ARCADIS
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Transmittal Letter

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

Copies:
S. Bull, MDE
C. Stubbs, NPS – email
J. Hewitt, NPS – email
M. Carter, NPS – email
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S. Jarvela, USEPA
L. Fischbeck, E&E – email
L. Bohn, FCHD
B. Cervi, E&E - email

ENVIRONMENT

From:
Megan E. Kellner

Date:
May 7, 2014

Subject:
Quarterly Report – First Quarter 2014
CSXT Brunswick Yard, Brunswick, Maryland CSXT
Project # 9415381

ARCADIS Project No.:
MD843.0010.00011

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:

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1	05/07/14			Quarterly Report – First Quarter 2014	AS

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Comments: On behalf of Mr. Paul Kurzanski of CSXT, please find enclosed a copy of the First Quarter 2014 Report with a copy on CD for the CSXT Brunswick Yard, Brunswick, Maryland. Two copies of the report were also delivered to Susan Bull with one electronic copy on CD. Please contact me with questions. – Megan Kellner

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ENVIRONMENT

Mr. Jim Richmond
Maryland Department of the Environment
Oil Control Program
Waste Management Administration
1800 Washington Blvd., Suite 620
Baltimore, Maryland 21230-1719

Subject:
Quarterly Report – First Quarter 2014
CSXT Brunswick Yard, Brunswick, Maryland
CSXT Project # 9415381

Date:
May 7, 2014

Contact:
Megan Kellner

Phone:
410.923.7814

Email:
Megan.Kellner@arcadis-us.com

Our ref:
MD000843.0010.00011

Dear Mr. Richmond:

On behalf of CSX Transportation, Inc. (CSXT), ARCADIS has prepared this quarterly report of the results from activities conducted during the first quarter of 2014 (January through March) at the CSXT Brunswick Yard (the Site) and the adjacent National Park Service (NPS) property in Brunswick, Maryland. Site activities conducted during the reporting period included groundwater elevation monitoring, liquid phase hydrocarbon (LPH) monitoring, operation and maintenance (O&M) of an LPH recovery system, and groundwater sampling. All activities were conducted in accordance with the MDE requirements stated in the Corrective Action Plan (CAP) Approval letter, dated May 27, 2009, and MDE correspondence dated January 25, 2012 and September 6, 2012. NPS monitoring wells were accessed under NPS Special Use Permit #NCR 3100-5700-12.076. A schedule of Site activities is outlined on Table 1.

LPH Monitoring and System O&M

Groundwater and LPH gauging events and system O&M events were conducted on January 15, February 18, March 11, and April 2, 2014 at all wells that currently contain measurable LPH or have contained measurable LPH during the previous six months, and monitoring wells that were installed in 2012 and 2013. Extraction wells and collection sumps were also gauged for LPH on these dates, unless locations were inaccessible. System O&M includes general pump maintenance, adjusting pump intake depths, emptying and resetting three Geotech Product Recovery Canisters, and collecting recovered product from absorbent socks and replacing the socks as necessary. All volumes of product removed are recorded and stored in on-site containers (e.g. 55-gallon drums). Drums are vacuumed out as needed and the fluids are transported off-site for proper disposal.

The locations of all Site wells are shown on Figure 1. Groundwater elevation data and product recovery volumes recorded during the first quarter of 2014 are presented in Table 2. Historical groundwater monitoring data showing LPH and groundwater elevations compared to LPH recovery since CAP implementation are included in Attachment 1 for the wells listed below.

Well locations included in Attachment 1 (Historical Gauging Data Charts)
CSXT MW-02, CSXT MW-04R, CSXT MW-26, CSXT MW-32, CSXT MW-37, CSXT MW-38, CSXT MW-41, CSXT MW-49, CSXT MW-53, CSXT MW-54, CSXT MW-55, CSXT MW-56, CSXT MW-57, CSXT MW-58, CSXT EW-3, and CSXT EW-5

Recovery of LPH was conducted using a skimmer pump at monitoring wells CSXT MW-41, CSXT MW-53, CSXT MW-54, CSXT MW-55, and CSXT MW-56. A peristaltic pump was also used to supplement skimmer pump recovery during O&M events at wells where more than one foot of LPH was measured. LPH recovery at other monitoring and extraction wells exhibiting measurable LPH thicknesses was conducted using either a peristaltic pump or passive skimmers (including Geotech Product Recovery Canisters or absorbent socks). During the current reporting period, measurable thicknesses of LPH were observed in fifteen wells. Small volumes of LPH were also recovered from two monitoring wells where absorbent socks were deployed, but LPH was not measurable (CSXT MW-32 and CSXT MW-59). LPH recovery by method is summarized in Table 3. Skimmer pump LPH recovery by well is summarized in Table 4. Total cumulative recovery by all methods since system implementation in July 2009 is 868.3 gallons of LPH, with 661.4 gallons of LPH recovered via the skimmer pumps.

Groundwater and LPH Level Monitoring

Gauging of all accessible CSXT and NPS monitoring wells, extraction wells, and collection sumps was conducted on March 10, 2014. Contoured groundwater elevations and LPH thicknesses measured during the March 10, 2014 event are presented on Figures 1 and 2, respectively. First quarter well gauging data for all wells are presented on Table 2. Water levels collected during this reporting period were generally consistent with water levels collected in previous reporting periods.

Site wells with historic LPH occurrence are listed below, grouped according to the general location of each well at the Site relative to existing Site features. Measurable thicknesses of LPH were detected at fifteen wells during the first quarter of 2014; these wells are identified with **bold print** in the table below. Wells that did not exhibit measurable thicknesses of LPH, but from which small volumes of LPH were recovered by absorbent socks, are identified with asterisks (*). The location

categories listed below are for discussion purposes and are not intended to reflect conceptual delineation of LPH occurrence at the Site.

Site Wells with Historic Occurrences of Liquid Petroleum Hydrocarbon (LPH) (1995-present)	
Former AST CSXT MW-01, CSXT MW-02, CSXT MW-04R, CSXT MW-06R, CSXT MW-28, CSXT MW-30, CSXT MW-33, EW-4, CS-3, CS-2, CS-1, NPS MW-04	Area West of Former Roundhouse CSXT MW-32*, **CSXT MW-37**, **CSXT MW-38**, **CSXT MW-41**, **CSXT MW-49**, **CSXT MW-53**, **CSXT MW-54**, **CSXT MW-55**, CSXT MW-59*, **CSXT MW-60**, **CSXT MW-61**, **CSXT MW-62**, **CSXT MW-63**
Vicinity of CSXT MW-56 **CSXT MW-26**, CSXT MW-27, **CSXT MW-56**, CSXT MW-57, CSXT MW-58, EW-2, **EW-3**, **EW-5**	Area Southeast of Former Roundhouse CSXT MW-39, CSXT MW-70

Recent occurrences of LPH near the former AST system have been limited; the last LPH detection at CSXT MW-04R occurred in 2011, LPH has not been measured at CSXT MW-02 at a thickness greater than 0.03 feet since 2011, and has not been measured at a thickness greater than 0.03 feet at CSXT MW-28 since 2010. LPH has not been observed in any NPS wells since October 2007.

LPH was detected at four wells located in the vicinity of CSXT MW-56 during the first quarter of 2014. LPH thicknesses ranging from 1.77 to 2.99 feet were measured at CSXT MW-56, which has an active skimmer pump. LPH thicknesses measured at EW-3, EW-5, and CSXT MW-26 ranged from 0.01 to a maximum of 0.03 feet at EW-3.

LPH thicknesses measured in wells located to the west of the former roundhouse ranged from 0.02 feet to a maximum of 2.75 feet at CSXT MW-55. Active LPH recovery via skimmer pumps is occurring in this area at wells CSXT MW-41, CSXT MW-53, CSXT MW-54, and CSXT MW-55.

LPH was not detected at CSXT MW-70 and CSXT MW-39 during the first quarter of 2014. The last detection of measurable LPH at CSXT MW-39 occurred in April 2013 and at CSXT MW-70 in November 2013.

Groundwater Sampling

Groundwater sampling was completed at twenty-five monitoring wells between March 12, 2014 and March 14, 2014. CSXT MW-60 and CSXT MW-63 were not sampled in March 2014 due to the presence of measurable LPH in these wells at the time of sampling. TPH-DRO was not analyzed at CSXT MW-6R during the first quarterly sampling due to the breakage of sample bottles during sample shipment. CSXT MW-6R will be re-sampled and TPH-DRO will be analyzed during the second

quarter of 2014. Monitoring wells that were sampled during the March 2014 sampling event are listed below.

Wells sampled in March 2014	
CSXT Wells:	CSXT MW-3, CSXT MW-6R, CSXT MW-22, CSXT MW-24, CSXT MW-25, CSXT MW-29, CSXT MW-43, CSXT MW-51, CSXT MW-59, CSXT MW-61, CSXT MW-62, CSXT MW-64, CSXT MW-65, CSXT MW-67, CSXT MW-68, CSXT MW-69, CSXT MW-70
NPS Wells:	NPS MW-1, NPS MW-2, NPS MW-4, NPS MW-5, NPS MW-13, NPS MW-14, NPS MW-16, NPS MW-18

Groundwater samples were collected following removal of three well volumes using disposable bailers. For wells with poor recovery, wells were purged until dry and sampled following sufficient recovery, as shown in the groundwater sampling logs (Attachment 2). Field parameters (pH, specific conductance, dissolved oxygen, temperature, redox potential) were collected after each volume was purged.

All groundwater samples were shipped to TestAmerica Laboratories located in Pensacola, FL; Nashville, TN; and Savannah, GA under chain-of-custody for the following analyses:

- Volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylene (BTEX); naphthalene, methyl tert-butyl ether (MTBE); tert-butyl alcohol (TBA); tert-amyl methyl ether (TAME); di-isopropryl ether (DIPE); and ethyl-tert-butyl ether (ETBE) via United Stated Environmental Protection Agency (EPA) Method 8260.

- Total petroleum hydrocarbons – diesel range organics (TPH-DRO) via EPA Method 8015C.

- Total petroleum hydrocarbons – gasoline range organics (TPH-GRO) via EPA Method 8015C.

Laboratory analytical reports are included as Attachment 3. Constituents detected during the first quarter 2014 groundwater sampling event are presented on Table 5, and historical groundwater analytical data for the Site are presented in Attachment 4. A summary of groundwater analytical results from March 2014 is included below:

- Nine VOCs were detected at ten of the twenty five monitoring wells sampled. Detected concentrations ranged from an estimated concentration of 0.52 J ug/L to

25 ug/L (Isopropylbenzene at CSXT MW-61). Wells with VOC detections were generally located west of the former roundhouse.

- TPH-GRO were detected in each of the twenty five wells sampled and ranged from an estimated concentration of 0.015 JB mg/L at NPS MW-01 and NPS MW-16 to 0.44 B mg/L at CSXT MW-62.

- TPH-DRO were detected in twenty-four of the wells sampled. Concentrations ranged from an estimated concentration of 0.085 J mg/L (CSXT MW-51) to 160 mg/L at CSXT MW-61.

- Measureable LPH was not detected at CSXT MW-59, CSXT MW-61 and CSXT MW-62 during the first quarter 2014 sampling event, but was previously detected and small volumes recovered by absorbent socks during O&M events completed in the first quarter of 2014. VOCs were detected in samples from each of these wells, as well as the highest concentrations of TPH-DRO and TPH-GRO.

Future Activities

ARCADIS plans to continue LPH recovery using the existing product recovery system and methods approved by the MDE in the CAP Approval letter, dated May 27, 2009. ARCADIS plans to conduct one to two visits each month during 2014 in order to operate and maintain the system and to maximize LPH recovery through pump adjustments and/or manual recovery.

A Pre-Design Investigation Work Plan (PDIWP) was submitted to the MDE on April 21, 2014. The objective of the activities described in the work plan is to evaluate the nature and extent of diesel fuel impacts in soils in the vicinity of MW-39 and MW-70 and the soils surrounding the subsurface piping connecting the fueling island north of the former roundhouse to the on-site oil water separator (OWS) located east of the former roundhouse. CSXT and ARCADIS will implement pre-excavation investigation activities upon Maryland Department of Environment (MDE) approval of this work plan. The results of the investigation will be evaluated and utilized to develop a Pipe Removal and Excavation Work Plan (PREWP) for removal of the piping and excavation of impacted soils to the extent practicable. Replacement of the pipe is planned for inclusion in the PREWP.

Based on a review of groundwater sampling results, the consistency of the results since April 2012, discussion with the MDE on April 24, 2014, and the anticipated pipe and soil excavation activities around the former roundhouse, CSXT and ARCADIS recommend revising the groundwater sampling program, as presented in Table 6. The recommendations include continued quarterly sampling at selected monitoring

wells to monitor the potential effects of the planned excavation activities on groundwater conditions, and continued semi-annual sampling at a network of monitoring wells representative of site-wide groundwater constituents. Groundwater analytical results will be reported in the respective quarterly monitoring reports.

Please contact the undersigned at 410.923.7814 if you have any questions or require additional information regarding this correspondence.

Sincerely,

ARCADIS U.S., Inc.

Joshua R. Wilson
Project Scientist

Megan E. Kellner
Project Manager

Copies:
P. Kurzanski, CSXT
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P. Penoyer, NPS
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L. Bohn, Frederick County
B. Cervi, E&E
C. Stubbs, NPS

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1 2014 Groundwater Gauging, Sampling, Remedial Action and Reporting Schedule
2 Well Gauging Data and LPH Recovery Summary (First Quarter 2014)
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4 LPH Recovery via Skimmer Pump (First Quarter 2014)
5 Groundwater Analytical Data Summary (First Quarter 2014)
6 Proposed Groundwater Sampling Program

Figures

1 Contoured Groundwater Elevation Map – March 10, 2014
2 Liquid Phase Hydrocarbon (LPH) Thickness – March 10, 2014
3 TPH-DRO Concentration in Groundwater in Milligrams Per Liter (mg/L) – March 2014

Attachments

1 Historical Gauging Data Charts
2 Groundwater Sampling Logs
3 Laboratory Analytical Report
4 Historical Groundwater and Analytical Data

References

ARCADIS, 2013a. Supplemental Investigation Report and Revised Site Conceptual Model, C&O Canal/Brunswick Rail Yard, Brunswick, Maryland, CSXT Project # 9415381, April 18, 2013.

