Kg		82	59 - 130
Butyl benzyl phthalate	3280	3180		ug/Kg		97	65 - 134
3,3'-Dichlorobenzidine	3280	2040		ug/Kg		62	45 - 130
Benzo[a]anthracene	3280	2790		ug/Kg		85	62 - 130
Chrysene	3280	2680		ug/Kg		82	62 - 130
Bis(2-ethylhexyl) phthalate	3280	3050		ug/Kg		93	62 - 132
Di-n-octyl phthalate	3280	3320		ug/Kg		101	59 - 146
Benzo[b]fluoranthene	3280	2740		ug/Kg		84	53 - 130
Benzo[k]fluoranthene	3280	2660		ug/Kg		81	57 - 130
Benzo[a]pyrene	3280	2890		ug/Kg		88	68 - 131
Indeno[1,2,3-cd]pyrene	3280	2920		ug/Kg		89	52 - 130
Dibenz(a,h)anthracene	3280	2750		ug/Kg		84	56 - 130
Benzo[g,h,i]perylene	3280	2720		ug/Kg		83	54 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*70*		*46 - 130*
2-Fluorobiphenyl	*72*		*58 - 130*
Terphenyl-d14 (Surr)	*77*		*60 - 130*
Phenol-d5 (Surr)	*77*		*49 - 130*
2-Fluorophenol (Surr)	*73*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*101*		*58 - 130*

Lab Sample ID: 680-86377-A-6-B MS
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: 680-86377-A-6-B MS
Prep Type: Total/NA
Prep Batch: 262668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	400		4030	2010		ug/Kg	☼	50	10 - 130
Phenol	400		4030	2740		ug/Kg	☼	68	46 - 130
Bis(2-chloroethyl)ether	400		4030	2690		ug/Kg	☼	67	42 - 130
2-Chlorophenol	400		4030	2720		ug/Kg	☼	67	51 - 130
2-Methylphenol	400		4030	2830		ug/Kg	☼	70	49 - 130

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

Lab Sample ID: 680-86377-A-6-B MS
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: 680-86377-A-6-B MS
Prep Type: Total/NA
Prep Batch: 262668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
bis (2-chloroisopropyl) ether	400		4030	2750		ug/Kg	☼	68	44 - 130
Acetophenone	400		4030	2340		ug/Kg	☼	58	42 - 130
3 & 4 Methylphenol	400		4030	2790		ug/Kg	☼	69	50 - 130
N-Nitrosodi-n-propylamine	400		4030	3020		ug/Kg	☼	75	48 - 130
Hexachloroethane	400		4030	2860		ug/Kg	☼	71	44 - 130
Nitrobenzene	400		4030	2350		ug/Kg	☼	58	43 - 130
Isophorone	400		4030	2700		ug/Kg	☼	67	48 - 130
2-Nitrophenol	400		4030	1700	F	ug/Kg	☼	42	45 - 130
2,4-Dimethylphenol	400		4030	3010		ug/Kg	☼	75	47 - 130
Bis(2-chloroethoxy)methane	400		4030	3000		ug/Kg	☼	74	56 - 130
2,4-Dichlorophenol	400		4030	3200		ug/Kg	☼	79	53 - 130
Naphthalene	400		4030	2750		ug/Kg	☼	68	54 - 130
4-Chloroaniline	790		4030	2040		ug/Kg	☼	50	36 - 130
Hexachlorobutadiene	400		4030	3170		ug/Kg	☼	79	47 - 130
Caprolactam	5500		4030	3120	F	ug/Kg	☼	-60	52 - 130
4-Chloro-3-methylphenol	400		4030	3140		ug/Kg	☼	78	52 - 130
2-Methylnaphthalene	400		4030	2820		ug/Kg	☼	70	55 - 130
Hexachlorocyclopentadiene	400		4030	1730		ug/Kg	☼	43	35 - 130
2,4,6-Trichlorophenol	400		4030	3280		ug/Kg	☼	81	53 - 130
2,4,5-Trichlorophenol	400		4030	3180		ug/Kg	☼	79	60 - 130
1,1'-Biphenyl	400		4030	2660		ug/Kg	☼	66	57 - 130
2-Chloronaphthalene	400		4030	2820		ug/Kg	☼	70	55 - 130
2-Nitroaniline	2000		4030	3410		ug/Kg	☼	84	52 - 130
Dimethyl phthalate	400		4030	2860		ug/Kg	☼	71	63 - 130
2,6-Dinitrotoluene	400		4030	2600		ug/Kg	☼	64	57 - 130
Acenaphthylene	400		4030	2930		ug/Kg	☼	73	58 - 130
3-Nitroaniline	2000		4030	2370		ug/Kg	☼	59	42 - 130
Acenaphthene	640		4030	3130		ug/Kg	☼	62	58 - 130
2,4-Dinitrophenol	2000		4030	2100	U F	ug/Kg	☼	0	10 - 154
4-Nitrophenol	2000		4030	3440		ug/Kg	☼	85	30 - 130
Dibenzofuran	400		4030	2830		ug/Kg	☼	70	56 - 130
2,4-Dinitrotoluene	400		4030	2760		ug/Kg	☼	68	55 - 130
Diethyl phthalate	400		4030	3090		ug/Kg	☼	77	62 - 130
Fluorene	730		4030	3260		ug/Kg	☼	63	58 - 130
4-Chlorophenyl phenyl ether	400		4030	2990		ug/Kg	☼	74	61 - 130
4-Nitroaniline	2000		4030	2090	J	ug/Kg	☼	52	49 - 130
4,6-Dinitro-2-methylphenol	2000		4030	966	J	ug/Kg	☼	24	14 - 137
N-Nitrosodiphenylamine	400		4030	5350	F	ug/Kg	☼	133	62 - 130
4-Bromophenyl phenyl ether	400		4030	3390		ug/Kg	☼	84	65 - 130
Hexachlorobenzene	400		4030	3090		ug/Kg	☼	77	59 - 130
Atrazine	400		4030	3720		ug/Kg	☼	92	54 - 141
Pentachlorophenol	2000		4030	3480		ug/Kg	☼	86	38 - 131
Phenanthrene	1700		4030	3690	F	ug/Kg	☼	50	61 - 130
Anthracene	400		4030	3200		ug/Kg	☼	79	60 - 130
Carbazole	400		4030	2890		ug/Kg	☼	72	60 - 130
Di-n-butyl phthalate	400		4030	3450		ug/Kg	☼	85	65 - 130
Fluoranthene	66		4030	3240		ug/Kg	☼	79	62 - 130
Pyrene	97		4030	3000		ug/Kg	☼	72	59 - 130

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

Lab Sample ID: 680-86377-A-6-B MS
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: 680-86377-A-6-B MS
Prep Type: Total/NA
Prep Batch: 262668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Butyl benzyl phthalate	400		4030	3590		ug/Kg	☼	89	65 - 134
3,3'-Dichlorobenzidine	790		4030	2370		ug/Kg	☼	59	45 - 130
Benzo[a]anthracene	400		4030	3140		ug/Kg	☼	78	62 - 130
Chrysene	400		4030	3090		ug/Kg	☼	77	62 - 130
Bis(2-ethylhexyl) phthalate	400		4030	3530		ug/Kg	☼	88	62 - 132
Di-n-octyl phthalate	400		4030	3900		ug/Kg	☼	97	59 - 146
Benzo[b]fluoranthene	400		4030	2970		ug/Kg	☼	74	53 - 130
Benzo[k]fluoranthene	400		4030	2990		ug/Kg	☼	74	57 - 130
Benzo[a]pyrene	400		4030	3230		ug/Kg	☼	80	68 - 131
Indeno[1,2,3-cd]pyrene	400		4030	3440		ug/Kg	☼	85	52 - 130
Dibenz(a,h)anthracene	400		4030	3030		ug/Kg	☼	75	56 - 130
Benzo[g,h,i]perylene	400		4030	3010		ug/Kg	☼	75	54 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*56*		*46 - 130*
2-Fluorobiphenyl	*66*		*58 - 130*
Terphenyl-d14 (Surr)	*71*		*60 - 130*
Phenol-d5 (Surr)	*70*		*49 - 130*
2-Fluorophenol (Surr)	*65*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*93*		*58 - 130*

Lab Sample ID: 680-86377-A-6-C MSD
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: 680-86377-A-6-C MSD
Prep Type: Total/NA
Prep Batch: 262668

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzaldehyde	400		4010	1990		ug/Kg	☼	50	10 - 130	1	50
Phenol	400		4010	2860		ug/Kg	☼	71	46 - 130	4	50
Bis(2-chloroethyl)ether	400		4010	2860		ug/Kg	☼	71	42 - 130	6	50
2-Chlorophenol	400		4010	2920		ug/Kg	☼	73	51 - 130	7	50
2-Methylphenol	400		4010	2960		ug/Kg	☼	74	49 - 130	5	50
bis (2-chloroisopropyl) ether	400		4010	2910		ug/Kg	☼	73	44 - 130	6	50
Acetophenone	400		4010	2590		ug/Kg	☼	65	42 - 130	10	50
3 & 4 Methylphenol	400		4010	2930		ug/Kg	☼	73	50 - 130	5	50
N-Nitrosodi-n-propylamine	400		4010	3220		ug/Kg	☼	80	48 - 130	6	50
Hexachloroethane	400		4010	3370		ug/Kg	☼	84	44 - 130	16	50
Nitrobenzene	400		4010	2460		ug/Kg	☼	61	43 - 130	5	50
Isophorone	400		4010	2960		ug/Kg	☼	74	48 - 130	9	50
2-Nitrophenol	400		4010	1300	F	ug/Kg	☼	32	45 - 130	27	50
2,4-Dimethylphenol	400		4010	3240		ug/Kg	☼	81	47 - 130	7	50
Bis(2-chloroethoxy)methane	400		4010	3270		ug/Kg	☼	82	56 - 130	9	50
2,4-Dichlorophenol	400		4010	3620		ug/Kg	☼	90	53 - 130	13	50
Naphthalene	400		4010	3090		ug/Kg	☼	77	54 - 130	11	50
4-Chloroaniline	790		4010	2150		ug/Kg	☼	54	36 - 130	5	50
Hexachlorobutadiene	400		4010	3630		ug/Kg	☼	91	47 - 130	13	50
Caprolactam	5500		4010	3080	F	ug/Kg	☼	-61	52 - 130	1	50
4-Chloro-3-methylphenol	400		4010	3490		ug/Kg	☼	87	52 - 130	10	50
2-Methylnaphthalene	400		4010	3080		ug/Kg	☼	77	55 - 130	9	50

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

Lab Sample ID: 680-86377-A-6-C MSD
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: 680-86377-A-6-C MSD
Prep Type: Total/NA
Prep Batch: 262668