ARCADIS, 2013c. Revised Supplemental LPH Delineation Work Plan, C&O Canal/Brunswick Rail Yard, Brunswick, Maryland, CSXT Project # 9415381, October 23, 2013

Tables

Table 1
2014 Groundwater Gauging, Sampling, Remedial Action and Reporting Schedule
Quarterly Report – First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Date	Task		
	LPH Monitoring and System O&M[1]	**Groundwater Monitoring & Sampling[2]**	**Remedial Action Progress Report**
January 2014	ü		
February 2014	ü		
March 2014	ü	ü	
April 2014	ü		ü (for 4th Quarter 2013) ü (for 1st Quarter 2014)
May 2014	ü		
June 2014	ü		
July 2014	ü		ü (for 2nd Quarter 2014)
August 2014	ü		
September 2014	ü	ü	
October 2014	ü		ü (for 3rd Quarter 2014)
November 2014	ü		
December 2014	ü		
January 2015	ü		ü (for 4th Quarter 2014)

Notes:

1. Liquid phase hydrocarbon (LPH) Monitoring and System Operation and Maintenance (O&M) will be conducted at a monthly frequency through December 2014, with supplemental visits based on conditions at the Site and pump maintenance needs.

2. Groundwater sampling will be conducted on a semi-annual basis at monitoring wells CSXT MW-3, CSXT MW-6R, CSXT MW-22, CSXT MW-24, CSXT MW-25, CSXT MW-29, CSXT MW-43, CSXT MW-51, CSXT MW-59, CSXT MW-60, CSXT MW-61, CSXT MW-62, CSXT MW-63, CSXT MW-64, CSXT MW-65, CSXT MW-67, CSXT MW-68, CSXT MW-69, CSXT MW-70, NPS MW-1, NPS MW-2, NPS MW-4, NPS MW-5, NPS MW-13, NPS MW-14, NPS MW-16, and NPS MW-18. The analytic parameters include full-suite volatile organic compounds (VOCs) including fuel oxygenates, using United States Environmental Protection Agency (USEPA) Method 8260 and total petroleum hydrocarbons/diesel-range organics (total petroleum hydrocarbons – diesel range organics [TPH-DRO]) by USEPA by Method 8015B. Field parameters including temperature, pH, and specific conductivity shall be measured during the well purging process. Groundwater samples will be collected after three well volumes have been purged from each well with new polyethylene bailers. Quarterly sampling of monitoring wells installed after March 2012 (CSXT MW-59, CSXT MW-60, CSXT MW-61, CSXT MW-62, CSXT MW-63, CSXT MW-64, CSXT MW-65, CSXT MW-67, CSXT MW-68, CSXT MW-69, CSXT MW-70) will be discontinued in 2014, pending approval of the MDE.

   Site-wide synoptic water level and LPH measurements will be collected on a quarterly basis.

Table 2
Well Gauging and LPH Recovery Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well ID	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
CS-1	1/15/2014	239.38		7.20		232.18	--		
	3/10/2014	239.38		7.43		231.95	--		0.007
CS-2	1/15/2014	236.90		4.78		232.12	--		
	3/10/2014	236.90		4.98		231.92	--		0
CS-3	1/15/2014	235.13		4.78		230.35	--		
	3/10/2014	235.13		4.89		230.24	--		0
CS-4	1/15/2014	234.81		4.41		230.40	--		
	3/10/2014	234.81		4.53		230.28	--		0
CS-5	1/15/2014	232.45		2.03		230.42	--		
	3/10/2014	232.45		2.16		230.29	--		0
CSXT MW-01	3/10/2014	247.20		14.23		232.97	--		0
CSXT MW-02	1/15/2014	247.55		10.72		236.83	--		
	2/18/2014	247.55		14.15		233.40	--		
	3/10/2014	247.55		14.26		233.29	--		0.525
CSXT MW-03	3/10/2014	248.38		15.23		233.15	--		0
CSXT MW-04R	3/10/2014	244.68		9.84		234.84	--		2.279
CSXT MW-05	3/10/2014	245.37		12.10		233.27	--		0
CSXT MW-06R	3/10/2014	233.63		4.31		229.32	--		0
CSXT MW-08	3/10/2014	235.51		10.48		225.03	--		0
CSXT MW-09	3/10/2014	237.54		11.87		225.67	--		0
CSXT MW-20	3/10/2014	236.27		6.88		229.39	--		0
CSXT MW-21	3/10/2014	244.26		12.11		232.15	--		0
CSXT MW-22	3/10/2014	245.65		11.60		234.05	--		0
CSXT MW-23	3/10/2014	244.57		6.71		237.86	--		0.026
CSXT MW-24	3/10/2014	244.50		9.06		235.44	--		0
CSXT MW-25	3/10/2014	245.36		12.77		232.59	--		0

Table 2
Well Gauging and LPH Recovery Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well ID	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
CSXT MW-26	1/15/2014	244.67		10.69		233.98	AS		
	2/18/2014	244.67	8.02	8.04	0.02	236.63	AS	0.013	
	3/10/2014	244.67		11.96		232.71	--		
	3/11/2014	244.67		11.98		232.69	AS	0.04	2.441
CSXT MW-27	3/10/2014	244.29		7.55		236.74	--		0
CSXT MW-28	1/15/2014	244.23		8.72		235.51	--		
	3/10/2014	244.23		9.90		234.33	--		0.144
CSXT MW-29	3/10/2014	243.74		12.77		230.97	--		0
CSXT MW-30	3/10/2014	245.46		10.01		235.45	--		0
CSXT MW-31	3/10/2014	244.79		7.17		237.62	--		0
CSXT MW-32	1/15/2014	245.80		11.35		234.45	AS	0.003	
	2/18/2014	245.80		11.59		234.21	AS	0.007	
	3/10/2014	245.80		11.62		234.18	--		
	3/11/2014	245.80		11.64		234.16	AS	0.066	3.718
CSXT MW-33	3/10/2014	244.26		11.52		232.74	--		0
CSXT MW-35	3/10/2014	245.80		13.18		232.62	--		0
CSXT MW-37	1/15/2014	245.06		11.81		233.25	--		
	2/18/2014	245.06	12.02	12.05	0.03	233.01	AS	0.119	
	3/10/2014	245.06		12.02		233.04	--		
	3/11/2014	245.06		12.00		233.06	AS	0.172	
	4/2/2014	245.06	12.43	12.50	0.07	232.57	AS	0.119	14.119
CSXT MW-38	1/15/2014	246.09	4.74	4.80	0.06	241.30	PS	0.462	
	2/18/2014	246.09	4.99	5.01	0.02	241.08	PS	0.264	
	3/10/2014	246.09		5.75		240.34	PS	0.436	
	3/11/2014	246.09		5.65		240.44	PS	0.343	
	4/2/2014	246.09	4.65	4.92	0.27	241.21	PS	0.192	69.306

Table 2
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Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well ID	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
CSXT MW-39	1/15/2014	245.65		11.68		233.97	--		
	2/18/2014	245.65		12.37		233.28	--		
	3/10/2014	245.65		12.55		233.10	--		0.043
CSXT MW-41	1/15/2014	246.07	11.97	12.95	0.98	233.25	SP	2.895	
	2/18/2014	246.07	14.02	14.19	0.17	231.90	SP/PP	2.867	
	3/10/2014	246.07	11.92	14.27	2.35	232.11	--		
	4/2/2014	246.07	12.50	12.71	0.21	233.39	SP		102.262
CSXT MW-43	3/10/2014	238.90		6.05		232.85	--		0
CSXT MW-49	1/15/2014	246.02	4.99	5.39	0.40	240.68	PS	0.053	
	2/18/2014	246.02	5.20	5.28	0.08	240.75	PS/PP	1.295	
	3/10/2014	246.02	6.25	6.35	0.10	239.68	PS	0.687	
	3/11/2014	246.02	6.25	6.35	0.10	239.68	AS	0.793	
	4/2/2014	246.02	5.08	5.49	0.41	240.58	PS	0.079	29.575
CSXT MW-50	3/10/2014	245.53		12.60		232.93	--		0
CSXT MW-51	3/10/2014	249.34		11.59		237.75	--		0
CSXT MW-52	3/10/2014	247.00		9.73		237.27	--		0
CSXT MW-53	1/15/2014	246.10	12.36	13.46	1.10	232.78	SP	1.93	
	2/18/2014	246.10	12.53	14.38	1.85	231.96	SP	0.193	
	3/10/2014	246.10	12.41	14.90	2.49	231.52	--		
	4/2/2014	246.10	12.29	12.31	0.02	233.79	SP		134.373
CSXT MW-54	1/15/2014	245.60	12.19	14.08	1.89	231.77	SP	1.93	
	2/18/2014	245.60	12.18	13.42	1.24	232.34	SP	0.193	
	3/10/2014	245.60	12.43	15.00	2.57	230.93	--		
	4/2/2014	245.60	11.57	13.36	1.79	232.47	SP		86.019

Table 2
Well Gauging and LPH Recovery Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well ID	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
CSXT MW-55	1/15/2014	246.12	12.43	12.51	0.08	233.62	SP	5.597	
	2/18/2014	246.12	12.34	14.51	2.17	231.89	SP	1.93	
	3/10/2014	246.12	12.25	15.00	2.75	231.48	--		
	4/2/2014	246.12	11.58	13.62	2.04	232.77	PP	0.713	1.96.343
CSXT MW-56	1/15/2014	244.63	10.90	12.67	1.77	232.19	SP	1.158	
	2/18/2014	244.63	11.21	14.20	2.99	230.82	SP	0.965	
	3/10/2014	244.63	11.15	14.08	2.93	230.93	--		124.886
CSXT MW-57	1/15/2014	244.52		10.85		233.67	--		
	2/18/2014	244.52		11.26		233.26	--		
	3/10/2014	244.52		10.89		233.63	--		41.470
CSXT MW-58	1/15/2014	244.42		11.23		233.19	--		
	2/18/2014	244.42		11.37		233.05	--		
	3/10/2014	244.42		11.26		233.16	--		3.540
CSXT MW-59	1/15/2014	246.07		8.64		237.43	--		
	3/10/2014	246.07		10.66		235.41	--		
	3/11/2014	246.07		10.66		235.41	AS	0.046	3.678
CSXT MW-60	1/15/2014	245.57	11.59	11.73	0.14	233.86	AS	0.172	
	2/18/2014	245.57	11.83	12.16	0.33	233.45	AS	0.324	
	3/10/2014	245.57	11.85	12.03	0.18	233.56	--		
	3/11/2014	245.57	11.85	12.03	0.18	233.56	AS	0.251	
	4/2/2014	245.57	11.29	11.50	0.21	234.10	AS	0.238	5.902
CSXT MW-61	1/15/2014	245.63		11.71		233.92	--		
	3/10/2014	245.63		12.05		233.58	--		
	3/11/2014	245.63		12.06		233.57	AS		
	4/2/2014	245.63	11.60	11.65	0.05	233.99	AS	0.106	0.150

Table 2
Well Gauging and LPH Recovery Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well ID	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
CSXT MW-62	1/15/2014	246.08		12.31		233.77	AS	0.04	
	2/18/2014	246.08	12.56	12.73	0.17	233.37	AS	0.013	
	3/10/2014	246.08		12.56		233.52	--		
	3/11/2014	246.08		12.51		233.57	AS	0.053	
	4/2/2014	246.08		12.08		234.00	AS	0.026	6.044
CSXT MW-63	1/15/2014	246.25	12.70	12.99	0.29	233.30	PS	0.053	
	2/18/2014	246.25	12.84	13.52	0.68	232.82	PS	0.793	
	3/10/2014	246.25	13.29	13.90	0.61	232.43	PS	0.793	
	3/11/2014	246.25	13.31	13.91	0.60	232.42	PS	0.793	
	4/2/2014	246.25	12.29	13.50	1.21	232.91	PS/PP	2.451	
CSXT MW-64	1/15/2014	245.45		7.11		238.34	--		
	3/10/2014	245.45		4.26		241.19	--		0
CSXT MW-65	1/15/2014	245.54		5.72		239.82	--		
	3/10/2014	245.54		6.11		239.43	--		0
CSXT MW-67	1/15/2014	245.83		11.81		234.02	--		
	3/10/2014	245.83		12.05		233.78	--		0
CSXT MW-68	1/15/2014	245.09		6.21		238.88	--		
	3/10/2014	245.09		4.28		240.81	--		0
CSXT MW-69	1/15/2014	244.98		11.97		233.01	--		
	2/18/2014	244.98		12.07		232.91	--		
	3/10/2014	244.98		12.12		232.86	--		0
CSXT MW-70	1/15/2014	245.57		12.38		233.19	--		
	2/18/2014	245.57		12.52		233.05	--		
	3/10/2014	245.57		12.63		232.94	--		
	3/11/2014	245.57		12.62		232.95	--		0.353

Table 2
Well Gauging and LPH Recovery Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well ID	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
EW-1	3/10/2014	243.50		7.41		236.09	--		0.026
EW-2	1/15/2014	243.30		9.29		234.01	--		
	2/18/2014	243.30		10.29		233.01	--		
	3/10/2014	243.30		10.22		233.08	--		0.036
EW-3	1/15/2014	242.70	10.55	10.58	0.03	232.12	AS	0.198	
	2/18/2014	242.70	10.85	10.87	0.02	231.83	AS	0.139	
	3/10/2014	242.70		10.89		231.81	AS		
	3/11/2014	242.70		10.91		231.79	AS	0.071	13.256
EW-4	1/15/2014	243.20		8.23		234.97	--		
	2/18/2014	243.20		9.68		233.52	--		
	3/10/2014	243.20		9.64		233.56	--		0
EW-5	1/15/2014	243.60		11.12		232.48	AS	0.053	
	2/18/2014	243.60	11.49	11.50	0.01	232.10	AS	0.079	
	3/10/2014	243.60		11.58		232.02	--		
	3/11/2014	243.60		11.41		232.19	AS	0.079	4.160
EW-6	1/15/2014	242.40		10.87		231.53	--		
	2/18/2014	242.40		11.16		231.24	--		
	3/10/2014	242.40		11.13		231.27	--		0
EW-7	1/15/2014	243.20		10.89		232.31	--		
	2/18/2014	243.20		11.17		232.03	--		
	3/10/2014	243.20		11.20		232.00	--		0
NPS MW-01	3/10/2014	234.94		5.26		229.68	--		0
NPS MW-02	3/10/2014	237.19		4.68		232.51	--		0
NPS MW-03	3/10/2014	234.50		4.91		229.59	--		0
NPS MW-04	1/15/2014	238.50		5.58		232.92	--		0
	3/10/2014	238.50		5.86		232.64	--		0

Table 2
Well Gauging and LPH Recovery Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well ID	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
NPS MW-05	3/10/2014	235.69		7.55		228.14	--		0
NPS MW-10	3/10/2014	237.73		5.62		232.11	--		0
NPS MW-12	3/10/2014	242.61		10.07		232.54	--		0
NPS MW-13	3/10/2014	234.72		10.43		224.29	--		0
NPS MW-14	3/10/2014	234.74		7.72		227.02	--		0
NPS MW-15	3/10/2014	234.38		5.93		228.45	--		0
NPS MW-16	3/10/2014	240.09		8.63		231.46	--		0
NPS MW-17	3/10/2014	242.71		13.83		228.88	--		0
NPS MW-18	1/15/2014	234.15		2.99		231.16	--		0
	3/10/2014	234.15		1.68		232.47	--		0
Total Cumulative LPH Recovered Since July 2009 (Gallons):									**865.948**

Notes:

amsl - above mean sea level
DTLPH- depth to liquid phase hydrocarbons
DTW - depth to water
ft bTOC - feet below top of well casing

NG - not gaguged
LPH - liquid phase hydrocarbon

SP - Skimmer pump
PS - Passive skimmer
PP - Peristaltic pump
AS - Absorbent sock

Table 3
LPH Recovery Summary Table
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

LPH Recovery by Recovery Method		
LPH Recovery Method	**LPH Recovered First Quarter 2014 (gallons)**	**Cumulative LPH Recovered Since July 2009 (gallons)**
Skimmer pumps	17.8	661.4
Passive skimmers	6.0	77.6
Peristaltic pump	5.3	94.0
Absorbent Sock	3.2	32.9
Totals:	**32.3**	**865.9**

Notes:
System O&M and LPH recovery activities were conducted on January 15, February 18, March 11 and April 2, 2014. The skimmer pump system operating at CSXT MW-41, CSXT MW-53, and CSXT MW-54, was off line February 18 through March 11, while replacement parts were ordered and installed.

Table 4
LPH Recovery via Skimmer Pump
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, Maryland

Well	Pump Installed	LPH Recovered First Quarter 2014 (gallons)	Cumulative LPH Recovery Since July 2009 (gallons)	Notes
MW-38	7/15/2009		55.7	No skimmer pump this period
MW-41	9/2/2010	3.9	85.6	Pump operational
MW-53	7/14/2009	2.1	125.7	Pump operational
MW-54	9/2/2010	2.1	69.7	Pump operational
MW-55	12/16/2009	7.5	183.1	Pump operational
MW-56	11/5/2009	2.1	114.0	Pump operational
MW-57	12/29/2009		27.6	No skimmer pump this period
	Totals:	**17.8**	**661.4**	

Notes:
System O&M and LPH recovery activities were conducted on January 15, February 18, March 11 and April 2, 2014. The skimmer pump system operating at CSXT MW-41, CSXT MW-53, and CSXT MW-54, was off line February 18 through March 11, while replacement parts were ordered and installed.

Table 5
Groundwater Analytical Data Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, MD

Constituent	Location ID: / Sample ID: / Sample Date: / Units:	CSXT MW-03 / MW-3 (031314) / 3/13/2014	CSXT MW-6R / MW-6R (031314) / 3/13/2014	CSXT MW-22 / MW-22 (031314) / 3/13/2014	CSXT MW-24 / MW-24 (031414) / 3/14/2014	CSXT MW-25 / MW-25 (031214) / 3/12/2014	CSXT MW-29 / MW-29 (031414) / 3/14/2014
VOCs (ug/L)							
Carbon disulfide	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.52 J**
Cyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	ug/L	< 1.0 U	**2.6**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylcyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methyl-Tert-Butylether	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.5**
Naphthalene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butyl alcohol	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Total Xylenes	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
TPH (mg/L)							
Diesel Range Organics (DRO) [C10-C28]	mg/L	**0.086 JB**	**--**	**6.7 B**	**0.34**	**2.6**	**4.7**
Gasoline Range Organics (GRO) [C6-C10]	mg/L	**0.060 B**	**0.190 B**	**0.034 JB**	**0.047 JB**	**0.18 B**	**0.041 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
mg/L - milligrams per liter
ug/L - micrograms per liter
< 1.0 U - Concentration is less than the reporting limit
J - Concentration is estimated
B - Constituent was detected in laboratory method blank

Table 5
Groundwater Analytical Data Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, MD

Constituent	Location ID: / Sample ID: / Sample Date: / Units:	CSXT MW-43 / MW-43 (031314) / 3/13/2014	CSXT MW-51 / MW-51 (031414) / 3/14/2014	CSXT MW-59 / MW-59 (031214) / 3/12/2014	CSXT MW-61 / MW-61 (031214) / 3/12/2014	CSXT MW-62 / MW-62 (031214) / 3/12/2014	CSXT MW-64 / MW-64 (031214) / 3/12/2014
VOCs (ug/L)							
Carbon disulfide	ug/L	< 1.0 U	< 1.0 U	**0.60 J**	**1.2**	< 1.0 U	< 1.0 U
Cyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	**2.8**	**2.5**	< 1.0 U
Ethylbenzene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	ug/L	< 1.0 U	< 1.0 U	**10**	**25**	**17**	< 1.0 U
Methylcyclohexane	ug/L	< 1.0 U	< 1.0 U	**2.1**	**17**	**11**	< 1.0 U
Methyl-Tert-Butylether	ug/L	< 1.0 U	**3.4**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**21**	< 1.0 U
tert-Butyl alcohol	ug/L	< 10 U	**21**	< 10 U	< 10 U	< 10 U	< 10 U
Total Xylenes	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
TPH (mg/L)							
Diesel Range Organics (DRO) [C10-C28]	mg/L	**1.6 B**	**0.085 J**	**110**	**160**	**150**	**1.9**
Gasoline Range Organics (GRO) [C6-C10]	mg/L	**0.018 JB**	**0.022 JB**	**0.16 B**	**0.31 B**	**0.44 B**	**0.028 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
mg/L - milligrams per liter
ug/L - micrograms per liter
< 1.0 U - Concentration is less than the reporting limit
J - Concentration is estimated
B - Constituent was detected in laboratory method blank

Table 5
Groundwater Analytical Data Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, MD

Constituent	Location ID: / Sample ID: / Sample Date: / Units:	CSXT MW-65 / MW-65 (031214) / 3/12/2014	CSXT MW-67 / MW-67 (031214) / 3/12/2014	CSXT MW-68 / MW-68 (031214) / 3/12/2014	CSXT MW-68 / DUP-01 (031214) / 3/12/2014	CSXT MW-69 / MW-69 (031214) / 3/12/2014	CSXT MW-70 / MW-70 (031214) / 3/12/2014
VOCs (ug/L)							
Carbon disulfide	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.59 J**
Isopropylbenzene	ug/L	**7.5**	**4.1**	< 1.0 U	< 1.0 U	< 1.0 U	**0.54 J**
Methylcyclohexane	ug/L	< 1.0 U	**2.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methyl-Tert-Butylether	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.1**
tert-Butyl alcohol	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Total Xylenes	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	**2.9 J**
TPH (mg/L)							
Diesel Range Organics (DRO) [C10-C28]	mg/L	**13**	**32**	**3.5**	**2.9**	**5**	**4.7**
Gasoline Range Organics (GRO) [C6-C10]	mg/L	**0.083 B**	**0.15**	**0.05 B**	**0.059 B**	**0.21 B**	**0.15 B**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
mg/L - milligrams per liter
ug/L - micrograms per liter
< 1.0 U - Concentration is less than the reporting limit
J - Concentration is estimated
B - Constituent was detected in laboratory method blank

Table 5
Groundwater Analytical Data Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, MD

Constituent	Location ID: / Sample ID: / Sample Date: / Units:	NPS MW-01 / NPS MW-1 (031314) / 3/13/2014	NPS MW-02 / NPS MW-2 (031314) / 3/13/2014	NPS MW-04 / NPS MW-4 (031314) / 3/13/2014	NPS MW-05 / NPS MW-5 (031314) / 3/13/2014	NPS MW-13 / NPS MW-13 (031314) / 3/13/2014
VOCs (ug/L)						
Carbon disulfide	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	ug/L	< 1.0 U	< 1.0 U	**1.2**	< 1.0 U	< 1.0 U
Methylcyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methyl-Tert-Butylether	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butyl alcohol	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Total Xylenes	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
TPH (mg/L)						
Diesel Range Organics (DRO) [C10-C28]	mg/L	**0.24 B**	**0.55 B**	**7.8 B**	**0.310 B**	**0.34 B**
Gasoline Range Organics (GRO) [C6-C10]	mg/L	**0.015 JB**	**0.016 JB**	**0.069 B**	**0.017 JB**	**0.02 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
mg/L - milligrams per liter
ug/L - micrograms per liter
< 1.0 U - Concentration is less than the reporting limit
J - Concentration is estimated
B - Constituent was detected in laboratory method blank

Table 5
Groundwater Analytical Data Summary
Quarterly Report - First Quarter 2014
Brunswick Yard, Brunswick, MD

Constituent	Location ID: / Sample ID: / Sample Date: / Units:	NPS MW-13 / DUP-02 (031314) / 3/13/2014	NPS MW-14 / NPS MW-14 (031314) / 3/13/2014	NPS MW-16 / NPS MW-16 (031314) / 3/13/2014	NPS MW-18 / NPS MW-18 (031314) / 3/13/2014
VOCs (ug/L)					
Carbon disulfide	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylcyclohexane	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methyl-Tert-Butylether	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	ug/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butyl alcohol	ug/L	< 10 U	< 10 U	< 10 U	< 10 U
Total Xylenes	ug/L	< 10 U	< 10 U	< 10 U	< 10 U
TPH (mg/L)					
Diesel Range Organics (DRO) [C10-C28]	mg/L	**0.55 B**	**1.20 B**	**0.80 B**	**0.26 B**
Gasoline Range Organics (GRO) [C6-C10]	mg/L	**0.043 JB**	**0.054 B**	**0.015 JB**	**0.017 JB**

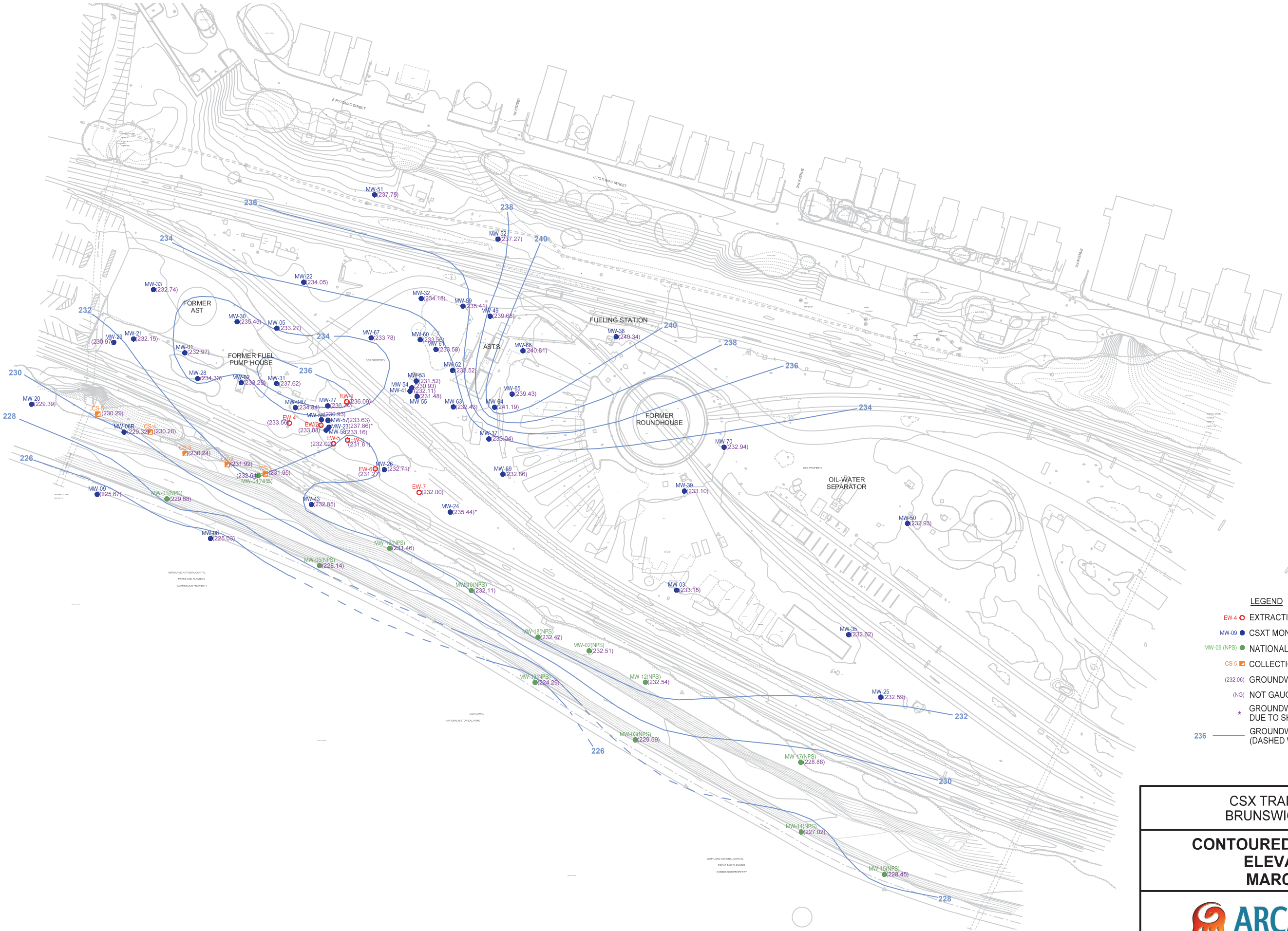
Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
mg/L - milligrams per liter
ug/L - micrograms per liter
< 1.0 U - Concentration is less than the reporting limit
J - Concentration is estimated
B - Constituent was detected in laboratory method blank