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorocyclopentadiene	400		4010	1570		ug/Kg	☼	39	35 - 130	10	50
2,4,6-Trichlorophenol	400		4010	3470		ug/Kg	☼	87	53 - 130	6	50
2,4,5-Trichlorophenol	400		4010	3390		ug/Kg	☼	85	60 - 130	7	50
1,1'-Biphenyl	400		4010	2770		ug/Kg	☼	69	57 - 130	4	50
2-Chloronaphthalene	400		4010	3030		ug/Kg	☼	76	55 - 130	7	50
2-Nitroaniline	2000		4010	3810		ug/Kg	☼	95	52 - 130	11	50
Dimethyl phthalate	400		4010	3070		ug/Kg	☼	77	63 - 130	7	50
2,6-Dinitrotoluene	400		4010	2620		ug/Kg	☼	65	57 - 130	1	50
Acenaphthylene	400		4010	3160		ug/Kg	☼	79	58 - 130	7	50
3-Nitroaniline	2000		4010	2360		ug/Kg	☼	59	42 - 130	0	50
Acenaphthene	640		4010	3480		ug/Kg	☼	71	58 - 130	11	50
2,4-Dinitrophenol	2000		4010	2000	U F	ug/Kg	☼	0	10 - 154	NC	50
4-Nitrophenol	2000		4010	3600		ug/Kg	☼	90	30 - 130	5	50
Dibenzofuran	400		4010	3090		ug/Kg	☼	77	56 - 130	9	50
2,4-Dinitrotoluene	400		4010	2720		ug/Kg	☼	68	55 - 130	1	50
Diethyl phthalate	400		4010	3320		ug/Kg	☼	83	62 - 130	7	50
Fluorene	730		4010	3820		ug/Kg	☼	77	58 - 130	16	50
4-Chlorophenyl phenyl ether	400		4010	3400		ug/Kg	☼	85	61 - 130	13	50
4-Nitroaniline	2000		4010	2780		ug/Kg	☼	69	49 - 130	28	50
4,6-Dinitro-2-methylphenol	2000		4010	565	J F	ug/Kg	☼	14	14 - 137	53	50
N-Nitrosodiphenylamine	400		4010	7090	F	ug/Kg	☼	177	62 - 130	28	50
4-Bromophenyl phenyl ether	400		4010	3540		ug/Kg	☼	88	65 - 130	4	50
Hexachlorobenzene	400		4010	3280		ug/Kg	☼	82	59 - 130	6	50
Atrazine	400		4010	4030		ug/Kg	☼	101	54 - 141	8	50
Pentachlorophenol	2000		4010	3330		ug/Kg	☼	83	38 - 131	5	50
Phenanthrene	1700		4010	4270		ug/Kg	☼	64	61 - 130	14	50
Anthracene	400		4010	3510		ug/Kg	☼	88	60 - 130	9	50
Carbazole	400		4010	3230		ug/Kg	☼	81	60 - 130	11	50
Di-n-butyl phthalate	400		4010	3630		ug/Kg	☼	91	65 - 130	5	50
Fluoranthene	66		4010	3440		ug/Kg	☼	84	62 - 130	6	50
Pyrene	97		4010	3080		ug/Kg	☼	74	59 - 130	3	50
Butyl benzyl phthalate	400		4010	3620		ug/Kg	☼	90	65 - 134	1	50
3,3'-Dichlorobenzidine	790		4010	3180		ug/Kg	☼	79	45 - 130	29	50
Benzo[a]anthracene	400		4010	3230		ug/Kg	☼	81	62 - 130	3	50
Chrysene	400		4010	3180		ug/Kg	☼	79	62 - 130	3	50
Bis(2-ethylhexyl) phthalate	400		4010	3660		ug/Kg	☼	91	62 - 132	4	50
Di-n-octyl phthalate	400		4010	4000		ug/Kg	☼	100	59 - 146	3	50
Benzo[b]fluoranthene	400		4010	3080		ug/Kg	☼	77	53 - 130	4	50
Benzo[k]fluoranthene	400		4010	3180		ug/Kg	☼	79	57 - 130	6	50
Benzo[a]pyrene	400		4010	3440		ug/Kg	☼	86	68 - 131	6	50
Indeno[1,2,3-cd]pyrene	400		4010	3540		ug/Kg	☼	88	52 - 130	3	50
Dibenz(a,h)anthracene	400		4010	3230		ug/Kg	☼	81	56 - 130	7	50
Benzo[g,h,i]perylene	400		4010	3170		ug/Kg	☼	79	54 - 130	5	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*56*		*46 - 130*
2-Fluorobiphenyl	*68*		*58 - 130*
Terphenyl-d14 (Surr)	*71*		*60 - 130*

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

Lab Sample ID: 680-86377-A-6-C MSD
Matrix: Solid
Analysis Batch: 263372

Client Sample ID: 680-86377-A-6-C MSD
Prep Type: Total/NA
Prep Batch: 262668

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Phenol-d5 (Surr)	*72*		*49 - 130*
2-Fluorophenol (Surr)	*70*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*99*		*58 - 130*

Lab Sample ID: MB 680-263508/12-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 263508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	57	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Phenol	330	U	330	34	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Bis(2-chloroethyl)ether	330	U	330	45	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Chlorophenol	330	U	330	40	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Methylphenol	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Acetophenone	330	U	330	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
3 & 4 Methylphenol	330	U	330	43	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachloroethane	330	U	330	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Nitrobenzene	330	U	330	26	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Isophorone	330	U	330	33	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Nitrophenol	330	U	330	41	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dimethylphenol	330	U	330	44	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Bis(2-chloroethoxy)methane	330	U	330	39	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Naphthalene	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Chloroaniline	650	U	650	51	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Caprolactam	330	U	330	65	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Methylnaphthalene	330	U	330	38	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachlorocyclopentadiene	330	U	330	41	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
1,1'-Biphenyl	330	U	330	730	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Nitroaniline	1700	U	1700	45	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Dimethyl phthalate	330	U	330	34	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,6-Dinitrotoluene	330	U	330	42	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Acenaphthylene	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
3-Nitroaniline	1700	U	1700	46	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Acenaphthene	330	U	330	41	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dinitrophenol	1700	U	1700	820	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Dibenzofuran	330	U	330	33	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dinitrotoluene	330	U	330	48	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Diethyl phthalate	330	U	330	37	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Fluorene	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1

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

Lab Sample ID: MB 680-263508/12-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 263508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorophenyl phenyl ether	330	U	330	44	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Nitroaniline	1700	U	1700	48	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachlorobenzene	330	U	330	39	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Atrazine	330	U	330	23	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Phenanthrene	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Anthracene	330	U	330	25	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Carbazole	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Fluoranthene	330	U	330	32	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Pyrene	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
3,3'-Dichlorobenzidine	650	U	650	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Chrysene	330	U	330	21	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[b]fluoranthene	330	U	330	38	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[k]fluoranthene	330	U	330	64	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[a]pyrene	330	U	330	51	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Dibenz(a,h)anthracene	330	U	330	39	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		01/22/13 20:36	01/23/13 20:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*63*		*46 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2-Fluorobiphenyl	*66*		*58 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
Terphenyl-d14 (Surr)	*74*		*60 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
Phenol-d5 (Surr)	*70*		*49 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2-Fluorophenol (Surr)	*70*		*40 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*58 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*58 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*

Lab Sample ID: LCS 680-263508/13-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3320	773		ug/Kg		23	10 - 130
Phenol	3320	2540		ug/Kg		76	46 - 130
Bis(2-chloroethyl)ether	3320	2520		ug/Kg		76	42 - 130
2-Chlorophenol	3320	2460		ug/Kg		74	51 - 130
2-Methylphenol	3320	2610		ug/Kg		78	49 - 130
bis (2-chloroisopropyl) ether	3320	2640		ug/Kg		79	44 - 130
Acetophenone	3320	1900		ug/Kg		57	42 - 130

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

Lab Sample ID: LCS 680-263508/13-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
3 & 4 Methylphenol	3320	2610		ug/Kg		79	50 - 130
N-Nitrosodi-n-propylamine	3320	2670		ug/Kg		80	48 - 130
Hexachloroethane	3320	2110		ug/Kg		63	44 - 130
Nitrobenzene	3320	2410		ug/Kg		73	43 - 130
Isophorone	3320	2330		ug/Kg		70	48 - 130
2-Nitrophenol	3320	2420		ug/Kg		73	45 - 130
2,4-Dimethylphenol	3320	2680		ug/Kg		81	47 - 130
Bis(2-chloroethoxy)methane	3320	2720		ug/Kg		82	56 - 130
2,4-Dichlorophenol	3320	2590		ug/Kg		78	53 - 130
Naphthalene	3320	2390		ug/Kg		72	54 - 130
4-Chloroaniline	3320	1800		ug/Kg		54	36 - 130
Hexachlorobutadiene	3320	2470		ug/Kg		74	47 - 130
Caprolactam	3320	2800		ug/Kg		84	52 - 130
4-Chloro-3-methylphenol	3320	2790		ug/Kg		84	52 - 130
2-Methylnaphthalene	3320	2530		ug/Kg		76	55 - 130
Hexachlorocyclopentadiene	3320	2480		ug/Kg		75	35 - 130
2,4,6-Trichlorophenol	3320	2620		ug/Kg		79	53 - 130
2,4,5-Trichlorophenol	3320	2670		ug/Kg		80	60 - 130
1,1'-Biphenyl	3320	2360		ug/Kg		71	57 - 130
2-Chloronaphthalene	3320	2460		ug/Kg		74	55 - 130
2-Nitroaniline	3320	2890		ug/Kg		87	52 - 130
Dimethyl phthalate	3320	2840		ug/Kg		86	63 - 130
2,6-Dinitrotoluene	3320	2750		ug/Kg		83	57 - 130
Acenaphthylene	3320	2650		ug/Kg		80	58 - 130
3-Nitroaniline	3320	2250		ug/Kg		68	42 - 130
Acenaphthene	3320	2620		ug/Kg		79	58 - 130
2,4-Dinitrophenol	3320	3030		ug/Kg		91	10 - 154
4-Nitrophenol	3320	3490		ug/Kg		105	30 - 130
Dibenzofuran	3320	2650		ug/Kg		80	56 - 130
2,4-Dinitrotoluene	3320	2810		ug/Kg		85	55 - 130
Diethyl phthalate	3320	2910		ug/Kg		88	62 - 130
Fluorene	3320	2670		ug/Kg		80	58 - 130
4-Chlorophenyl phenyl ether	3320	2710		ug/Kg		81	61 - 130
4-Nitroaniline	3320	2940		ug/Kg		88	49 - 130
4,6-Dinitro-2-methylphenol	3320	2910		ug/Kg		87	14 - 137
N-Nitrosodiphenylamine	3320	2720		ug/Kg		82	62 - 130
4-Bromophenyl phenyl ether	3320	2650		ug/Kg		80	65 - 130
Hexachlorobenzene	3320	2540		ug/Kg		76	59 - 130
Atrazine	3320	4530		ug/Kg		136	54 - 141
Pentachlorophenol	3320	2720		ug/Kg		82	38 - 131
Phenanthrene	3320	2640		ug/Kg		79	61 - 130
Anthracene	3320	2640		ug/Kg		79	60 - 130
Carbazole	3320	2890		ug/Kg		87	60 - 130
Di-n-butyl phthalate	3320	2940		ug/Kg		88	65 - 130
Fluoranthene	3320	2710		ug/Kg		82	62 - 130
Pyrene	3320	2840		ug/Kg		85	59 - 130
Butyl benzyl phthalate	3320	3240		ug/Kg		98	65 - 134
3,3'-Dichlorobenzidine	3320	2400		ug/Kg		72	45 - 130

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

Lab Sample ID: LCS 680-263508/13-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	3320	2810		ug/Kg		84	62 - 130
Chrysene	3320	2860		ug/Kg		86	62 - 130
Bis(2-ethylhexyl) phthalate	3320	3170		ug/Kg		95	62 - 132
Di-n-octyl phthalate	3320	3300		ug/Kg		99	59 - 146
Benzo[b]fluoranthene	3320	2710		ug/Kg		81	53 - 130
Benzo[k]fluoranthene	3320	2820		ug/Kg		85	57 - 130
Benzo[a]pyrene	3320	2970		ug/Kg		89	68 - 131
Indeno[1,2,3-cd]pyrene	3320	2780		ug/Kg		84	52 - 130
Dibenz(a,h)anthracene	3320	2560		ug/Kg		77	56 - 130
Benzo[g,h,i]perylene	3320	2510		ug/Kg		76	54 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*67*		*46 - 130*
2-Fluorobiphenyl	*70*		*58 - 130*
Terphenyl-d14 (Surr)	*81*		*60 - 130*
Phenol-d5 (Surr)	*80*		*49 - 130*
2-Fluorophenol (Surr)	*75*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*86*		*58 - 130*

Lab Sample ID: 680-86377-6 MS
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: MW-68 (11-12)
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	400	U	4030	2390		ug/Kg	☼	59	10 - 130
Phenol	400	U	4030	2750		ug/Kg	☼	68	46 - 130
Bis(2-chloroethyl)ether	400	U	4030	2830		ug/Kg	☼	70	42 - 130
2-Chlorophenol	400	U	4030	2740		ug/Kg	☼	68	51 - 130
2-Methylphenol	400	U	4030	2900		ug/Kg	☼	72	49 - 130
bis (2-chloroisopropyl) ether	400	U	4030	2960		ug/Kg	☼	73	44 - 130
Acetophenone	400	U	4030	2470		ug/Kg	☼	61	42 - 130
3 & 4 Methylphenol	400	U	4030	2940		ug/Kg	☼	73	50 - 130
N-Nitrosodi-n-propylamine	400	U	4030	3180		ug/Kg	☼	79	48 - 130
Hexachloroethane	400	U	4030	3410		ug/Kg	☼	84	44 - 130
Nitrobenzene	400	U	4030	2750		ug/Kg	☼	68	43 - 130
Isophorone	400	U	4030	2860		ug/Kg	☼	71	48 - 130
2-Nitrophenol	400	U	4030	2410		ug/Kg	☼	60	45 - 130
2,4-Dimethylphenol	400	U	4030	3220		ug/Kg	☼	80	47 - 130
Bis(2-chloroethoxy)methane	400	U	4030	3210		ug/Kg	☼	80	56 - 130
2,4-Dichlorophenol	400	U	4030	3740		ug/Kg	☼	93	53 - 130
Naphthalene	400	U	4030	3070		ug/Kg	☼	76	54 - 130
4-Chloroaniline	800	U	4030	3000		ug/Kg	☼	74	36 - 130
Hexachlorobutadiene	400	U	4030	3120		ug/Kg	☼	77	47 - 130
Caprolactam	400	U	4030	2770		ug/Kg	☼	69	52 - 130
4-Chloro-3-methylphenol	400	U	4030	3170		ug/Kg	☼	79	52 - 130
2-Methylnaphthalene	400	U	4030	3060		ug/Kg	☼	76	55 - 130
Hexachlorocyclopentadiene	400	U	4030	2500		ug/Kg	☼	62	35 - 130
2,4,6-Trichlorophenol	400	U	4030	3260		ug/Kg	☼	81	53 - 130