Table 6
Proposed Future Groundwater Sampling Program Recommendations
Quarterly Report - First Quarter 2014
Brunswick Yard
Brunswick, Maryland

Well Location ID	Current Quarterly Groundwater Sampling	Current Semi-Annual Groundwater Sampling	Proposed Quarterly Groundwater Sampling	Proposed Semi-Annual Groundwater Sampling	Notes
CSXT MW-3		X		X	Downgradient Site Well
CSXT MW-6R		X		X	Downgradient Site Well
CSXT MW-22		X		X	Representative Site Well
CSXT MW-24		X		X	Representative Site Well
CSXT MW-25		X		X	Representative Site Well
CSXT MW-29		X		X	Representative Site Well
CSXT MW-43		X		X	Representative Site Well
CSXT MW-51		X		X	Upgradient Well
CSXT MW-59	X[1]	X[1]			LPH Monitoring Location
CSXT MW-60	X[1]	X[1]			LPH Monitoring Location
CSXT MW-61	X[1]	X[1]			LPH Monitoring Location
CSXT MW-62	X[2]	X[2]			LPH Monitoring Location
CSXT MW-63	X[3]	X[3]			LPH Monitoring Location
CSXT MW-64	X[1]	X[1]			LPH Monitoring Location
CSXT MW-65	X[1]	X[1]	X	X	Excavation Monitoring Location
CSXT MW-67	X[4]	X[4]			LPH Monitoring Location
CSXT MW-68	X[4]	X[4]	X	X	Excavation Monitoring Location
CSXT MW-69	X[4]	X[4]	X	X	Excavation Monitoring Location
CSXT MW-70	X[4]	X[4]	X	X	Excavation Monitoring Location, LPH Variably Present in Well
NPS MW-1		X		X	Downgradient NPS Well
NPS MW-2		X		X	Downgradient NPS Well
NPS MW-4		X		X	Downgradient NPS Well
NPS MW-5		X		X	Downgradient NPS Well
NPS MW-13		X		X	Downgradient NPS Well
NPS MW-14		X		X	Downgradient NPS Well
NPS MW-16		X		X	Downgradient NPS Well
NPS MW-18	X	X	X	X	Downgradient NPS Well
Total	12	27	5	20	

1 - Well Installed in March 2012. At least five, and up to eight, rounds of quarterly sampling completed at wells where LPH was not present at the time of sampling.
2 - Well Installed in March 2012, 2 rounds of quarterly sampling completed due to presence of LPH at time of sampling.
3 - Well Installed in March 2012, no samples collected due to presence of LPH at time of sampling.
4 - Well Installed in January 2013, 5 rounds of quarterly sampling completed.

Figures

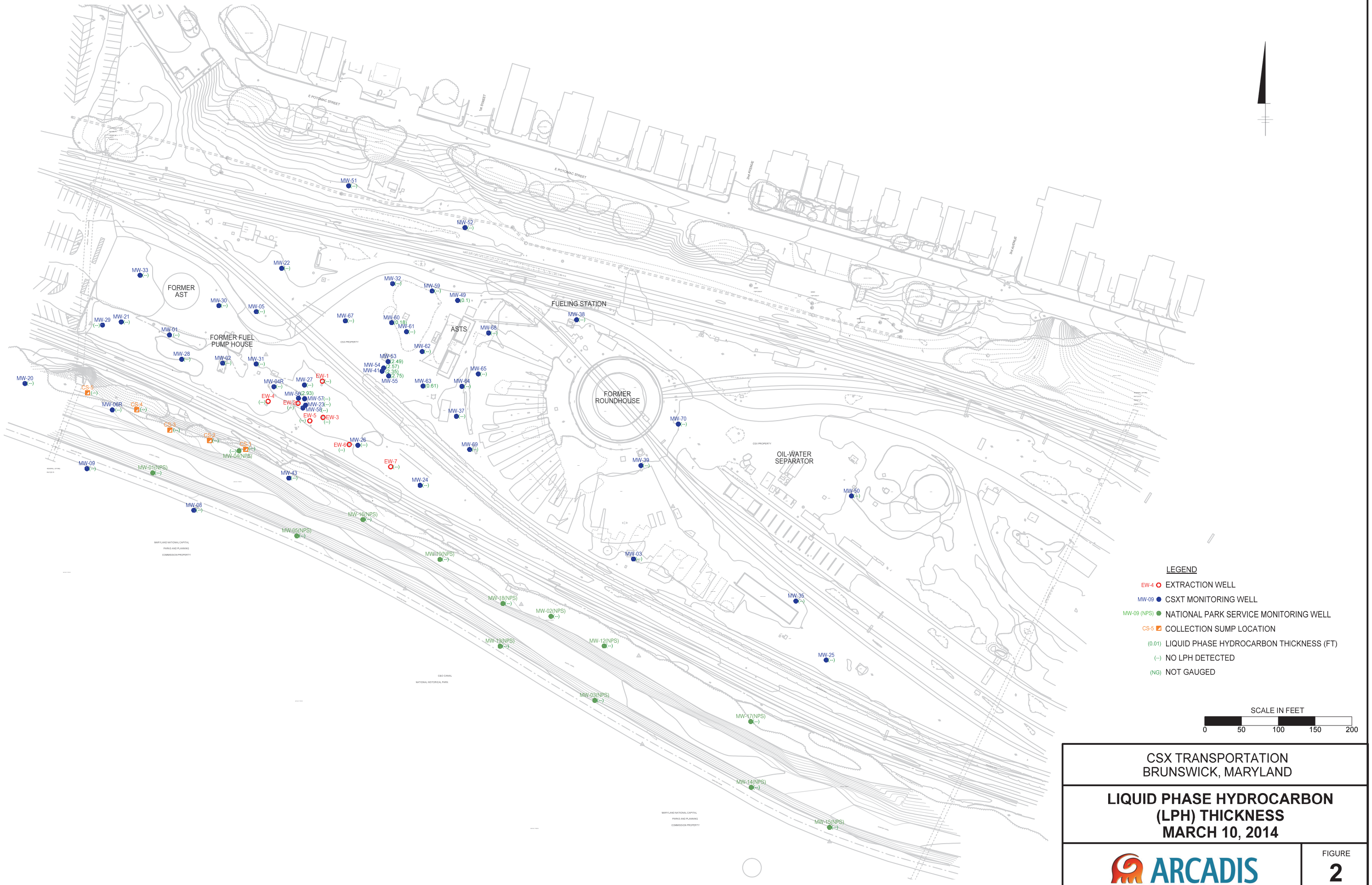


CSX TRANSPORTATION
BRUNSWICK, MARYLAND

CONTOURED GROUNDWATER ELEVATION MAP
MARCH 10, 2014

ARCADIS

FIGURE
1

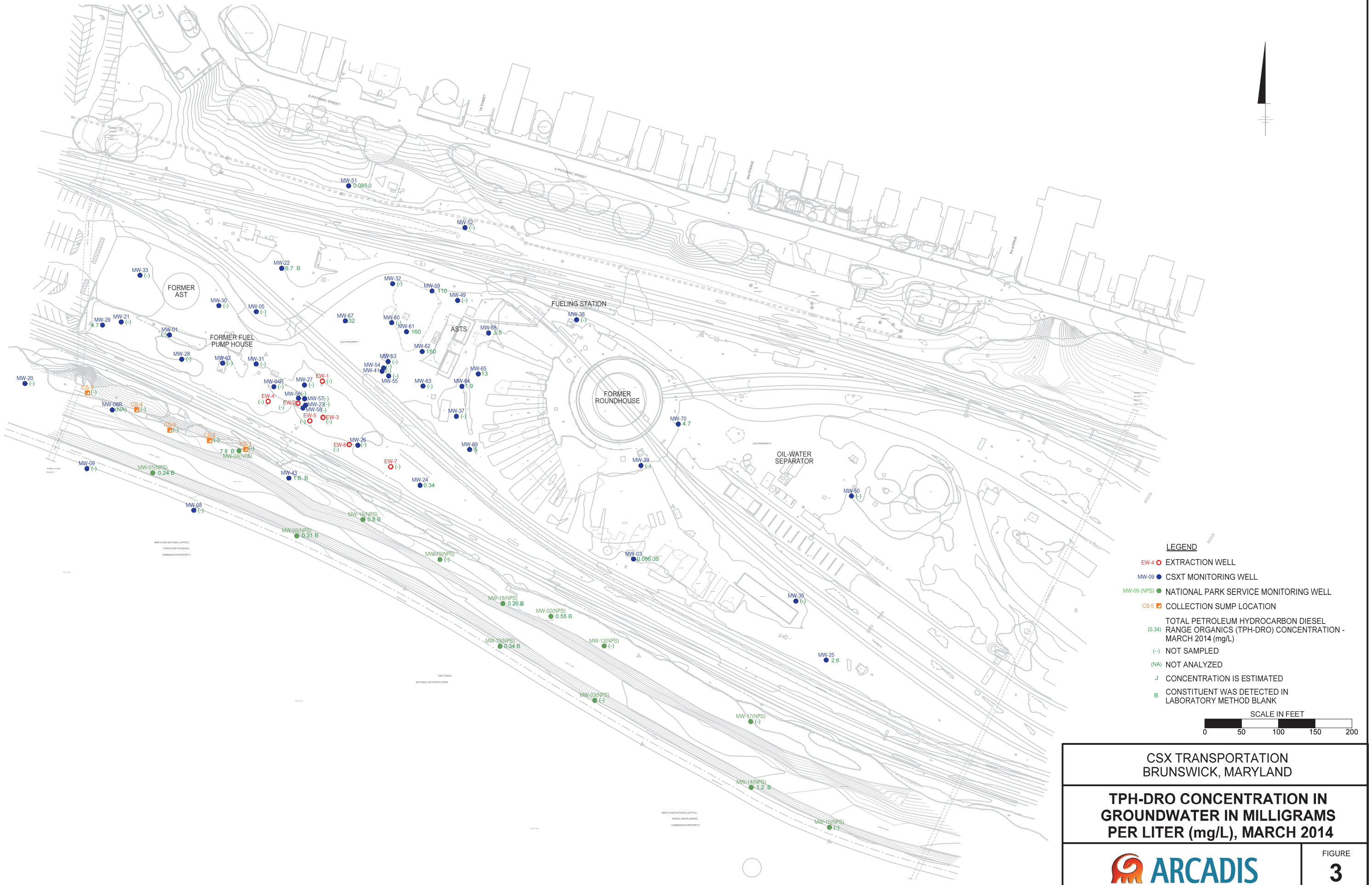


CSX TRANSPORTATION
BRUNSWICK, MARYLAND

LIQUID PHASE HYDROCARBON (LPH) THICKNESS
MARCH 10, 2014

ARCADIS

FIGURE
2



CSX TRANSPORTATION
BRUNSWICK, MARYLAND

TPH-DRO CONCENTRATION IN GROUNDWATER IN MILLIGRAMS PER LITER (mg/L), MARCH 2014

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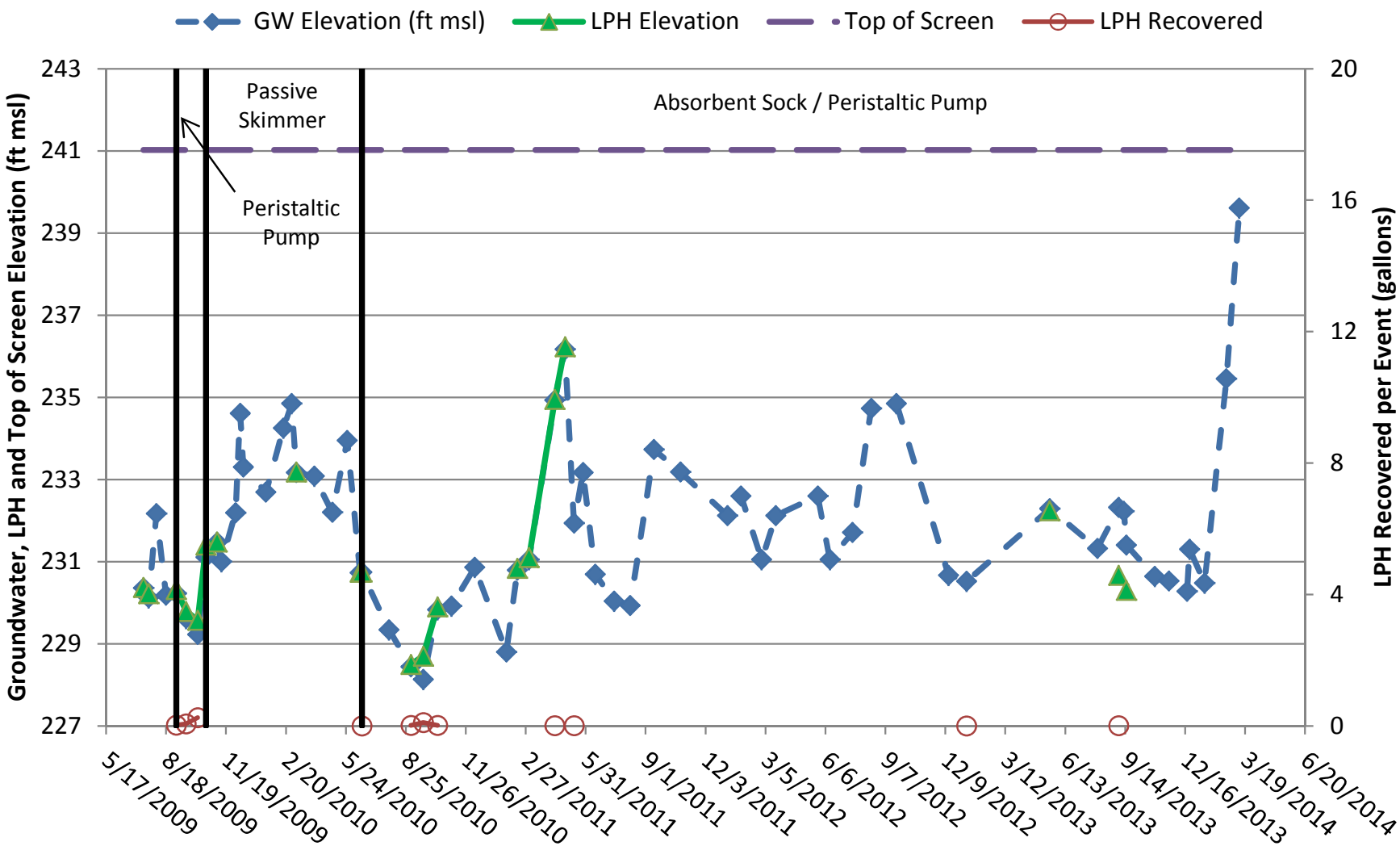
FIGURE
3

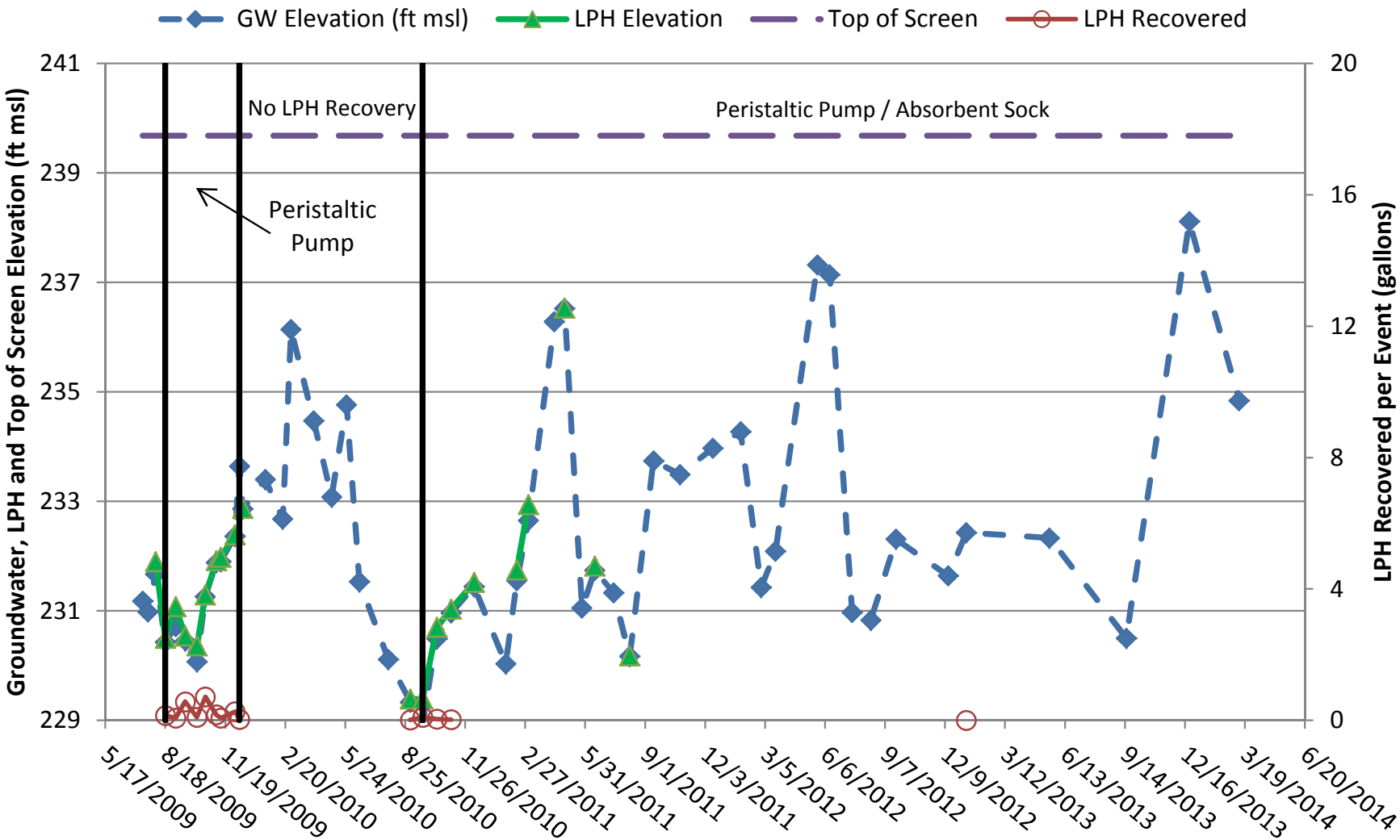
Attachment 1

Historical Gauging Data Charts

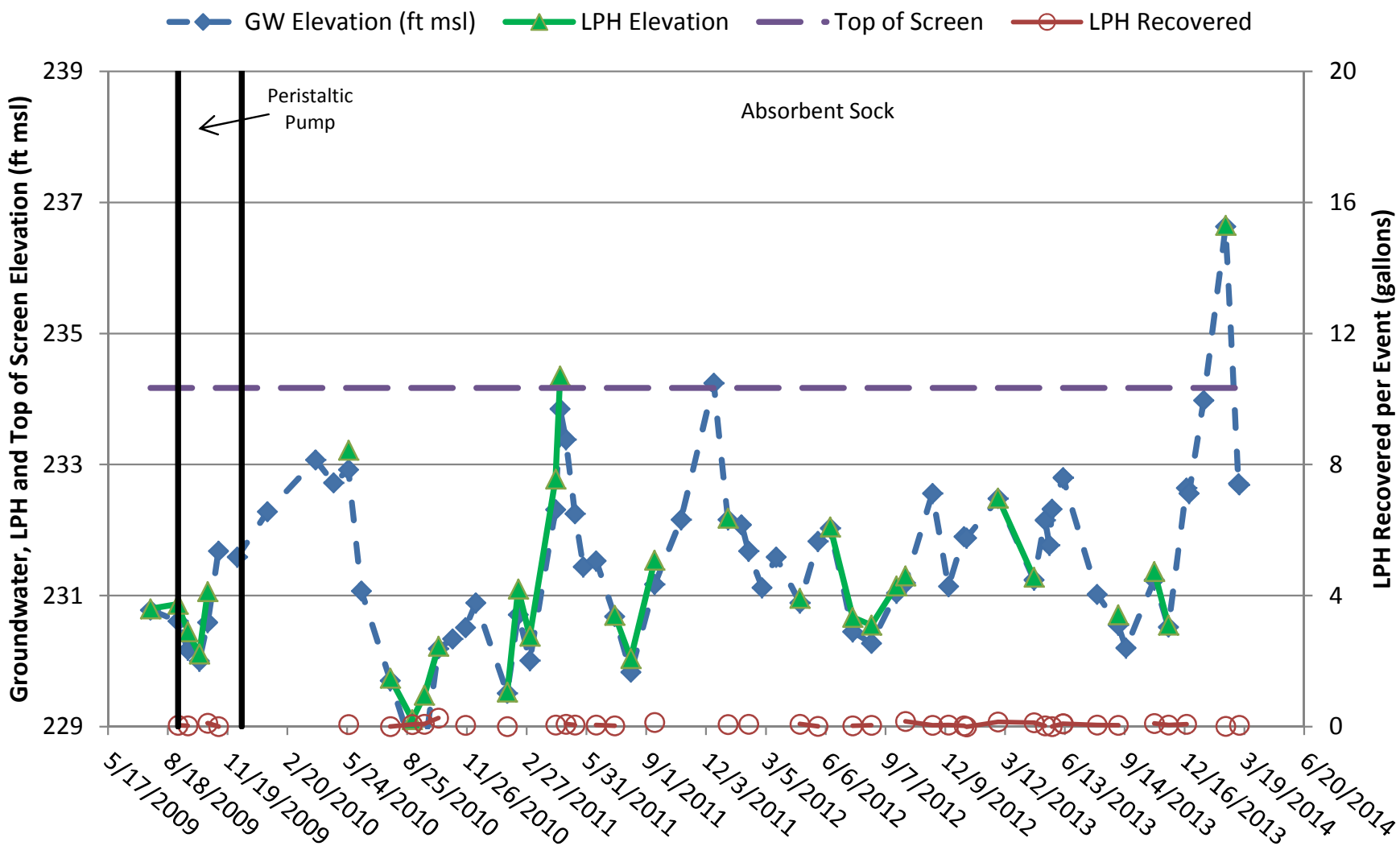
LPH and Groundwater Elevations and LPH Recovery: MW-2
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



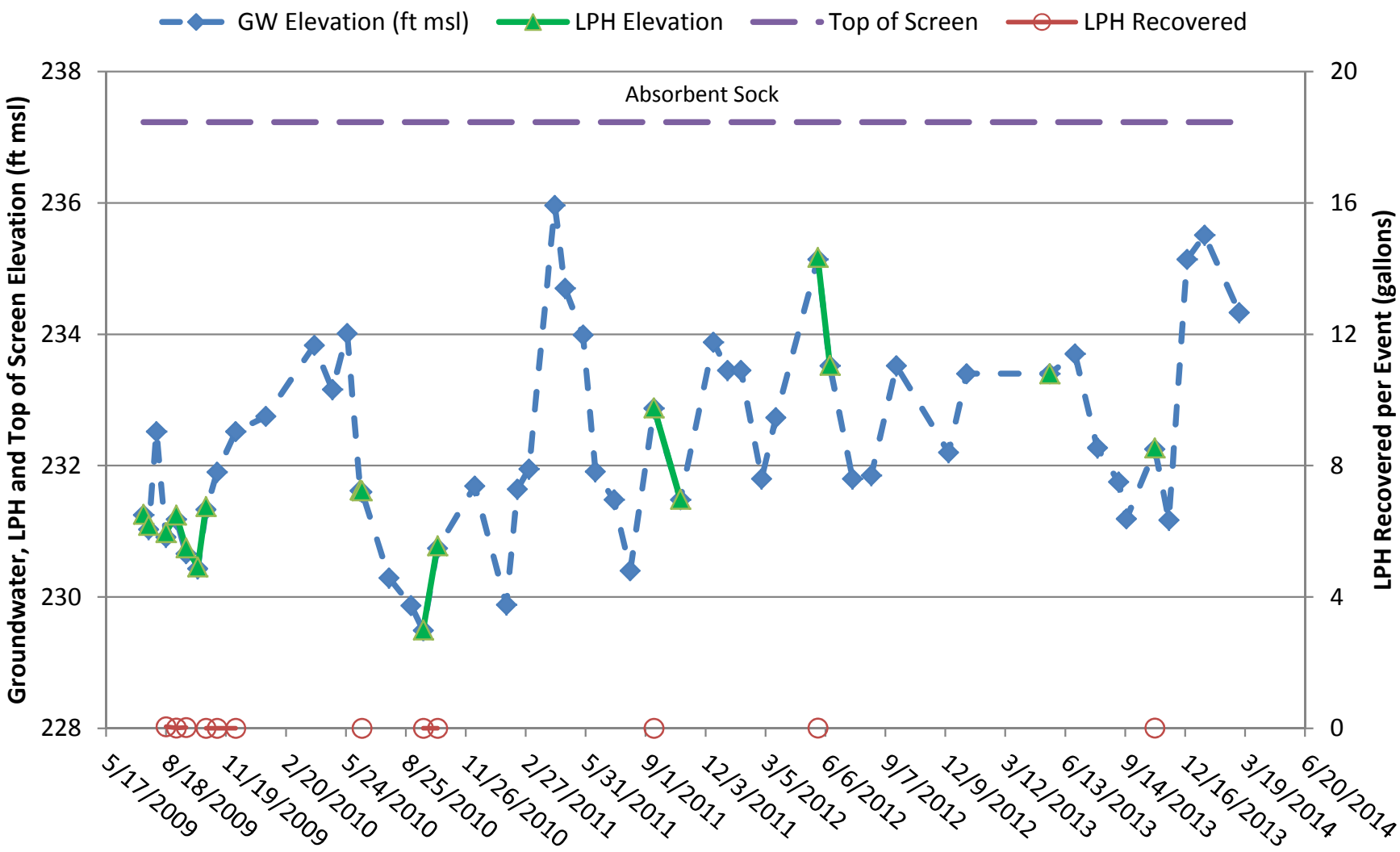
LPH and Groundwater Elevations and LPH Recovery: MW-4R
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