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

Lab Sample ID: 680-86377-6 MS
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: MW-68 (11-12)
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-Trichlorophenol	400	U	4030	3130		ug/Kg	☼	78	60 - 130
1,1'-Biphenyl	400	U	4030	2600		ug/Kg	☼	64	57 - 130
2-Chloronaphthalene	400	U	4030	2770		ug/Kg	☼	69	55 - 130
2-Nitroaniline	2100	U	4030	2980		ug/Kg	☼	74	52 - 130
Dimethyl phthalate	400	U	4030	2980		ug/Kg	☼	74	63 - 130
2,6-Dinitrotoluene	400	U	4030	2910		ug/Kg	☼	72	57 - 130
Acenaphthylene	400	U	4030	3040		ug/Kg	☼	75	58 - 130
3-Nitroaniline	2100	U	4030	2900		ug/Kg	☼	72	42 - 130
Acenaphthene	400	U	4030	3530		ug/Kg	☼	87	58 - 130
2,4-Dinitrophenol	2100	U	4030	2100	U F	ug/Kg	☼	0	10 - 154
4-Nitrophenol	2100	U	4030	4880		ug/Kg	☼	121	30 - 130
Dibenzofuran	400	U	4030	2990		ug/Kg	☼	74	56 - 130
2,4-Dinitrotoluene	400	U	4030	3340		ug/Kg	☼	83	55 - 130
Diethyl phthalate	400	U	4030	3120		ug/Kg	☼	77	62 - 130
Fluorene	780		4030	3700		ug/Kg	☼	72	58 - 130
4-Chlorophenyl phenyl ether	400	U	4030	3140		ug/Kg	☼	78	61 - 130
4-Nitroaniline	2100	U	4030	3020		ug/Kg	☼	75	49 - 130
4,6-Dinitro-2-methylphenol	2100	U	4030	679	J	ug/Kg	☼	17	14 - 137
N-Nitrosodiphenylamine	4500		4030	7090		ug/Kg	☼	64	62 - 130
4-Bromophenyl phenyl ether	400	U	4030	3260		ug/Kg	☼	81	65 - 130
Hexachlorobenzene	400	U	4030	3110		ug/Kg	☼	77	59 - 130
Atrazine	400	U	4030	5680		ug/Kg	☼	141	54 - 141
Pentachlorophenol	2100	U	4030	3300		ug/Kg	☼	82	38 - 131
Phenanthrene	2100		4030	5040		ug/Kg	☼	72	61 - 130
Anthracene	400	U	4030	3570		ug/Kg	☼	88	60 - 130
Carbazole	400	U	4030	3370		ug/Kg	☼	84	60 - 130
Di-n-butyl phthalate	400	U	4030	3490		ug/Kg	☼	87	65 - 130
Fluoranthene	78	J	4030	3360		ug/Kg	☼	81	62 - 130
Pyrene	130	J	4030	3180		ug/Kg	☼	76	59 - 130
Butyl benzyl phthalate	400	U	4030	3590		ug/Kg	☼	89	65 - 134
3,3'-Dichlorobenzidine	800	U	4030	3500		ug/Kg	☼	87	45 - 130
Benzo[a]anthracene	400	U	4030	3160		ug/Kg	☼	78	62 - 130
Chrysene	400	U	4030	3240		ug/Kg	☼	80	62 - 130
Bis(2-ethylhexyl) phthalate	400	U	4030	3550		ug/Kg	☼	88	62 - 132
Di-n-octyl phthalate	400	U	4030	3740		ug/Kg	☼	93	59 - 146
Benzo[b]fluoranthene	400	U	4030	3190		ug/Kg	☼	79	53 - 130
Benzo[k]fluoranthene	400	U	4030	3130		ug/Kg	☼	78	57 - 130
Benzo[a]pyrene	400	U	4030	3500		ug/Kg	☼	87	68 - 131
Indeno[1,2,3-cd]pyrene	400	U	4030	3180		ug/Kg	☼	79	52 - 130
Dibenz(a,h)anthracene	400	U	4030	3020		ug/Kg	☼	75	56 - 130
Benzo[g,h,i]perylene	400	U	4030	3000		ug/Kg	☼	74	54 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*62*		*46 - 130*
2-Fluorobiphenyl	*65*		*58 - 130*
Terphenyl-d14 (Surr)	*72*		*60 - 130*
Phenol-d5 (Surr)	*71*		*49 - 130*
2-Fluorophenol (Surr)	*68*		*40 - 130*

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

Lab Sample ID: 680-86377-6 MS
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: MW-68 (11-12)
Prep Type: Total/NA
Prep Batch: 263508

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	*79*		*58 - 130*

Lab Sample ID: 680-86377-6 MSD
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: MW-68 (11-12)
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzaldehyde	400	U	4000	1950		ug/Kg	☼	49	10 - 130	20	50
Phenol	400	U	4000	2410		ug/Kg	☼	60	46 - 130	13	50
Bis(2-chloroethyl)ether	400	U	4000	2410		ug/Kg	☼	60	42 - 130	16	50
2-Chlorophenol	400	U	4000	2430		ug/Kg	☼	61	51 - 130	12	50
2-Methylphenol	400	U	4000	2530		ug/Kg	☼	63	49 - 130	14	50
bis (2-chloroisopropyl) ether	400	U	4000	2570		ug/Kg	☼	64	44 - 130	14	50
Acetophenone	400	U	4000	2220		ug/Kg	☼	55	42 - 130	11	50
3 & 4 Methylphenol	400	U	4000	2570		ug/Kg	☼	64	50 - 130	13	50
N-Nitrosodi-n-propylamine	400	U	4000	2760		ug/Kg	☼	69	48 - 130	14	50
Hexachloroethane	400	U	4000	3200		ug/Kg	☼	80	44 - 130	6	50
Nitrobenzene	400	U	4000	2530		ug/Kg	☼	63	43 - 130	8	50
Isophorone	400	U	4000	2630		ug/Kg	☼	66	48 - 130	8	50
2-Nitrophenol	400	U	4000	2210		ug/Kg	☼	55	45 - 130	9	50
2,4-Dimethylphenol	400	U	4000	2950		ug/Kg	☼	74	47 - 130	9	50
Bis(2-chloroethoxy)methane	400	U	4000	2890		ug/Kg	☼	72	56 - 130	10	50
2,4-Dichlorophenol	400	U	4000	3600		ug/Kg	☼	90	53 - 130	4	50
Naphthalene	400	U	4000	2860		ug/Kg	☼	72	54 - 130	7	50
4-Chloroaniline	800	U	4000	2560		ug/Kg	☼	64	36 - 130	16	50
Hexachlorobutadiene	400	U	4000	2940		ug/Kg	☼	73	47 - 130	6	50
Caprolactam	400	U	4000	2940		ug/Kg	☼	74	52 - 130	6	50
4-Chloro-3-methylphenol	400	U	4000	2890		ug/Kg	☼	72	52 - 130	9	50
2-Methylnaphthalene	400	U	4000	2710		ug/Kg	☼	68	55 - 130	12	50
Hexachlorocyclopentadiene	400	U	4000	2420		ug/Kg	☼	61	35 - 130	3	50
2,4,6-Trichlorophenol	400	U	4000	3200		ug/Kg	☼	80	53 - 130	2	50
2,4,5-Trichlorophenol	400	U	4000	2870		ug/Kg	☼	72	60 - 130	9	50
1,1'-Biphenyl	400	U	4000	2350		ug/Kg	☼	59	57 - 130	10	50
2-Chloronaphthalene	400	U	4000	2550		ug/Kg	☼	64	55 - 130	8	50
2-Nitroaniline	2100	U	4000	2610		ug/Kg	☼	65	52 - 130	13	50
Dimethyl phthalate	400	U	4000	2810		ug/Kg	☼	70	63 - 130	6	50
2,6-Dinitrotoluene	400	U	4000	2730		ug/Kg	☼	68	57 - 130	6	50
Acenaphthylene	400	U	4000	2790		ug/Kg	☼	70	58 - 130	8	50
3-Nitroaniline	2100	U	4000	2830		ug/Kg	☼	71	42 - 130	2	50
Acenaphthene	400	U	4000	3460		ug/Kg	☼	86	58 - 130	2	50
2,4-Dinitrophenol	2100	U	4000	2000	U F	ug/Kg	☼	0	10 - 154	NC	50
4-Nitrophenol	2100	U	4000	6020	F	ug/Kg	☼	151	30 - 130	21	50
Dibenzofuran	400	U	4000	2710		ug/Kg	☼	68	56 - 130	10	50
2,4-Dinitrotoluene	400	U	4000	3280		ug/Kg	☼	82	55 - 130	2	50
Diethyl phthalate	400	U	4000	2870		ug/Kg	☼	72	62 - 130	9	50
Fluorene	780		4000	3370		ug/Kg	☼	65	58 - 130	9	50
4-Chlorophenyl phenyl ether	400	U	4000	2860		ug/Kg	☼	72	61 - 130	9	50
4-Nitroaniline	2100	U	4000	2920		ug/Kg	☼	73	49 - 130	3	50

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

Lab Sample ID: 680-86377-6 MSD
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: MW-68 (11-12)
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,6-Dinitro-2-methylphenol	2100	U	4000	904	J	ug/Kg	☼	23	14 - 137	28	50
N-Nitrosodiphenylamine	4500		4000	7750		ug/Kg	☼	81	62 - 130	9	50
4-Bromophenyl phenyl ether	400	U	4000	3080		ug/Kg	☼	77	65 - 130	6	50
Hexachlorobenzene	400	U	4000	3000		ug/Kg	☼	75	59 - 130	4	50
Atrazine	400	U	4000	5280		ug/Kg	☼	132	54 - 141	7	50
Pentachlorophenol	2100	U	4000	3200		ug/Kg	☼	80	38 - 131	3	50
Phenanthrene	2100		4000	5220		ug/Kg	☼	77	61 - 130	4	50
Anthracene	400	U	4000	3430		ug/Kg	☼	86	60 - 130	4	50
Carbazole	400	U	4000	3270		ug/Kg	☼	82	60 - 130	3	50
Di-n-butyl phthalate	400	U	4000	3290		ug/Kg	☼	82	65 - 130	6	50
Fluoranthene	78	J	4000	3140		ug/Kg	☼	76	62 - 130	7	50
Pyrene	130	J	4000	2970		ug/Kg	☼	71	59 - 130	7	50
Butyl benzyl phthalate	400	U	4000	3290		ug/Kg	☼	82	65 - 134	9	50
3,3'-Dichlorobenzidine	800	U	4000	3410		ug/Kg	☼	85	45 - 130	3	50
Benzo[a]anthracene	400	U	4000	2940		ug/Kg	☼	74	62 - 130	7	50
Chrysene	400	U	4000	3050		ug/Kg	☼	76	62 - 130	6	50
Bis(2-ethylhexyl) phthalate	400	U	4000	3330		ug/Kg	☼	83	62 - 132	6	50
Di-n-octyl phthalate	400	U	4000	3490		ug/Kg	☼	87	59 - 146	7	50
Benzo[b]fluoranthene	400	U	4000	2900		ug/Kg	☼	73	53 - 130	9	50
Benzo[k]fluoranthene	400	U	4000	2980		ug/Kg	☼	74	57 - 130	5	50
Benzo[a]pyrene	400	U	4000	3240		ug/Kg	☼	81	68 - 131	8	50
Indeno[1,2,3-cd]pyrene	400	U	4000	3190		ug/Kg	☼	80	52 - 130	0	50
Dibenz(a,h)anthracene	400	U	4000	2920		ug/Kg	☼	73	56 - 130	3	50
Benzo[g,h,i]perylene	400	U	4000	2910		ug/Kg	☼	73	54 - 130	3	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*61*		*46 - 130*
2-Fluorobiphenyl	*63*		*58 - 130*
Terphenyl-d14 (Surr)	*70*		*60 - 130*
Phenol-d5 (Surr)	*65*		*49 - 130*
2-Fluorophenol (Surr)	*61*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*76*		*58 - 130*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 680-262991/3
Matrix: Solid
Analysis Batch: 262991

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	5.0	U	5.0	0.38	mg/Kg			01/16/13 11:43	20

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*113*		*70 - 131*		*01/16/13 11:43*	*20*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 680-262991/4
Matrix: Solid
Analysis Batch: 262991

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	40.0	30.2		mg/Kg		75	64 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*101*		*70 - 131*

Lab Sample ID: LCSD 680-262991/5
Matrix: Solid
Analysis Batch: 262991

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	40.0	31.1		mg/Kg		78	64 - 133	3	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*105*		*70 - 131*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 680-262678/6-A
Matrix: Solid
Analysis Batch: 263071

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262678

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	3.2	U	3.2	2.1	mg/Kg		01/15/13 20:01	01/16/13 17:37	1
Oil Range Organics (C20-C36)	20	U	20	20	mg/Kg		01/15/13 20:01	01/16/13 17:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*56 - 135*	*01/15/13 20:01*	*01/16/13 17:37*	*1*