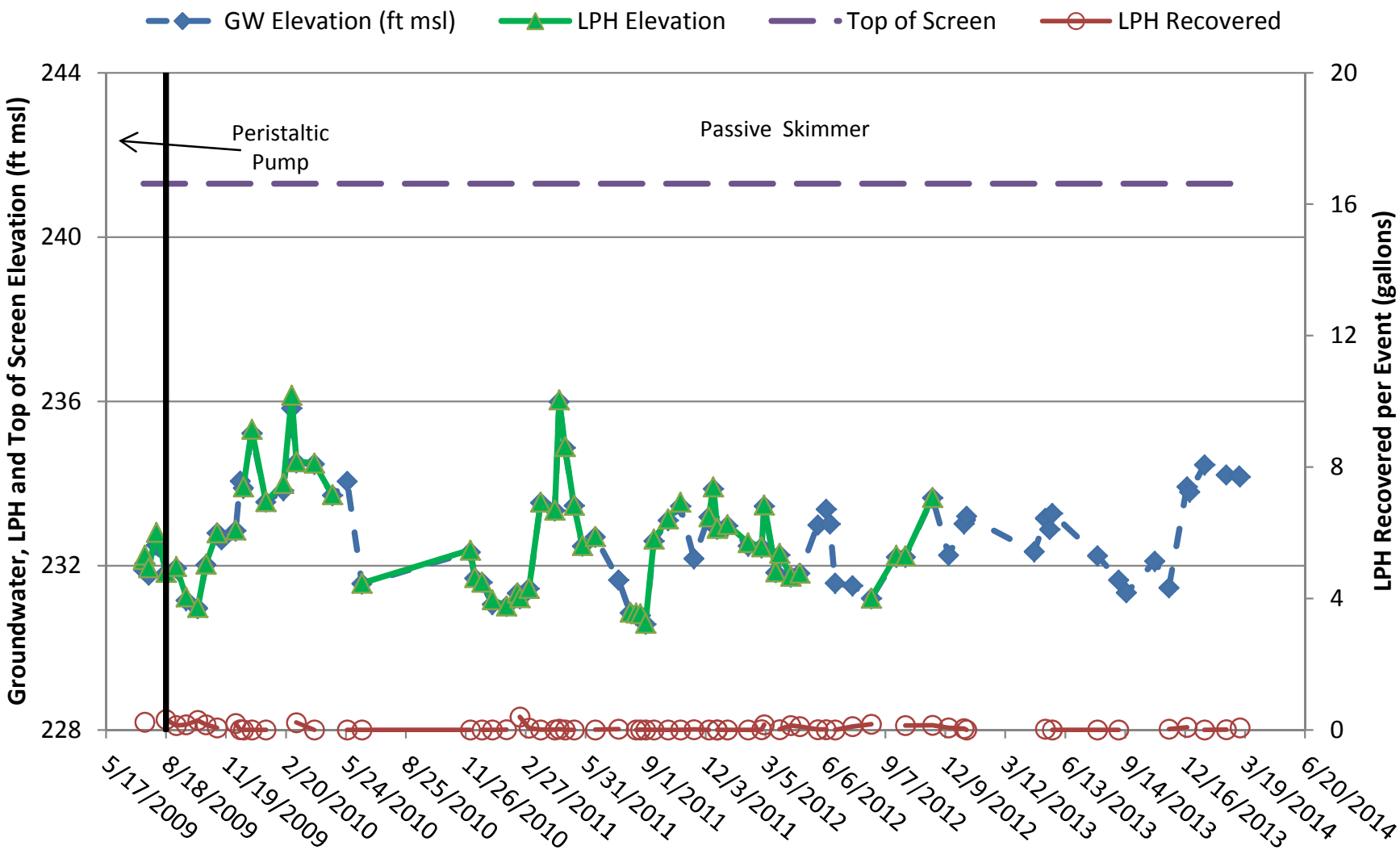
LPH and Groundwater Elevations and LPH Recovery: MW-26
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



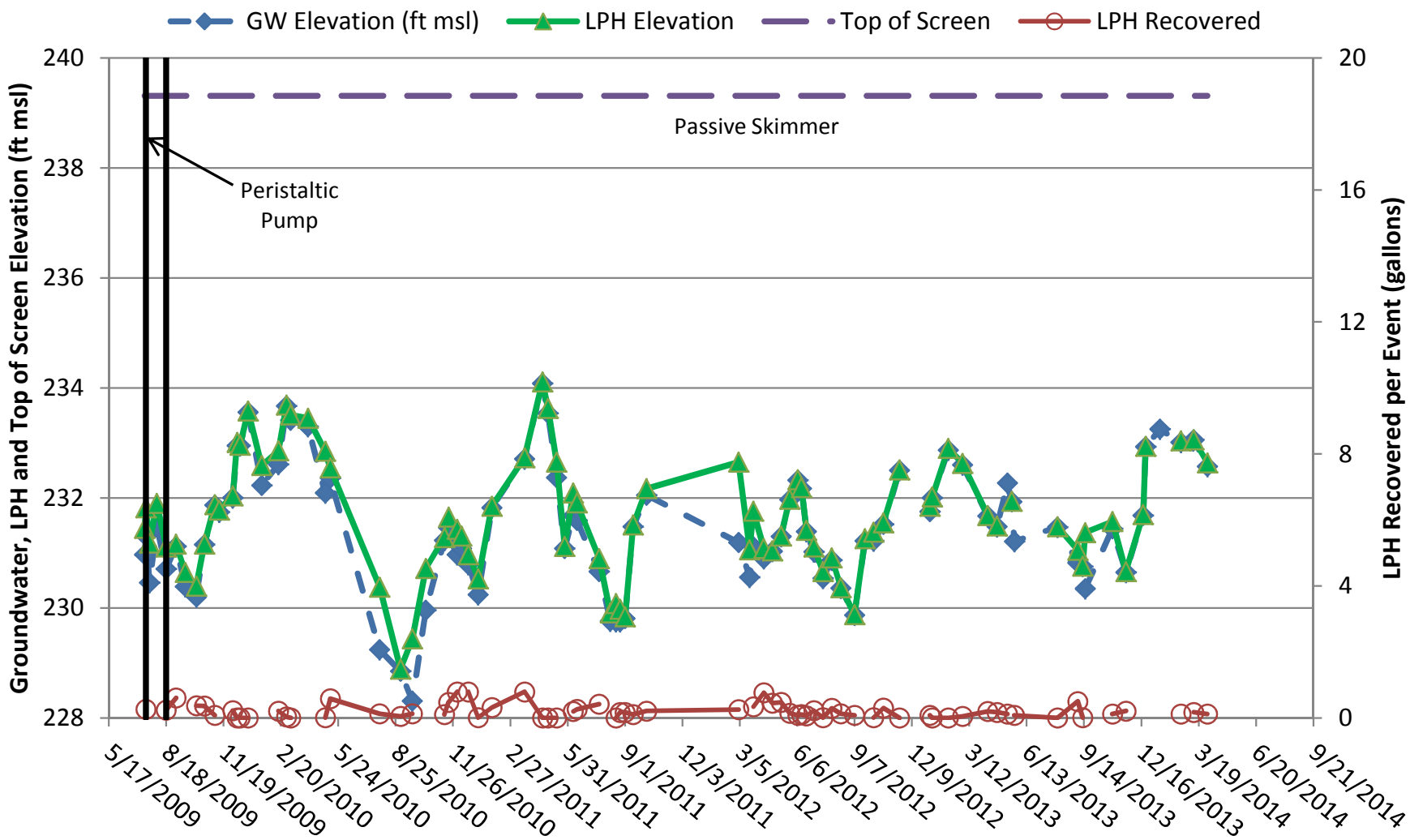
LPH and Groundwater Elevations and LPH Recovery: MW-28
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



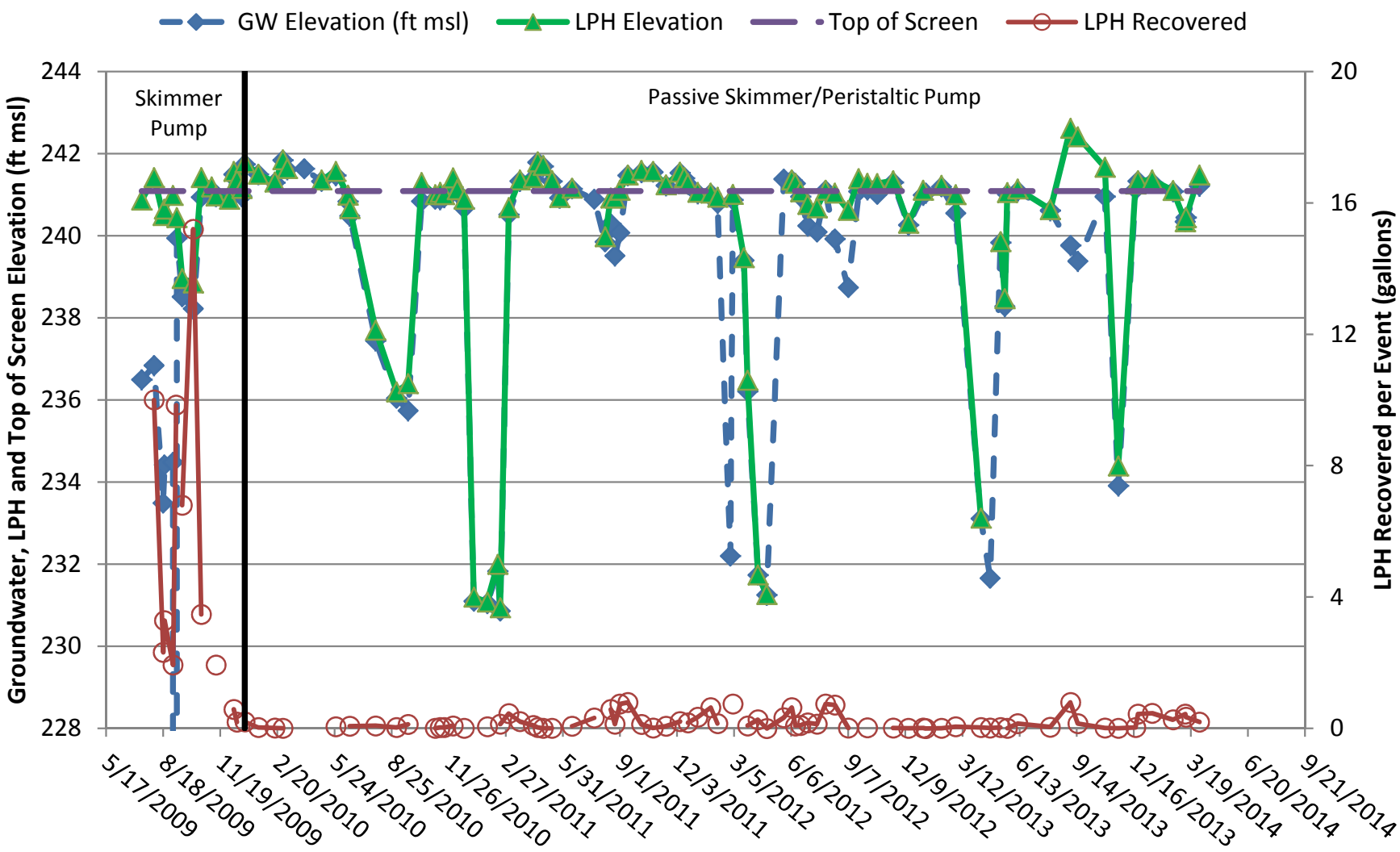
LPH and Groundwater Elevations and LPH Recovery: MW-32
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



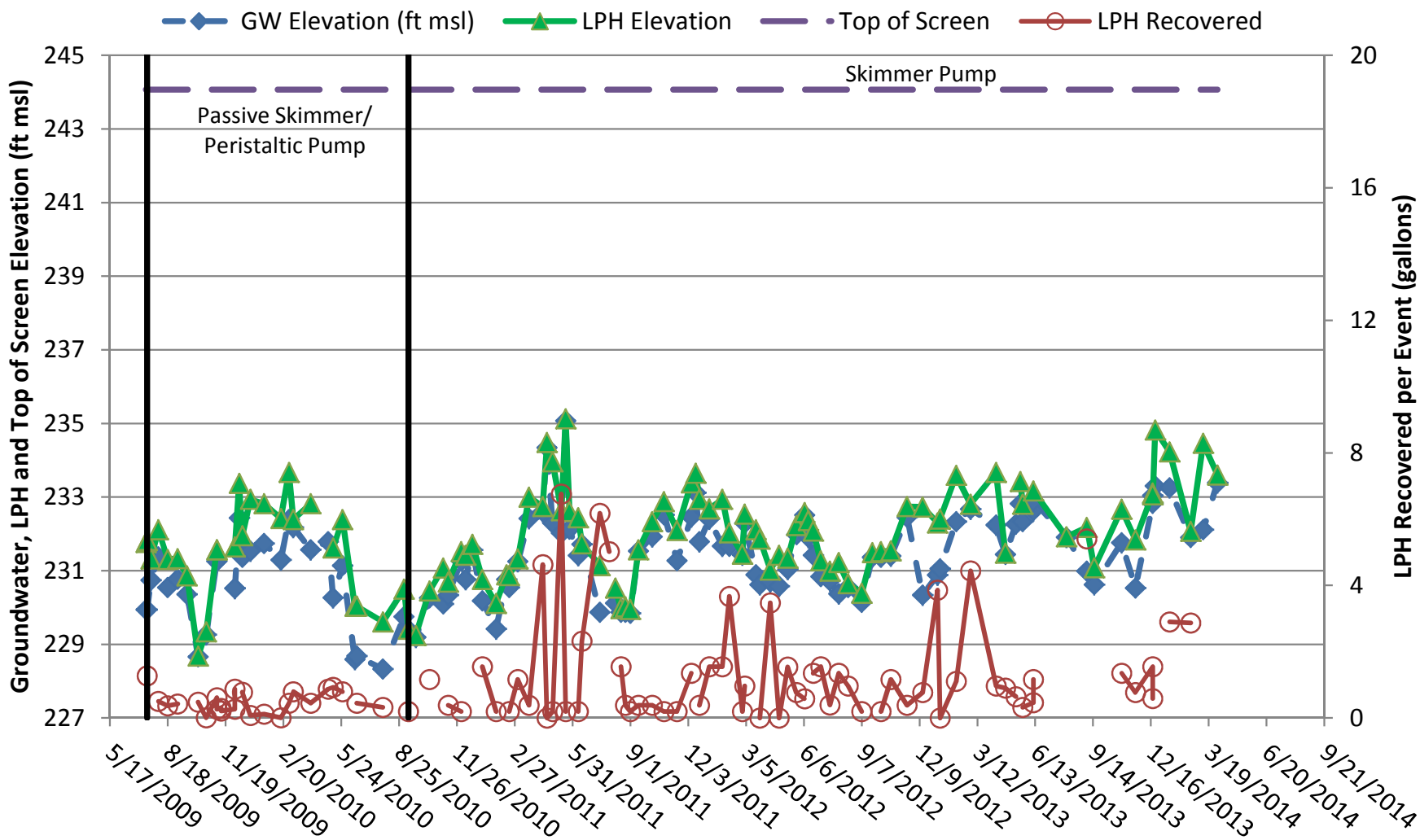
LPH and Groundwater Elevations and LPH Recovery: MW-37
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



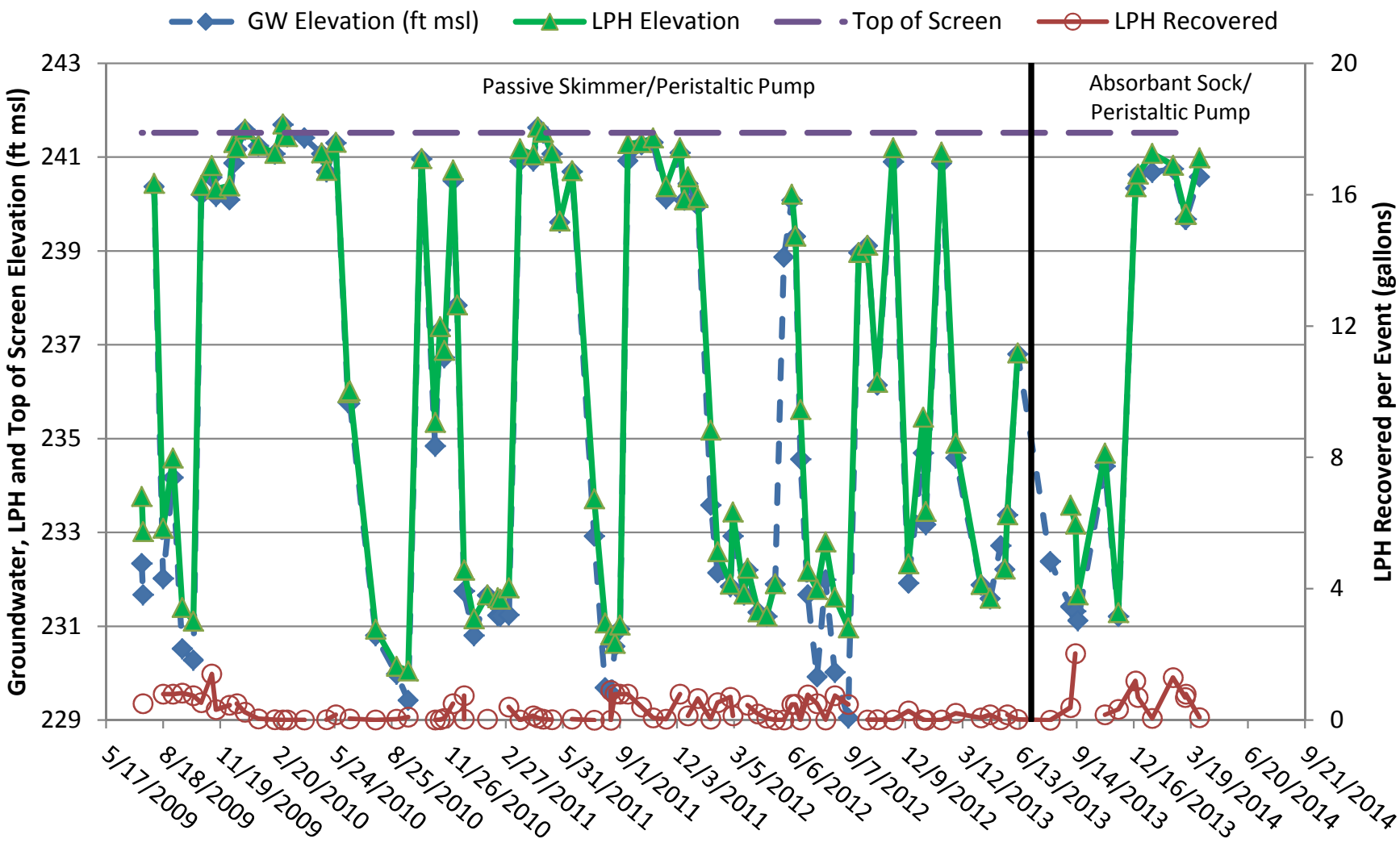
LPH and Groundwater Elevations and LPH Recovery: MW-38
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



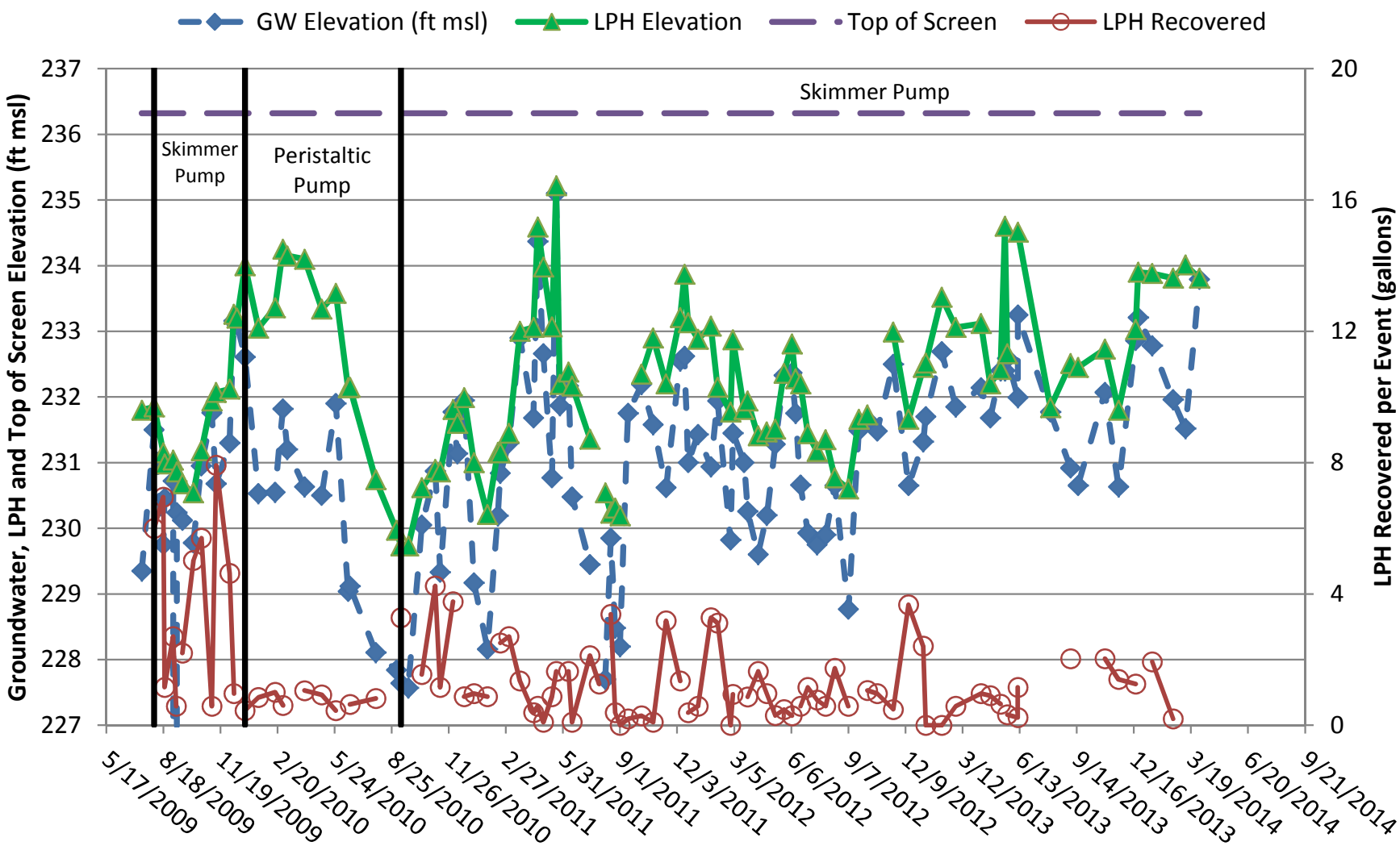
LPH and Groundwater Elevations and LPH Recovery: MW-41
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



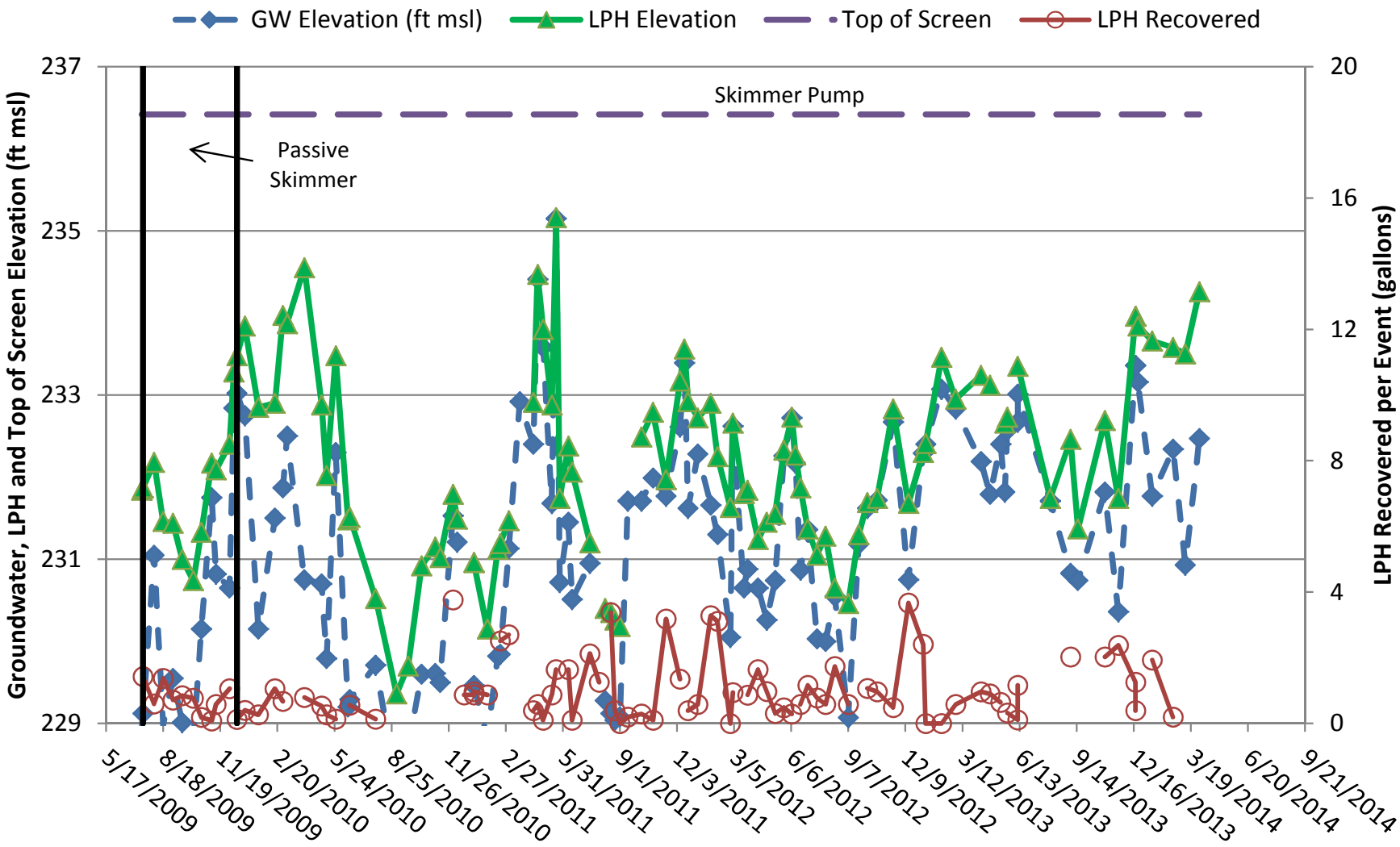
LPH and Groundwater Elevations and LPH Recovery: MW-49
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