Lab Sample ID: LCS 680-262678/10-A
Matrix: Solid
Analysis Batch: 263071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Oil Range Organics (C20-C36)	66.5	71.7		mg/Kg		108	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*105*		*56 - 135*

Lab Sample ID: LCS 680-262678/7-A
Matrix: Solid
Analysis Batch: 263373

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	33.1	30.0		mg/Kg		91	19 - 171

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 680-262678/7-A
Matrix: Solid
Analysis Batch: 263373

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262678

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	*88*		*56 - 135*

Lab Sample ID: 680-86377-7 MS
Matrix: Solid
Analysis Batch: 263230

Client Sample ID: MW-68 (13-14)
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	3800		40.2	4260	4	mg/Kg	☼	1226	19 - 171

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	*0*	*D*	*56 - 135*

Lab Sample ID: 680-86377-7 MS
Matrix: Solid
Analysis Batch: 263230

Client Sample ID: MW-68 (13-14)
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Oil Range Organics (C20-C36)	480	U	80.6	480	U	mg/Kg	☼	NC	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	*0*	*D*	*56 - 135*

Lab Sample ID: 680-86377-7 MSD
Matrix: Solid
Analysis Batch: 263230

Client Sample ID: MW-68 (13-14)
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	3800		40.0	5690	4	mg/Kg	☼	4807	19 - 171	29	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	*0*	*D*	*56 - 135*

Lab Sample ID: 680-86377-7 MSD
Matrix: Solid
Analysis Batch: 263230

Client Sample ID: MW-68 (13-14)
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Oil Range Organics (C20-C36)	480	U	80.8	488		mg/Kg	☼	NC	50 - 150	NC	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	*0*	*D*	*56 - 135*

GC/MS VOA

Analysis Batch: 170586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-5	TB (010813)	Total/NA	Water	8260B	
LCS 400-170586/1000	Lab Control Sample	Total/NA	Water	8260B	
MB 400-170586/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 170628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-1	MW-68 (11.5-12)	Total/NA	Solid	8260B	170639
680-86377-2	MW-68 (13.5-14)	Total/NA	Solid	8260B	170639
680-86377-3	MW-69 (15.5-16.0)	Total/NA	Solid	8260B	170639
680-86377-4	MW-69 (16.5-17.0)	Total/NA	Solid	8260B	170639
LCS 400-170639/2-A	Lab Control Sample	Total/NA	Solid	8260B	170639
MB 400-170639/1-A	Method Blank	Total/NA	Solid	8260B	170639

Prep Batch: 170639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-1	MW-68 (11.5-12)	Total/NA	Solid	5035	
680-86377-2	MW-68 (13.5-14)	Total/NA	Solid	5035	
680-86377-3	MW-69 (15.5-16.0)	Total/NA	Solid	5035	
680-86377-4	MW-69 (16.5-17.0)	Total/NA	Solid	5035	
LCS 400-170639/2-A	Lab Control Sample	Total/NA	Solid	5035	
MB 400-170639/1-A	Method Blank	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 262668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-8	MW-69 (15-16)	Total/NA	Solid	3546	
680-86377-A-6-B MS	680-86377-A-6-B MS	Total/NA	Solid	3546	
680-86377-A-6-C MSD	680-86377-A-6-C MSD	Total/NA	Solid	3546	
LCS 680-262668/19-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-262668/18-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 263372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-8	MW-69 (15-16)	Total/NA	Solid	8270D	262668
680-86377-A-6-B MS	680-86377-A-6-B MS	Total/NA	Solid	8270D	262668
680-86377-A-6-C MSD	680-86377-A-6-C MSD	Total/NA	Solid	8270D	262668
LCS 680-262668/19-A	Lab Control Sample	Total/NA	Solid	8270D	262668
MB 680-262668/18-A	Method Blank	Total/NA	Solid	8270D	262668

Prep Batch: 263508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-6	MW-68 (11-12)	Total/NA	Solid	3546	
680-86377-6 MS	MW-68 (11-12)	Total/NA	Solid	3546	
680-86377-6 MSD	MW-68 (11-12)	Total/NA	Solid	3546	
680-86377-7	MW-68 (13-14)	Total/NA	Solid	3546	
680-86377-9	MW-69 (16-17)	Total/NA	Solid	3546	
LCS 680-263508/13-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-263508/12-A	Method Blank	Total/NA	Solid	3546	

GC/MS Semi VOA (Continued)

Analysis Batch: 263840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-6	MW-68 (11-12)	Total/NA	Solid	8270D	263508
680-86377-6 MS	MW-68 (11-12)	Total/NA	Solid	8270D	263508
680-86377-6 MSD	MW-68 (11-12)	Total/NA	Solid	8270D	263508
680-86377-7	MW-68 (13-14)	Total/NA	Solid	8270D	263508
680-86377-9	MW-69 (16-17)	Total/NA	Solid	8270D	263508
LCS 680-263508/13-A	Lab Control Sample	Total/NA	Solid	8270D	263508
MB 680-263508/12-A	Method Blank	Total/NA	Solid	8270D	263508

GC VOA

Prep Batch: 262302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-1	MW-68 (11.5-12)	Total/NA	Solid	5035	
680-86377-2	MW-68 (13.5-14)	Total/NA	Solid	5035	
680-86377-3	MW-69 (15.5-16.0)	Total/NA	Solid	5035	
680-86377-4	MW-69 (16.5-17.0)	Total/NA	Solid	5035	

Analysis Batch: 262991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-1	MW-68 (11.5-12)	Total/NA	Solid	8015B	262302
680-86377-2	MW-68 (13.5-14)	Total/NA	Solid	8015B	262302
680-86377-3	MW-69 (15.5-16.0)	Total/NA	Solid	8015B	262302
680-86377-4	MW-69 (16.5-17.0)	Total/NA	Solid	8015B	262302
LCS 680-262991/4	Lab Control Sample	Total/NA	Solid	8015B	
LCSD 680-262991/5	Lab Control Sample Dup	Total/NA	Solid	8015B	
MB 680-262991/3	Method Blank	Total/NA	Solid	8015B	

GC Semi VOA

Prep Batch: 262678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-6	MW-68 (11-12)	Total/NA	Solid	3546	
680-86377-7	MW-68 (13-14)	Total/NA	Solid	3546	
680-86377-7 MS	MW-68 (13-14)	Total/NA	Solid	3546	
680-86377-7 MS	MW-68 (13-14)	Total/NA	Solid	3546	
680-86377-7 MSD	MW-68 (13-14)	Total/NA	Solid	3546	
680-86377-7 MSD	MW-68 (13-14)	Total/NA	Solid	3546	
680-86377-8	MW-69 (15-16)	Total/NA	Solid	3546	
680-86377-9	MW-69 (16-17)	Total/NA	Solid	3546	
LCS 680-262678/10-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 680-262678/7-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-262678/6-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 263071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-262678/10-A	Lab Control Sample	Total/NA	Solid	8015B	262678
MB 680-262678/6-A	Method Blank	Total/NA	Solid	8015B	262678

GC Semi VOA (Continued)

Analysis Batch: 263230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86377-6	MW-68 (11-12)	Total/NA	Solid	8015B	262678
680-86377-7	MW-68 (13-14)	Total/NA	Solid	8015B	262678
680-86377-7 MS	MW-68 (13-14)	Total/NA	Solid	8015B	262678
680-86377-7 MS	MW-68 (13-14)	Total/NA	Solid	8015B	262678
680-86377-7 MSD	MW-68 (13-14)	Total/NA	Solid	8015B	262678
680-86377-7 MSD	MW-68 (13-14)	Total/NA	Solid	8015B	262678
680-86377-8	MW-69 (15-16)	Total/NA	Solid	8015B	262678
680-86377-9	MW-69 (16-17)	Total/NA	Solid	8015B	262678

Analysis Batch: 263373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-262678/7-A	Lab Control Sample	Total/NA	Solid	8015B	262678

Client Sample ID: MW-68 (11.5-12)

Lab Sample ID: 680-86377-1

Date Collected: 01/08/13 11:20
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			170639	01/15/13 06:00	WD	TAL PEN
Total/NA	Analysis	8260B		50	170628	01/15/13 11:56	WD	TAL PEN
Total/NA	Prep	5035			262302	01/10/13 10:16	FS	TAL SAV
Total/NA	Analysis	8015B		50	262991	01/16/13 14:00	SMC	TAL SAV

Client Sample ID: MW-68 (13.5-14)

Lab Sample ID: 680-86377-2

Date Collected: 01/08/13 11:25
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 83.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			170639	01/15/13 06:00	WD	TAL PEN
Total/NA	Analysis	8260B		50	170628	01/15/13 12:14	WD	TAL PEN
Total/NA	Prep	5035			262302	01/10/13 10:16	FS	TAL SAV
Total/NA	Analysis	8015B		100	262991	01/16/13 15:17	SMC	TAL SAV

Client Sample ID: MW-69 (15.5-16.0)

Lab Sample ID: 680-86377-3

Date Collected: 01/08/13 16:10
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			170639	01/15/13 06:00	WD	TAL PEN
Total/NA	Analysis	8260B		50	170628	01/15/13 12:31	WD	TAL PEN
Total/NA	Prep	5035			262302	01/10/13 10:16	FS	TAL SAV
Total/NA	Analysis	8015B		50	262991	01/16/13 14:36	SMC	TAL SAV

Client Sample ID: MW-69 (16.5-17.0)

Lab Sample ID: 680-86377-4

Date Collected: 01/08/13 16:15
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			170639	01/15/13 06:00	WD	TAL PEN
Total/NA	Analysis	8260B		50	170628	01/15/13 12:47	WD	TAL PEN
Total/NA	Prep	5035			262302	01/10/13 10:16	FS	TAL SAV
Total/NA	Analysis	8015B		50	262991	01/16/13 14:57	SMC	TAL SAV

Client Sample ID: TB (010813)

Lab Sample ID: 680-86377-5

Date Collected: 01/08/13 00:00
Matrix: Water
Date Received: 01/10/13 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	170586	01/14/13 20:13	LS	TAL PEN

Lab Chronicle

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

TestAmerica Job ID: 680-86377-1

Client Sample ID: MW-68 (11-12)

Lab Sample ID: 680-86377-6

Date Collected: 01/08/13 11:20
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			263508	01/22/13 20:36	AJW	TAL SAV
Total/NA	Analysis	8270D		1	263840	01/23/13 23:41	LEG	TAL SAV
Total/NA	Prep	3546			262678	01/15/13 20:01	JS	TAL SAV
Total/NA	Analysis	8015B		10	263230	01/17/13 17:53	JEM	TAL SAV

Client Sample ID: MW-68 (13-14)

Lab Sample ID: 680-86377-7

Date Collected: 01/08/13 11:25
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			263508	01/22/13 20:36	AJW	TAL SAV
Total/NA	Analysis	8270D		1	263840	01/24/13 00:08	LEG	TAL SAV
Total/NA	Prep	3546			262678	01/15/13 20:01	JS	TAL SAV
Total/NA	Analysis	8015B		20	263230	01/17/13 18:21	JEM	TAL SAV

Client Sample ID: MW-69 (15-16)

Lab Sample ID: 680-86377-8

Date Collected: 01/08/13 16:10
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 70.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			262668	01/15/13 20:32	AJW	TAL SAV
Total/NA	Analysis	8270D		1	263372	01/18/13 21:37	LEG	TAL SAV
Total/NA	Prep	3546			262678	01/15/13 20:01	JS	TAL SAV
Total/NA	Analysis	8015B		5	263230	01/17/13 17:25	JEM	TAL SAV

Client Sample ID: MW-69 (16-17)

Lab Sample ID: 680-86377-9

Date Collected: 01/08/13 16:15
Matrix: Solid
Date Received: 01/10/13 08:45
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			263508	01/22/13 20:36	AJW	TAL SAV
Total/NA	Analysis	8270D		1	263840	01/24/13 01:05	LEG	TAL SAV
Total/NA	Prep	3546			262678	01/15/13 20:01	JS	TAL SAV
Total/NA	Analysis	8015B		10	263230	01/17/13 20:27	JEM	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

COC # 130108-1

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: lab courier
Shipment Tracking No: –

CSXT PROJECT INFORMATION
CSXT Project Number: 9415381
CSXT Project Name: B&O Canal / Brunswick Rail Yard
CSXT Contact: Raghu Chakrabarty
Proj. State (State of Origin): MD
Proj. City:
LWON: ENV33683

CONSULTANT INFORMATION
Company: ARCADIS, INC
Address: 114 Bufield Blvd
City, State, Zip: Millersville MD 21108
Project #: MD000843.0011.00002
PM: Megan Kellner
Email: megan.kellner@arcadis-us.com
Phone: 410-987-0932 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

SAMPLE INFORMATION

Note ⇨ Pres. Code: 6 | 0 | 6 | 0

METHODS FOR ANALYSIS

Sample Identification	Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	TPH GRO (8015)	TPH-DRO/ORO (8015)	Full suite VOC w/ fuel oxygenates (8260)	SVOCs (8270)	COMMENTS	LAB USE
MW-68 (11.5-12)	2 terracore	1/8/13	1120	KM	N	grab	SO	X		X			
MW-68 (13.5-14)	↓	↓	1125	↓	N	↓	SO	X		X			
MW-69 (15.5-16.0)	↓	↓	1610	↓	N	↓	SO	X		X			
MW-69 (16.5-17.0)	↓	↓	1615	↓	N	↓	SO	X		X			
TB (010813)	2 VOA	↓	—	—	—	—	LIQ			X			
MW-68 (11-12)	2 8oz	↓	1120	KM	N	grab	SO		X		X		
MW-68 (13-14)	2-8oz	↓	1125	↓	N	↓	SO		X		X		
MW-69 (15-16)	↓	↓	1610	↓	N	↓	SO		X		X		
MW-69 (16-17)	↓	↓	1615	↓	N	↓	SO		X		X		

6800 1180

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	1/8/13 1920	Paul [signature]	1/9/13 / 1030
Paul [signature]	1/9/13 / 1350		

Received By Laboratory: [signature] Date/Time: 1/10/13 0845
Lab Remarks:
LAB USE: Custody Intact ☐ Yes ☐ No
Custody Seal #
LAB Log Number #

Comments & Special Analytical Requirements:
680-86377
2.1°C

ORIGINAL – RETURN TO LABORATORY WITH SAMPLES
INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC
TAL-6006 (0509)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-86377-1

Login Number: 86377

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.	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: 680-86377-1

Login Number: 86377
List Number: 1
Creator: Serratore, Maria

List Source: TestAmerica Pensacola
List Creation: 01/11/13 06:18 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	1.6°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: C&O Canal Brunswick, MD - Railyard

TestAmerica Job ID: 680-86377-1

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		0399-01	02-28-13
A2LA	ISO/IEC 17025		399.01	02-28-13
Alabama	State Program	4	41450	06-30-13
Alaska (UST)	State Program	10	UST-104	06-19-13
California	NELAP	9	3217CA	07-31-13
Colorado	State Program	8	N/A	12-31-12
Connecticut	State Program	1	PH-0161	03-31-13
Florida	NELAP	4	E87052	06-30-13
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-13
Georgia	State Program	4	803	06-30-13
Guam	State Program	9	09-005r	04-17-13
Hawaii	State Program	9	N/A	06-30-13
Illinois	NELAP	5	200022	11-30-12
Indiana	State Program	5	N/A	06-30-13
Iowa	State Program	7	353	07-01-13
Kentucky	State Program	4	90084	12-31-12
Kentucky (UST)	State Program	4	18	02-28-13
Louisiana	NELAP	6	30690	06-30-13
Louisiana	NELAP	6	LA100015	12-31-13
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-12
Massachusetts	State Program	1	M-GA006	06-30-13
Michigan	State Program	5	9925	06-30-13
Mississippi	State Program	4	N/A	06-30-13
Montana	State Program	8	CERT0081	12-31-12
Nebraska	State Program	7	TestAmerica-Savannah	06-30-13
New Jersey	NELAP	2	GA769	06-30-13
New Mexico	State Program	6	N/A	06-30-13
New York	NELAP	2	10842	04-01-13
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	01-01-13
South Carolina	State Program	4	98001	06-30-13
Tennessee	State Program	4	TN02961	06-30-13
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-13
Washington	State Program	10	C1794	06-10-13
West Virginia	State Program	3	9950C	12-31-12
West Virginia DEP	State Program	3	94	06-30-13
Wisconsin	State Program	5	999819810	08-31-13
Wyoming	State Program	8	8TMS-Q	06-30-13

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

Certification Summary

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

TestAmerica Job ID: 680-86377-1

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
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-13
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
Kentucky (UST)	State Program	4	53	07-05-13
Louisiana	NELAP	6	30976	06-30-13
Maryland	State Program	3	233	09-30-13
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	12-31-12
Oklahoma	State Program	6	9810	08-31-13
Pennsylvania	NELAP	3	68-00467	12-31-12
Rhode Island	State Program	1	LAO00307	12-30-12
South Carolina	State Program	4	96026	06-30-12
Tennessee	State Program	4	TN02907	06-30-13
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-13
West Virginia DEP	State Program	3	136	06-30-13

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: 680-86385-1
Client Project/Site: C&O Canal Brunswick, MD - Railyard

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

Attn: Ms. Megan Kellner

Authorized for release by:
2/14/2013 12:11:43 PM

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

Job ID: 680-86385-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: C&O Canal Brunswick, MD - Railyard
Report Number: 680-86385-1

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 01/10/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.8 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample MW-70 (14.5-15.0) (680-86385-1) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Method(s) 8260B: The laboratory control sample (LCS) for batch 170614 exceeded control limits for the following analyte: 1,1,2,2-tetrachloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.MW-70 (14.5-15.0) (680-86385-1)

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample TB (010913) (680-86385-3) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS (SOLID)

Sample MW-70 (14.5-15.5) (680-86385-2) was analyzed for Semivolatile Organic Compounds (Solid) in accordance with EPA SW-846 Method 8270D.

The initial calibration verification (ICV) analyzed in batch 263840 was outside method criteria for the following analyte(s): benzidine, benzaldehyde, atrazine, and hexachlorophene, 2-nitroanaline, 4-nitrophenol, benzidine, benzaldehyde, atrazine, 1,4-phenylenediamine, 1,4-napthoquinone, 1,3,5-trinitrobenzene, 2-diallate, 4-nitroquinoline-1-oxide, methapyrilene, 3,3-dimethylbenzidine, hexachlorphene and 2,3,6-trichlorophenol. 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 263840 exceeded the method criteria for the following analyte(s): 4-nitrophenol, benzidine, benzaldehyde and atrazine. 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 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

Job ID: 680-86385-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

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%.

GASOLINE RANGE ORGANICS (GRO)

Sample MW-70 (14.5-15.0) (680-86385-1) was 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.

Manual integration was performed on the following sample(s): MW-70 (14.5-15.0) (680-86385-1).

Due to the level of dilution required for the following sample(s), surrogate recoveries are not reported: MW-70 (14.5-15.0) (680-86385-1).

DIESEL RANGE ORGANICS (DRO)

Sample MW-70 (14.5-15.5) (680-86385-2) was analyzed for Diesel Range Organics (DRO) 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.

The continuing calibration verification (CCV) for dro associated with batch 263071 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The capping continuing calibration verification (CCV) associated with batch 263373 analyzed on 01/18/2013 at 21:14 on instrument FIDQ did not meet criteria on the column. The associated samples were analyzed twice with similar results.

Sample Summary

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

TestAmerica Job ID: 680-86385-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-86385-1	MW-70 (14.5-15.0)	Solid	01/09/13 11:35	01/10/13 09:46
680-86385-2	MW-70 (14.5-15.5)	Solid	01/09/13 11:35	01/10/13 09:46
680-86385-3	TB (010913)	Water	01/09/13 00:00	01/10/13 09:46

Method Summary

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

TestAmerica Job ID: 680-86385-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015B	Gasoline Range Organics - (GC)	SW846	TAL SAV
8015B	Diesel Range Organics (DRO) (GC)	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.
*	LCS or LCSD 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.

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.

GC VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
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, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
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, MD - Railyard

TestAmerica Job ID: 680-86385-1

Client Sample ID: MW-70 (14.5-15.0)
Date Collected: 01/09/13 11:35
Date Received: 01/10/13 09:46

Lab Sample ID: 680-86385-1
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	1200	U	1200	350	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Benzene	240	U	240	23	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Bromodichloromethane	240	U	240	40	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Bromoform	240	U	240	30	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Bromomethane	240	U	240	67	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Carbon disulfide	240	U	240	57	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Carbon tetrachloride	240	U	240	81	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Chlorobenzene	240	U	240	25	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Chloroethane	240	U	240	91	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Chloroform	240	U	240	28	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Chloromethane	240	U	240	48	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
cis-1,2-Dichloroethene	240	U	240	36	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
cis-1,3-Dichloropropene	240	U	240	57	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Cyclohexane	**150**	**J**	240	45	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Dibromochloromethane	240	U	240	42	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,2-Dibromo-3-Chloropropane	240	U	240	160	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,2-Dichlorobenzene	240	U	240	34	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,3-Dichlorobenzene	240	U	240	45	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,4-Dichlorobenzene	240	U	240	39	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Dichlorodifluoromethane	240	U	240	62	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,1-Dichloroethane	240	U	240	40	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,2-Dichloroethane	240	U	240	39	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,1-Dichloroethene	240	U	240	36	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,2-Dichloropropane	240	U	240	35	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Diisopropyl ether	240	U	240	26	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Ethylbenzene	**1300**		240	29	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Ethylene Dibromide	240	U	240	23	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Ethyl tert-butyl ether	240	U	240	27	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
2-Hexanone	1200	U	1200	240	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Isopropylbenzene	**420**		240	32	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Methyl acetate	240	U	240	220	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Methylcyclohexane	**920**		240	42	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Methylene Chloride	240	U	240	160	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Methyl Ethyl Ketone	1200	U	1200	200	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
methyl isobutyl ketone	1200	U	1200	190	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Methyl tert-butyl ether	240	U	240	48	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Naphthalene	**850**		240	48	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Styrene	240	U	240	36	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Tert-amyl methyl ether	240	U	240	21	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
tert-Butyl alcohol	240	U	240	160	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,1,2,2-Tetrachloroethane	240	U *	240	34	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Tetrachloroethene	240	U	240	40	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Toluene	**760**		240	33	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
trans-1,2-Dichloroethene	240	U	240	36	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
trans-1,3-Dichloropropene	240	U	240	44	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,2,4-Trichlorobenzene	240	U	240	35	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,1,1-Trichloroethane	240	U	240	53	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,1,2-Trichloroethane	240	U	240	44	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Trichloroethene	240	U	240	23	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50

Client Sample ID: MW-70 (14.5-15.0) — **Lab Sample ID: 680-86385-1**
Date Collected: 01/09/13 11:35 — **Matrix: Solid**
Date Received: 01/10/13 09:46 — **Percent Solids: 82.8**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	240	U	240	45	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
1,1,2-Trichloro-1,2,2-trifluoroethane	240	U	240	96	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Vinyl chloride	240	U	240	44	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50
Xylenes, Total	**6100**		480	91	ug/Kg	☼	01/15/13 10:00	01/15/13 18:47	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*109*		*72 - 122*	*01/15/13 10:00*	*01/15/13 18:47*	*50*
Dibromofluoromethane	*94*		*79 - 118*	*01/15/13 10:00*	*01/15/13 18:47*	*50*
Toluene-d8 (Surr)	*99*		*80 - 120*	*01/15/13 10:00*	*01/15/13 18:47*	*50*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**130**		58	4.4	mg/Kg	☼	01/10/13 11:46	01/16/13 13:40	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*0*	*D*	*70 - 131*	*01/10/13 11:46*	*01/16/13 13:40*	*250*

Client Sample ID: MW-70 (14.5-15.5) — **Lab Sample ID: 680-86385-2**
Date Collected: 01/09/13 11:35 — **Matrix: Solid**
Date Received: 01/10/13 09:46 — **Percent Solids: 81.4**

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	☼	01/22/13 20:36	01/24/13 01:33	1
Phenol	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Bis(2-chloroethyl)ether	400	U	400	55	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2-Methylphenol	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
bis (2-chloroisopropyl) ether	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Acetophenone	**160**	**J**	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
3 & 4 Methylphenol	400	U	400	52	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
N-Nitrosodi-n-propylamine	400	U	400	39	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Hexachloroethane	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Nitrobenzene	400	U	400	32	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Isophorone	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2-Nitrophenol	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2,4-Dimethylphenol	400	U	400	54	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Bis(2-chloroethoxy)methane	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2,4-Dichlorophenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Naphthalene	**77**	**J**	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
4-Chloroaniline	800	U	800	63	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Hexachlorobutadiene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Caprolactam	400	U	400	80	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
4-Chloro-3-methylphenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2-Methylnaphthalene	**150**	**J**	400	46	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Hexachlorocyclopentadiene	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2,4,6-Trichlorophenol	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2,4,5-Trichlorophenol	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
1,1'-Biphenyl	400	U	400	900	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2-Chloronaphthalene	400	U	400	43	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1

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

TestAmerica Job ID: 680-86385-1

Client Sample ID: MW-70 (14.5-15.5)
Date Collected: 01/09/13 11:35
Date Received: 01/10/13 09:46

Lab Sample ID: 680-86385-2
Matrix: Solid
Percent Solids: 81.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	2100	U	2100	55	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Dimethyl phthalate	400	U	400	41	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2,6-Dinitrotoluene	400	U	400	51	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Acenaphthylene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
3-Nitroaniline	2100	U	2100	56	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Acenaphthene	400	U	400	50	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2,4-Dinitrophenol	2100	U	2100	1000	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
4-Nitrophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Dibenzofuran	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
2,4-Dinitrotoluene	400	U	400	60	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Diethyl phthalate	400	U	400	45	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Fluorene	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
4-Chlorophenyl phenyl ether	400	U	400	54	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
4-Nitroaniline	2100	U	2100	60	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
4,6-Dinitro-2-methylphenol	2100	U	2100	210	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
N-Nitrosodiphenylamine	400	U	400	40	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
4-Bromophenyl phenyl ether	400	U	400	44	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Hexachlorobenzene	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Atrazine	400	U	400	28	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Pentachlorophenol	2100	U	2100	400	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Phenanthrene	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Anthracene	400	U	400	30	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Carbazole	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Di-n-butyl phthalate	400	U	400	36	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Fluoranthene	400	U	400	39	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Pyrene	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Butyl benzyl phthalate	400	U	400	32	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
3,3'-Dichlorobenzidine	800	U	800	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Benzo[a]anthracene	400	U	400	33	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Chrysene	400	U	400	26	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Bis(2-ethylhexyl) phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Di-n-octyl phthalate	400	U	400	35	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Benzo[b]fluoranthene	400	U	400	46	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Benzo[k]fluoranthene	400	U	400	79	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Benzo[a]pyrene	400	U	400	63	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Indeno[1,2,3-cd]pyrene	400	U	400	34	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Dibenz(a,h)anthracene	400	U	400	47	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1
Benzo[g,h,i]perylene	400	U	400	27	ug/Kg	☼	01/22/13 20:36	01/24/13 01:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*61*		*46 - 130*	*01/22/13 20:36*	*01/24/13 01:33*	*1*
2-Fluorobiphenyl	*65*		*58 - 130*	*01/22/13 20:36*	*01/24/13 01:33*	*1*
Terphenyl-d14 (Surr)	*63*		*60 - 130*	*01/22/13 20:36*	*01/24/13 01:33*	*1*
Phenol-d5 (Surr)	*63*		*49 - 130*	*01/22/13 20:36*	*01/24/13 01:33*	*1*
2-Fluorophenol (Surr)	*63*		*40 - 130*	*01/22/13 20:36*	*01/24/13 01:33*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*58 - 130*	*01/22/13 20:36*	*01/24/13 01:33*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**110**		4.0	2.6	mg/Kg	☼	01/15/13 20:01	01/18/13 20:04	1

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

TestAmerica Job ID: 680-86385-1

Client Sample ID: MW-70 (14.5-15.5)

Lab Sample ID: 680-86385-2
Date Collected: 01/09/13 11:35
Matrix: Solid
Date Received: 01/10/13 09:46
Percent Solids: 81.4

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (C20-C36)	24	U	24	24	mg/Kg	☼	01/15/13 20:01	01/18/13 20:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*65*		*56 - 135*	*01/15/13 20:01*	*01/18/13 20:04*	*1*

Client Sample ID: TB (010913)

Lab Sample ID: 680-86385-3
Date Collected: 01/09/13 00:00
Matrix: Water
Date Received: 01/10/13 09:46

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			01/14/13 20:39	1
Benzene	1.0	U	1.0	0.34	ug/L			01/14/13 20:39	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Bromoform	5.0	U	5.0	0.71	ug/L			01/14/13 20:39	1
Bromomethane	1.0	U	1.0	0.98	ug/L			01/14/13 20:39	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Chloroethane	1.0	U	1.0	0.76	ug/L			01/14/13 20:39	1
Chloroform	1.0	U	1.0	0.60	ug/L			01/14/13 20:39	1
Chloromethane	1.0	U	1.0	0.83	ug/L			01/14/13 20:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/14/13 20:39	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	0.78	ug/L			01/14/13 20:39	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			01/14/13 20:39	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			01/14/13 20:39	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			01/14/13 20:39	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			01/14/13 20:39	1
2-Hexanone	25	U	25	3.1	ug/L			01/14/13 20:39	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			01/14/13 20:39	1
Methyl acetate	5.0	U	5.0	2.1	ug/L			01/14/13 20:39	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			01/14/13 20:39	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			01/14/13 20:39	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			01/14/13 20:39	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			01/14/13 20:39	1
Naphthalene	1.0	U	1.0	1.0	ug/L			01/14/13 20:39	1
Styrene	1.0	U	1.0	1.0	ug/L			01/14/13 20:39	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			01/14/13 20:39	1

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

TestAmerica Job ID: 680-86385-1

Client Sample ID: TB (010913)
Date Collected: 01/09/13 00:00
Date Received: 01/10/13 09:46

Lab Sample ID: 680-86385-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			01/14/13 20:39	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			01/14/13 20:39	1
Toluene	1.0	U	1.0	0.70	ug/L			01/14/13 20:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			01/14/13 20:39	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			01/14/13 20:39	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			01/14/13 20:39	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			01/14/13 20:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			01/14/13 20:39	1
Xylenes, Total	10	U	10	1.6	ug/L			01/14/13 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*78 - 118*		*01/14/13 20:39*	*1*
Dibromofluoromethane	*110*		*81 - 121*		*01/14/13 20:39*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/14/13 20:39*	*1*

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

Lab Sample ID: MB 400-170586/4
Matrix: Water
Analysis Batch: 170586

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.34	ug/L			01/14/13 16:25	1
Diisopropyl ether	1.0	U	1.0	0.50	ug/L			01/14/13 16:25	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			01/14/13 16:25	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			01/14/13 16:25	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			01/14/13 16:25	1
Naphthalene	1.0	U	1.0	1.0	ug/L			01/14/13 16:25	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			01/14/13 16:25	1
tert-Butyl alcohol	5.0	U	5.0	4.9	ug/L			01/14/13 16:25	1
Toluene	1.0	U	1.0	0.70	ug/L			01/14/13 16:25	1
Xylenes, Total	10	U	10	1.6	ug/L			01/14/13 16:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*78 - 118*		*01/14/13 16:25*	*1*
Dibromofluoromethane	*114*		*81 - 121*		*01/14/13 16:25*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*01/14/13 16:25*	*1*

Lab Sample ID: LCS 400-170586/1000
Matrix: Water
Analysis Batch: 170586

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	51.4		ug/L		103	79 - 116		
Diisopropyl ether			50.0	56.0		ug/L		112	69 - 143		
Ethylbenzene			50.0	50.3		ug/L		101	82 - 115		
Ethyl tert-butyl ether			50.0	58.5		ug/L		117	58 - 142		
Methyl tert-butyl ether			50.0	58.3		ug/L		117	70 - 124		
Naphthalene			50.0	57.6		ug/L		115	45 - 131		
Tert-amyl methyl ether			50.0	50.4		ug/L		101	65 - 125		
tert-Butyl alcohol			250	253		ug/L		101	44 - 150		
Toluene			50.0	51.4		ug/L		103	81 - 112		
Xylenes, Total			150	151		ug/L		101	81 - 119		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*78 - 118*
Dibromofluoromethane	*114*		*81 - 121*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 400-170638/1-A
Matrix: Solid
Analysis Batch: 170614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170638

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	7.3	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Benzene	5.0	U	5.0	0.49	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Bromodichloromethane	5.0	U	5.0	0.84	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Bromoform	5.0	U	5.0	0.63	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Bromomethane	5.0	U	5.0	1.4	ug/Kg		01/15/13 09:00	01/15/13 09:13	1

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

Lab Sample ID: MB 400-170638/1-A
Matrix: Solid
Analysis Batch: 170614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170638

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	5.0	U	5.0	1.2	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Carbon tetrachloride	5.0	U	5.0	1.7	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Chlorobenzene	5.0	U	5.0	0.52	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Chloroethane	5.0	U	5.0	1.9	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Chloroform	5.0	U	5.0	0.59	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
cis-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Cyclohexane	5.0	U	5.0	0.94	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Dibromochloromethane	5.0	U	5.0	0.87	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	3.3	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,2-Dichlorobenzene	5.0	U	5.0	0.71	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,3-Dichlorobenzene	5.0	U	5.0	0.95	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,4-Dichlorobenzene	5.0	U	5.0	0.82	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Dichlorodifluoromethane	5.0	U	5.0	1.3	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,1-Dichloroethane	5.0	U	5.0	0.83	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,2-Dichloroethane	5.0	U	5.0	0.82	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,1-Dichloroethene	5.0	U	5.0	0.75	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,2-Dichloropropane	5.0	U	5.0	0.74	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Diisopropyl ether	5.0	U	5.0	0.55	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Ethylbenzene	5.0	U	5.0	0.61	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Ethylene Dibromide	5.0	U	5.0	0.48	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Ethyl tert-butyl ether	5.0	U	5.0	0.56	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
2-Hexanone	25	U	25	5.0	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Isopropylbenzene	5.0	U	5.0	0.68	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Methyl acetate	5.0	U	5.0	4.6	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Methylcyclohexane	5.0	U	5.0	0.87	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Methylene Chloride	5.0	U	5.0	3.4	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Methyl Ethyl Ketone	25	U	25	4.1	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
methyl isobutyl ketone	25	U	25	4.0	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Naphthalene	5.0	U	5.0	1.0	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Styrene	5.0	U	5.0	0.76	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Tert-amyl methyl ether	5.0	U	5.0	0.44	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
tert-Butyl alcohol	5.0	U	5.0	3.4	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.72	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Tetrachloroethene	5.0	U	5.0	0.84	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Toluene	5.0	U	5.0	0.70	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.76	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.92	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.73	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,1,1-Trichloroethane	5.0	U	5.0	1.1	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,1,2-Trichloroethane	5.0	U	5.0	0.92	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Trichloroethene	5.0	U	5.0	0.48	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Trichlorofluoromethane	5.0	U	5.0	0.95	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	2.0	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Vinyl chloride	5.0	U	5.0	0.92	ug/Kg		01/15/13 09:00	01/15/13 09:13	1
Xylenes, Total	10	U	10	1.9	ug/Kg		01/15/13 09:00	01/15/13 09:13	1

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

Lab Sample ID: MB 400-170638/1-A
Matrix: Solid
Analysis Batch: 170614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170638

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	*104*		*72 - 122*	*01/15/13 09:00*	*01/15/13 09:13*	*1*
Dibromofluoromethane	*98*		*79 - 118*	*01/15/13 09:00*	*01/15/13 09:13*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*	*01/15/13 09:00*	*01/15/13 09:13*	*1*

Lab Sample ID: LCS 400-170638/2-A
Matrix: Solid
Analysis Batch: 170614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170638

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	167		ug/Kg		83	43 - 150
Benzene	50.0	46.7		ug/Kg		93	74 - 119
Bromodichloromethane	50.0	46.5		ug/Kg		93	68 - 128
Bromoform	50.0	49.4		ug/Kg		99	54 - 125
Bromomethane	50.0	39.5		ug/Kg		79	25 - 150
Carbon disulfide	50.0	46.6		ug/Kg		93	26 - 150
Carbon tetrachloride	50.0	42.8		ug/Kg		86	70 - 128
Chlorobenzene	50.0	53.4		ug/Kg		107	80 - 116
Chloroethane	50.0	65.1		ug/Kg		130	22 - 150
Chloroform	50.0	43.7		ug/Kg		87	74 - 119
Chloromethane	50.0	39.7		ug/Kg		79	36 - 147
cis-1,2-Dichloroethene	50.0	43.4		ug/Kg		87	68 - 126
cis-1,3-Dichloropropene	50.0	48.4		ug/Kg		97	68 - 125
Cyclohexane	50.0	49.5		ug/Kg		99	62 - 126
Dibromochloromethane	50.0	43.9		ug/Kg		88	65 - 131
1,2-Dibromo-3-Chloropropane	50.0	58.6		ug/Kg		117	57 - 123
1,2-Dichlorobenzene	50.0	53.8		ug/Kg		108	76 - 120
1,3-Dichlorobenzene	50.0	54.5		ug/Kg		109	78 - 118
1,4-Dichlorobenzene	50.0	54.2		ug/Kg		108	77 - 118
Dichlorodifluoromethane	50.0	43.9		ug/Kg		88	44 - 145
1,1-Dichloroethane	50.0	44.4		ug/Kg		89	61 - 128
1,2-Dichloroethane	50.0	44.4		ug/Kg		89	70 - 125
1,1-Dichloroethene	50.0	45.2		ug/Kg		90	62 - 130
1,2-Dichloropropane	50.0	46.1		ug/Kg		92	64 - 129
Diisopropyl ether	50.0	39.3		ug/Kg		79	46 - 144
Ethylbenzene	50.0	56.4		ug/Kg		113	78 - 116
Ethylene Dibromide	50.0	46.6		ug/Kg		93	78 - 119
Ethyl tert-butyl ether	50.0	50.6		ug/Kg		101	60 - 128
2-Hexanone	200	186		ug/Kg		93	54 - 140
Isopropylbenzene	50.0	55.2		ug/Kg		110	78 - 119
Methyl acetate	50.0	39.9		ug/Kg		80	52 - 139
Methylcyclohexane	50.0	48.9		ug/Kg		98	65 - 126
Methylene Chloride	50.0	47.8		ug/Kg		96	45 - 150
Methyl Ethyl Ketone	200	198		ug/Kg		99	62 - 126
methyl isobutyl ketone	200	179		ug/Kg		89	56 - 137
Methyl tert-butyl ether	50.0	46.1		ug/Kg		92	69 - 124
Naphthalene	50.0	63.1		ug/Kg		126	64 - 126
Styrene	50.0	56.2		ug/Kg		112	66 - 132
Tert-amyl methyl ether	50.0	56.5		ug/Kg		113	65 - 124

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

Lab Sample ID: LCS 400-170638/2-A
Matrix: Solid
Analysis Batch: 170614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170638

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butyl alcohol	250	264		ug/Kg		105	12 - 150
1,1,2,2-Tetrachloroethane	50.0	63.4	*	ug/Kg		127	67 - 120
Tetrachloroethene	50.0	46.8		ug/Kg		94	74 - 126
Toluene	50.0	46.8		ug/Kg		94	76 - 116
trans-1,2-Dichloroethene	50.0	45.1		ug/Kg		90	65 - 130
trans-1,3-Dichloropropene	50.0	48.7		ug/Kg		97	65 - 126
1,2,4-Trichlorobenzene	50.0	59.5		ug/Kg		119	72 - 126
1,1,1-Trichloroethane	50.0	42.4		ug/Kg		85	72 - 121
1,1,2-Trichloroethane	50.0	47.9		ug/Kg		96	75 - 118
Trichloroethene	50.0	44.1		ug/Kg		88	76 - 122
Trichlorofluoromethane	50.0	42.5		ug/Kg		85	65 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	42.8		ug/Kg		86	74 - 123
Vinyl chloride	50.0	44.9		ug/Kg		90	52 - 134
Xylenes, Total	150	170		ug/Kg		114	77 - 118

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*72 - 122*
Dibromofluoromethane	*99*		*79 - 118*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 400-170638/3-A
Matrix: Solid
Analysis Batch: 170614

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 170638

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	146		ug/Kg		73	43 - 150	13	30
Benzene	50.0	45.8		ug/Kg		92	74 - 119	2	30
Bromodichloromethane	50.0	45.5		ug/Kg		91	68 - 128	2	30
Bromoform	50.0	48.0		ug/Kg		96	54 - 125	3	30
Bromomethane	50.0	52.5		ug/Kg		105	25 - 150	28	30
Carbon disulfide	50.0	44.5		ug/Kg		89	26 - 150	5	30
Carbon tetrachloride	50.0	41.6		ug/Kg		83	70 - 128	3	30
Chlorobenzene	50.0	51.8		ug/Kg		104	80 - 116	3	30
Chloroethane	50.0	68.9		ug/Kg		138	22 - 150	6	30
Chloroform	50.0	43.1		ug/Kg		86	74 - 119	1	30
Chloromethane	50.0	37.0		ug/Kg		74	36 - 147	7	30
cis-1,2-Dichloroethene	50.0	41.5		ug/Kg		83	68 - 126	4	30
cis-1,3-Dichloropropene	50.0	47.2		ug/Kg		94	68 - 125	2	30
Cyclohexane	50.0	48.2		ug/Kg		96	62 - 126	3	30
Dibromochloromethane	50.0	43.9		ug/Kg		88	65 - 131	0	30
1,2-Dibromo-3-Chloropropane	50.0	53.7		ug/Kg		107	57 - 123	9	30
1,2-Dichlorobenzene	50.0	50.7		ug/Kg		101	76 - 120	6	30
1,3-Dichlorobenzene	50.0	49.7		ug/Kg		99	78 - 118	9	30
1,4-Dichlorobenzene	50.0	48.5		ug/Kg		97	77 - 118	11	30
Dichlorodifluoromethane	50.0	42.5		ug/Kg		85	44 - 145	3	30
1,1-Dichloroethane	50.0	43.6		ug/Kg		87	61 - 128	2	30
1,2-Dichloroethane	50.0	42.7		ug/Kg		85	70 - 125	4	30

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

Lab Sample ID: LCSD 400-170638/3-A
Matrix: Solid
Analysis Batch: 170614

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 170638

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene			50.0	43.4		ug/Kg		87	62 - 130	4	30
1,2-Dichloropropane			50.0	45.5		ug/Kg		91	64 - 129	1	30
Diisopropyl ether			50.0	39.5		ug/Kg		79	46 - 144	0	30
Ethylbenzene			50.0	53.7		ug/Kg		107	78 - 116	5	30
Ethylene Dibromide			50.0	45.4		ug/Kg		91	78 - 119	3	30
Ethyl tert-butyl ether			50.0	49.4		ug/Kg		99	60 - 128	3	30
2-Hexanone			200	157		ug/Kg		78	54 - 140	17	30
Isopropylbenzene			50.0	53.3		ug/Kg		107	78 - 119	4	30
Methyl acetate			50.0	36.5		ug/Kg		73	52 - 139	9	30
Methylcyclohexane			50.0	47.0		ug/Kg		94	65 - 126	4	30
Methylene Chloride			50.0	46.8		ug/Kg		94	45 - 150	2	30
Methyl Ethyl Ketone			200	166		ug/Kg		83	62 - 126	17	30
methyl isobutyl ketone			200	156		ug/Kg		78	56 - 137	14	30
Methyl tert-butyl ether			50.0	44.1		ug/Kg		88	69 - 124	4	30
Naphthalene			50.0	56.7		ug/Kg		113	64 - 126	11	30
Styrene			50.0	54.6		ug/Kg		109	66 - 132	3	30
Tert-amyl methyl ether			50.0	54.5		ug/Kg		109	65 - 124	4	30
tert-Butyl alcohol			250	225		ug/Kg		90	12 - 150	16	30
1,1,2,2-Tetrachloroethane			50.0	57.7		ug/Kg		115	67 - 120	9	30
Tetrachloroethene			50.0	43.7		ug/Kg		87	74 - 126	7	30
Toluene			50.0	45.3		ug/Kg		91	76 - 116	3	30
trans-1,2-Dichloroethene			50.0	43.9		ug/Kg		88	65 - 130	3	30
trans-1,3-Dichloropropene			50.0	46.6		ug/Kg		93	65 - 126	4	30
1,2,4-Trichlorobenzene			50.0	49.2		ug/Kg		98	72 - 126	19	30
1,1,1-Trichloroethane			50.0	41.2		ug/Kg		82	72 - 121	3	30
1,1,2-Trichloroethane			50.0	47.1		ug/Kg		94	75 - 118	2	30
Trichloroethene			50.0	43.6		ug/Kg		87	76 - 122	1	30
Trichlorofluoromethane			50.0	41.2		ug/Kg		82	65 - 132	3	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne			50.0	41.6		ug/Kg		83	74 - 123	3	30
Vinyl chloride			50.0	41.6		ug/Kg		83	52 - 134	8	30
Xylenes, Total			150	163		ug/Kg		109	77 - 118	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*108*		*72 - 122*
Dibromofluoromethane	*97*		*79 - 118*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 680-263508/12-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 263508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	330	U	330	57	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Phenol	330	U	330	34	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Bis(2-chloroethyl)ether	330	U	330	45	ug/Kg		01/22/13 20:36	01/23/13 20:23	1

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

Lab Sample ID: MB 680-263508/12-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 263508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	330	U	330	40	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Methylphenol	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
bis (2-chloroisopropyl) ether	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Acetophenone	330	U	330	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
3 & 4 Methylphenol	330	U	330	43	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
N-Nitrosodi-n-propylamine	330	U	330	32	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachloroethane	330	U	330	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Nitrobenzene	330	U	330	26	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Isophorone	330	U	330	33	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Nitrophenol	330	U	330	41	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dimethylphenol	330	U	330	44	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Bis(2-chloroethoxy)methane	330	U	330	39	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dichlorophenol	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Naphthalene	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Chloroaniline	650	U	650	51	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachlorobutadiene	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Caprolactam	330	U	330	65	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Chloro-3-methylphenol	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Methylnaphthalene	330	U	330	38	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachlorocyclopentadiene	330	U	330	41	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4,6-Trichlorophenol	330	U	330	29	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4,5-Trichlorophenol	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
1,1'-Biphenyl	330	U	330	730	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Chloronaphthalene	330	U	330	35	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2-Nitroaniline	1700	U	1700	45	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Dimethyl phthalate	330	U	330	34	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,6-Dinitrotoluene	330	U	330	42	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Acenaphthylene	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
3-Nitroaniline	1700	U	1700	46	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Acenaphthene	330	U	330	41	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dinitrophenol	1700	U	1700	820	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Nitrophenol	1700	U	1700	330	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Dibenzofuran	330	U	330	33	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
2,4-Dinitrotoluene	330	U	330	48	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Diethyl phthalate	330	U	330	37	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Fluorene	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Chlorophenyl phenyl ether	330	U	330	44	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Nitroaniline	1700	U	1700	48	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4,6-Dinitro-2-methylphenol	1700	U	1700	170	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
N-Nitrosodiphenylamine	330	U	330	33	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
4-Bromophenyl phenyl ether	330	U	330	36	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Hexachlorobenzene	330	U	330	39	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Atrazine	330	U	330	23	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Pentachlorophenol	1700	U	1700	330	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Phenanthrene	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Anthracene	330	U	330	25	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Carbazole	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Di-n-butyl phthalate	330	U	330	30	ug/Kg		01/22/13 20:36	01/23/13 20:23	1

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

Lab Sample ID: MB 680-263508/12-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 263508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	330	U	330	32	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Pyrene	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Butyl benzyl phthalate	330	U	330	26	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
3,3'-Dichlorobenzidine	650	U	650	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[a]anthracene	330	U	330	27	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Chrysene	330	U	330	21	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Bis(2-ethylhexyl) phthalate	330	U	330	29	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Di-n-octyl phthalate	330	U	330	29	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[b]fluoranthene	330	U	330	38	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[k]fluoranthene	330	U	330	64	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[a]pyrene	330	U	330	51	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Indeno[1,2,3-cd]pyrene	330	U	330	28	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Dibenz(a,h)anthracene	330	U	330	39	ug/Kg		01/22/13 20:36	01/23/13 20:23	1
Benzo[g,h,i]perylene	330	U	330	22	ug/Kg		01/22/13 20:36	01/23/13 20:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*63*		*46 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2-Fluorobiphenyl	*66*		*58 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
Terphenyl-d14 (Surr)	*74*		*60 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
Phenol-d5 (Surr)	*70*		*49 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2-Fluorophenol (Surr)	*70*		*40 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*58 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*58 - 130*	*01/22/13 20:36*	*01/23/13 20:23*	*1*

Lab Sample ID: LCS 680-263508/13-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	3320	773		ug/Kg		23	10 - 130
Phenol	3320	2540		ug/Kg		76	46 - 130
Bis(2-chloroethyl)ether	3320	2520		ug/Kg		76	42 - 130
2-Chlorophenol	3320	2460		ug/Kg		74	51 - 130
2-Methylphenol	3320	2610		ug/Kg		78	49 - 130
bis (2-chloroisopropyl) ether	3320	2640		ug/Kg		79	44 - 130
Acetophenone	3320	1900		ug/Kg		57	42 - 130
3 & 4 Methylphenol	3320	2610		ug/Kg		79	50 - 130
N-Nitrosodi-n-propylamine	3320	2670		ug/Kg		80	48 - 130
Hexachloroethane	3320	2110		ug/Kg		63	44 - 130
Nitrobenzene	3320	2410		ug/Kg		73	43 - 130
Isophorone	3320	2330		ug/Kg		70	48 - 130
2-Nitrophenol	3320	2420		ug/Kg		73	45 - 130
2,4-Dimethylphenol	3320	2680		ug/Kg		81	47 - 130
Bis(2-chloroethoxy)methane	3320	2720		ug/Kg		82	56 - 130
2,4-Dichlorophenol	3320	2590		ug/Kg		78	53 - 130
Naphthalene	3320	2390		ug/Kg		72	54 - 130
4-Chloroaniline	3320	1800		ug/Kg		54	36 - 130
Hexachlorobutadiene	3320	2470		ug/Kg		74	47 - 130

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

Lab Sample ID: LCS 680-263508/13-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 263508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Caprolactam	3320	2800		ug/Kg		84	52 - 130
4-Chloro-3-methylphenol	3320	2790		ug/Kg		84	52 - 130
2-Methylnaphthalene	3320	2530		ug/Kg		76	55 - 130
Hexachlorocyclopentadiene	3320	2480		ug/Kg		75	35 - 130
2,4,6-Trichlorophenol	3320	2620		ug/Kg		79	53 - 130
2,4,5-Trichlorophenol	3320	2670		ug/Kg		80	60 - 130
1,1'-Biphenyl	3320	2360		ug/Kg		71	57 - 130
2-Chloronaphthalene	3320	2460		ug/Kg		74	55 - 130
2-Nitroaniline	3320	2890		ug/Kg		87	52 - 130
Dimethyl phthalate	3320	2840		ug/Kg		86	63 - 130
2,6-Dinitrotoluene	3320	2750		ug/Kg		83	57 - 130
Acenaphthylene	3320	2650		ug/Kg		80	58 - 130
3-Nitroaniline	3320	2250		ug/Kg		68	42 - 130
Acenaphthene	3320	2620		ug/Kg		79	58 - 130
2,4-Dinitrophenol	3320	3030		ug/Kg		91	10 - 154
4-Nitrophenol	3320	3490		ug/Kg		105	30 - 130
Dibenzofuran	3320	2650		ug/Kg		80	56 - 130
2,4-Dinitrotoluene	3320	2810		ug/Kg		85	55 - 130
Diethyl phthalate	3320	2910		ug/Kg		88	62 - 130
Fluorene	3320	2670		ug/Kg		80	58 - 130
4-Chlorophenyl phenyl ether	3320	2710		ug/Kg		81	61 - 130
4-Nitroaniline	3320	2940		ug/Kg		88	49 - 130
4,6-Dinitro-2-methylphenol	3320	2910		ug/Kg		87	14 - 137
N-Nitrosodiphenylamine	3320	2720		ug/Kg		82	62 - 130
4-Bromophenyl phenyl ether	3320	2650		ug/Kg		80	65 - 130
Hexachlorobenzene	3320	2540		ug/Kg		76	59 - 130
Atrazine	3320	4530		ug/Kg		136	54 - 141
Pentachlorophenol	3320	2720		ug/Kg		82	38 - 131
Phenanthrene	3320	2640		ug/Kg		79	61 - 130
Anthracene	3320	2640		ug/Kg		79	60 - 130
Carbazole	3320	2890		ug/Kg		87	60 - 130
Di-n-butyl phthalate	3320	2940		ug/Kg		88	65 - 130
Fluoranthene	3320	2710		ug/Kg		82	62 - 130
Pyrene	3320	2840		ug/Kg		85	59 - 130
Butyl benzyl phthalate	3320	3240		ug/Kg		98	65 - 134
3,3'-Dichlorobenzidine	3320	2400		ug/Kg		72	45 - 130
Benzo[a]anthracene	3320	2810		ug/Kg		84	62 - 130
Chrysene	3320	2860		ug/Kg		86	62 - 130
Bis(2-ethylhexyl) phthalate	3320	3170		ug/Kg		95	62 - 132
Di-n-octyl phthalate	3320	3300		ug/Kg		99	59 - 146
Benzo[b]fluoranthene	3320	2710		ug/Kg		81	53 - 130
Benzo[k]fluoranthene	3320	2820		ug/Kg		85	57 - 130
Benzo[a]pyrene	3320	2970		ug/Kg		89	68 - 131
Indeno[1,2,3-cd]pyrene	3320	2780		ug/Kg		84	52 - 130
Dibenz(a,h)anthracene	3320	2560		ug/Kg		77	56 - 130
Benzo[g,h,i]perylene	3320	2510		ug/Kg		76	54 - 130

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

Lab Sample ID: LCS 680-263508/13-A
Matrix: Solid
Analysis Batch: 263840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 263508

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*67*		*46 - 130*
2-Fluorobiphenyl	*70*		*58 - 130*
Terphenyl-d14 (Surr)	*81*		*60 - 130*
Phenol-d5 (Surr)	*80*		*49 - 130*
2-Fluorophenol (Surr)	*75*		*40 - 130*
2,4,6-Tribromophenol (Surr)	*86*		*58 - 130*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 680-262991/3
Matrix: Solid
Analysis Batch: 262991

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	5.0	U	5.0	0.38	mg/Kg			01/16/13 11:43	20

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*113*		*70 - 131*		*01/16/13 11:43*	*20*

Lab Sample ID: LCS 680-262991/4
Matrix: Solid
Analysis Batch: 262991

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			40.0	30.2		mg/Kg		75	64 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*101*		*70 - 131*

Lab Sample ID: LCSD 680-262991/5
Matrix: Solid
Analysis Batch: 262991

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			40.0	31.1		mg/Kg		78	64 - 133	3	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*105*		*70 - 131*

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

TestAmerica Job ID: 680-86385-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 680-262678/6-A
Matrix: Solid
Analysis Batch: 263071

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 262678

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	3.2	U	3.2	2.1	mg/Kg		01/15/13 20:01	01/16/13 17:37	1
Oil Range Organics (C20-C36)	20	U	20	20	mg/Kg		01/15/13 20:01	01/16/13 17:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*56 - 135*	*01/15/13 20:01*	*01/16/13 17:37*	*1*

Lab Sample ID: LCS 680-262678/10-A
Matrix: Solid
Analysis Batch: 263071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Oil Range Organics (C20-C36)	66.5	71.7		mg/Kg		108	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*105*		*56 - 135*

Lab Sample ID: LCS 680-262678/7-A
Matrix: Solid
Analysis Batch: 263373

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 262678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	33.1	30.0		mg/Kg		91	19 - 171

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*88*		*56 - 135*

GC/MS VOA

Analysis Batch: 170586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-3	TB (010913)	Total/NA	Water	8260B	
LCS 400-170586/1000	Lab Control Sample	Total/NA	Water	8260B	
MB 400-170586/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 170614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-1	MW-70 (14.5-15.0)	Total/NA	Solid	8260B	170638
LCS 400-170638/2-A	Lab Control Sample	Total/NA	Solid	8260B	170638
LCSD 400-170638/3-A	Lab Control Sample Dup	Total/NA	Solid	8260B	170638
MB 400-170638/1-A	Method Blank	Total/NA	Solid	8260B	170638

Prep Batch: 170638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-1	MW-70 (14.5-15.0)	Total/NA	Solid	5035	
LCS 400-170638/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 400-170638/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 400-170638/1-A	Method Blank	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 263508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-2	MW-70 (14.5-15.5)	Total/NA	Solid	3546	
LCS 680-263508/13-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-263508/12-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 263840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-2	MW-70 (14.5-15.5)	Total/NA	Solid	8270D	263508
LCS 680-263508/13-A	Lab Control Sample	Total/NA	Solid	8270D	263508
MB 680-263508/12-A	Method Blank	Total/NA	Solid	8270D	263508

GC VOA

Prep Batch: 262334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-1	MW-70 (14.5-15.0)	Total/NA	Solid	5035	

Analysis Batch: 262991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-1	MW-70 (14.5-15.0)	Total/NA	Solid	8015B	262334
LCS 680-262991/4	Lab Control Sample	Total/NA	Solid	8015B	
LCSD 680-262991/5	Lab Control Sample Dup	Total/NA	Solid	8015B	
MB 680-262991/3	Method Blank	Total/NA	Solid	8015B	

GC Semi VOA

Prep Batch: 262678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-2	MW-70 (14.5-15.5)	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 262678 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-262678/10-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 680-262678/7-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-262678/6-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 263071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-262678/10-A	Lab Control Sample	Total/NA	Solid	8015B	262678
MB 680-262678/6-A	Method Blank	Total/NA	Solid	8015B	262678

Analysis Batch: 263373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-86385-2	MW-70 (14.5-15.5)	Total/NA	Solid	8015B	262678
LCS 680-262678/7-A	Lab Control Sample	Total/NA	Solid	8015B	262678

Lab Chronicle

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

TestAmerica Job ID: 680-86385-1

Client Sample ID: MW-70 (14.5-15.0)

Lab Sample ID: 680-86385-1

Date Collected: 01/09/13 11:35
Matrix: Solid
Date Received: 01/10/13 09:46
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			170638	01/15/13 10:00	SH	TAL PEN
Total/NA	Analysis	8260B		50	170614	01/15/13 18:47	SH	TAL PEN
Total/NA	Prep	5035			262334	01/10/13 11:46	FS	TAL SAV
Total/NA	Analysis	8015B		250	262991	01/16/13 13:40	SMC	TAL SAV

Client Sample ID: MW-70 (14.5-15.5)

Lab Sample ID: 680-86385-2

Date Collected: 01/09/13 11:35
Matrix: Solid
Date Received: 01/10/13 09:46
Percent Solids: 81.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			263508	01/22/13 20:36	AJW	TAL SAV
Total/NA	Analysis	8270D		1	263840	01/24/13 01:33	LEG	TAL SAV
Total/NA	Prep	3546			262678	01/15/13 20:01	JS	TAL SAV
Total/NA	Analysis	8015B		1	263373	01/18/13 20:04	GM	TAL SAV

Client Sample ID: TB (010913)

Lab Sample ID: 680-86385-3

Date Collected: 01/09/13 00:00
Matrix: Water
Date Received: 01/10/13 09:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	170586	01/14/13 20:39	LS	TAL PEN

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 # 130109-1

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: carrier

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: Raghu Chatrathi

LWON: ENV 35683

CONSULTANT INFORMATION

Company: ARCADIS, Inc

Address: 1114 Benfield Blvd Suite A

City, State, Zip: Millersville, MD 21108

Project #: MD000843.0011.00002

PM: Megan Kellner

Email: megan.kellner@arcadis-us.com

Phone: 410-987-0032 Fax: 410-987-4392

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 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: 6, 6, 6, 6

METHODS FOR ANALYSIS: TPH-GRO (8015); TPH-DRO/ORO (8015); Full-suite VOCs, incl oxygenates (8260); SVOCs (8270)

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code	TPH-GRO (8015)	TPH-DRO/ORO (8015)	Full-suite VOCs incl oxygenates (8260)	SVOCs (8270)					COMMENTS	LAB USE
MW-70 (14.5-15.0)	2 terracore	1/9/13	1135	KEM	N	grab	SO	X		X							
MW-70 (14.5-15.5)	2-8 oz	↓	1135	KEM	N	grab	SO		X		X						
TB (010913)	2 VOA	↓	—	—	—	—	LIQ			X							

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1/9/13 1625	[signature]	1/9/13 / 1630
[signature]	1/9/13 / 1635	[signature]	01/10/13 0946

Received By Laboratory: Date/Time: Lab Remarks:

Comments & Special Analytical Requirements: 680-86385 1.8°

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)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-86385-1

Login Number: 86385

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?	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: 680-86385-1

Login Number: 86385
List Number: 1
Creator: Serratore, Maria

List Source: TestAmerica Pensacola
List Creation: 01/11/13 06:17 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	1.6°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: C&O Canal Brunswick, MD - Railyard

TestAmerica Job ID: 680-86385-1

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		0399-01	02-28-13
A2LA	ISO/IEC 17025		399.01	02-28-13
Alabama	State Program	4	41450	06-30-13
Alaska (UST)	State Program	10	UST-104	06-19-13
California	NELAP	9	3217CA	07-31-13
Colorado	State Program	8	N/A	12-31-12
Connecticut	State Program	1	PH-0161	03-31-13
Florida	NELAP	4	E87052	06-30-13
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-13
Georgia	State Program	4	803	06-30-13
Guam	State Program	9	09-005r	04-17-13
Hawaii	State Program	9	N/A	06-30-13
Illinois	NELAP	5	200022	11-30-12
Indiana	State Program	5	N/A	06-30-13
Iowa	State Program	7	353	07-01-13
Kentucky	State Program	4	90084	12-31-12
Kentucky (UST)	State Program	4	18	02-28-13
Louisiana	NELAP	6	30690	06-30-13
Louisiana	NELAP	6	LA100015	12-31-13
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-12
Massachusetts	State Program	1	M-GA006	06-30-13
Michigan	State Program	5	9925	06-30-13
Mississippi	State Program	4	N/A	06-30-13
Montana	State Program	8	CERT0081	12-31-12
Nebraska	State Program	7	TestAmerica-Savannah	06-30-13
New Jersey	NELAP	2	GA769	06-30-13
New Mexico	State Program	6	N/A	06-30-13
New York	NELAP	2	10842	04-01-13
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	01-01-13
South Carolina	State Program	4	98001	06-30-13
Tennessee	State Program	4	TN02961	06-30-13
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-13
Washington	State Program	10	C1794	06-10-13
West Virginia	State Program	3	9950C	12-31-12
West Virginia DEP	State Program	3	94	06-30-13
Wisconsin	State Program	5	999819810	08-31-13
Wyoming	State Program	8	8TMS-Q	06-30-13

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

Certification Summary

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

TestAmerica Job ID: 680-86385-1

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
Arkansas DEQ	State Program	6	88-0689	09-01-13
Florida	NELAP	4	E81010	06-30-13
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
Kentucky (UST)	State Program	4	53	07-05-13
Louisiana	NELAP	6	30976	06-30-13
Maryland	State Program	3	233	09-30-13
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	12-31-12
Oklahoma	State Program	6	9810	08-31-13
Pennsylvania	NELAP	3	68-00467	12-31-12
Rhode Island	State Program	1	LAO00307	12-30-12
South Carolina	State Program	4	96026	06-30-12
Tennessee	State Program	4	TN02907	06-30-13
Texas	NELAP	6	T104704286-12-5	09-30-13
USDA	Federal		P330-10-00407	12-10-13
Virginia	NELAP	3	460166	06-14-13
West Virginia DEP	State Program	3	136	06-30-13