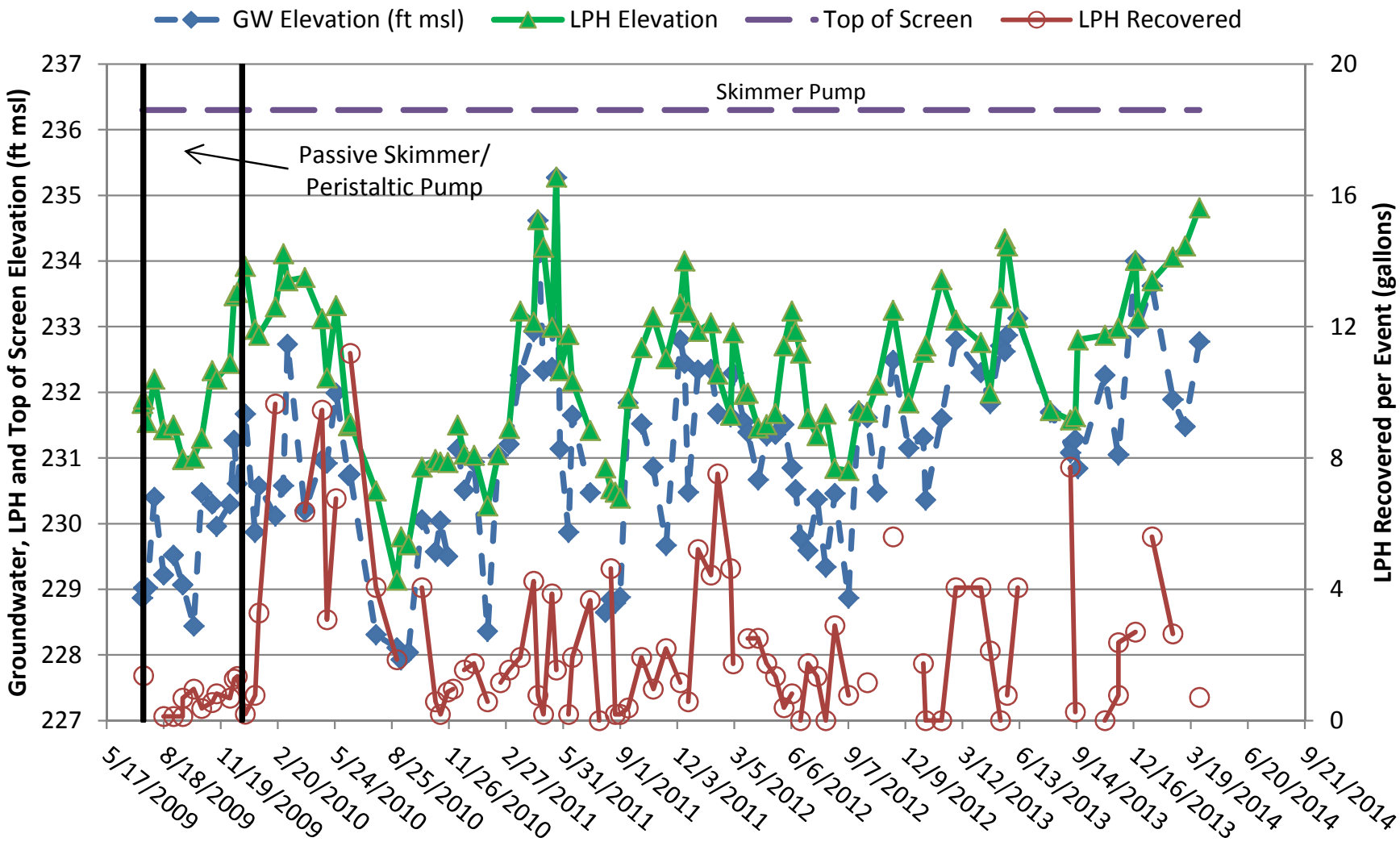
LPH and Groundwater Elevations and LPH Recovery: MW-53
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



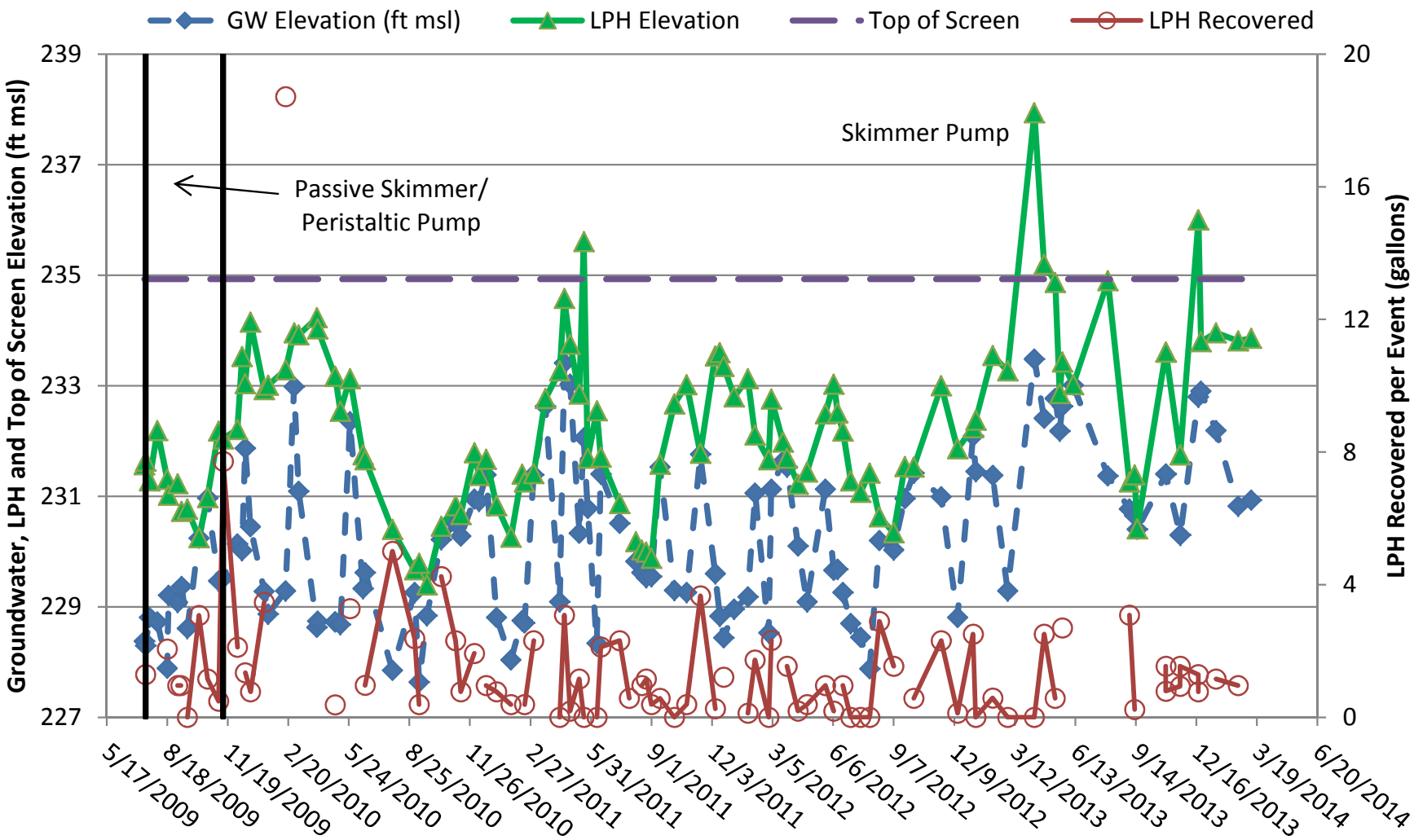
LPH and Groundwater Elevations and LPH Recovery: MW-54
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



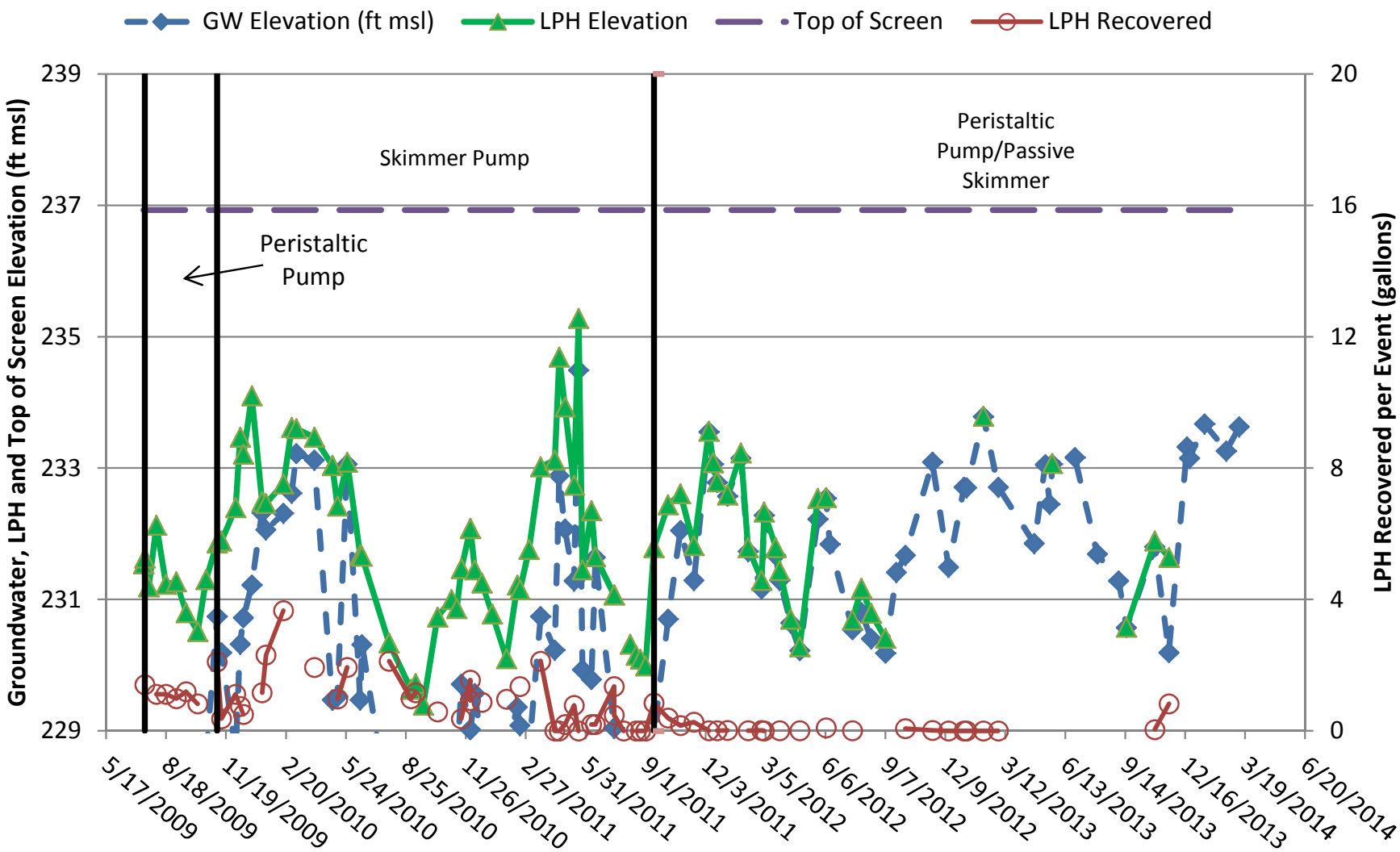
LPH and Groundwater Elevations and LPH Recovery: MW-55
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



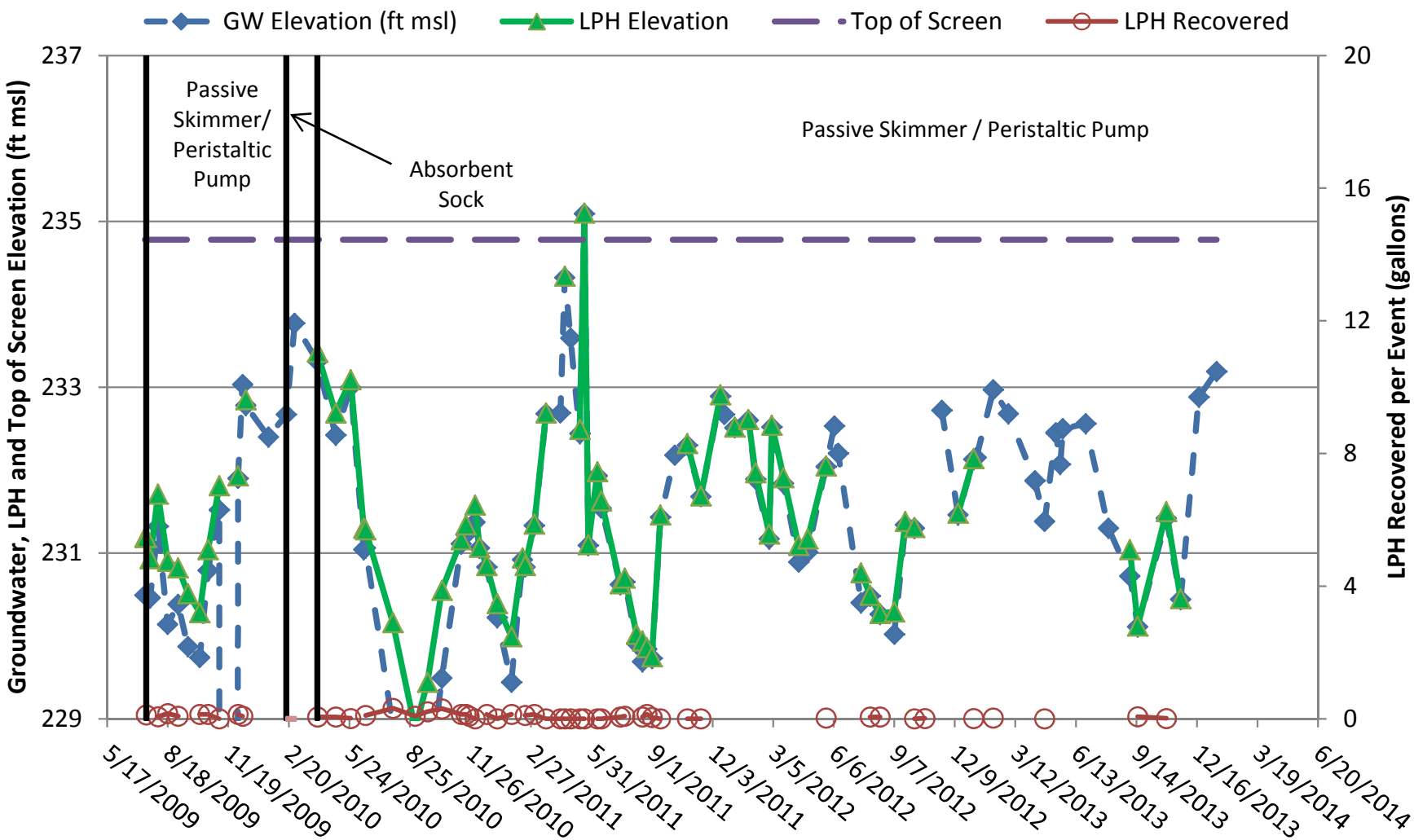
LPH and Groundwater Elevations and LPH Recovery: MW-56
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



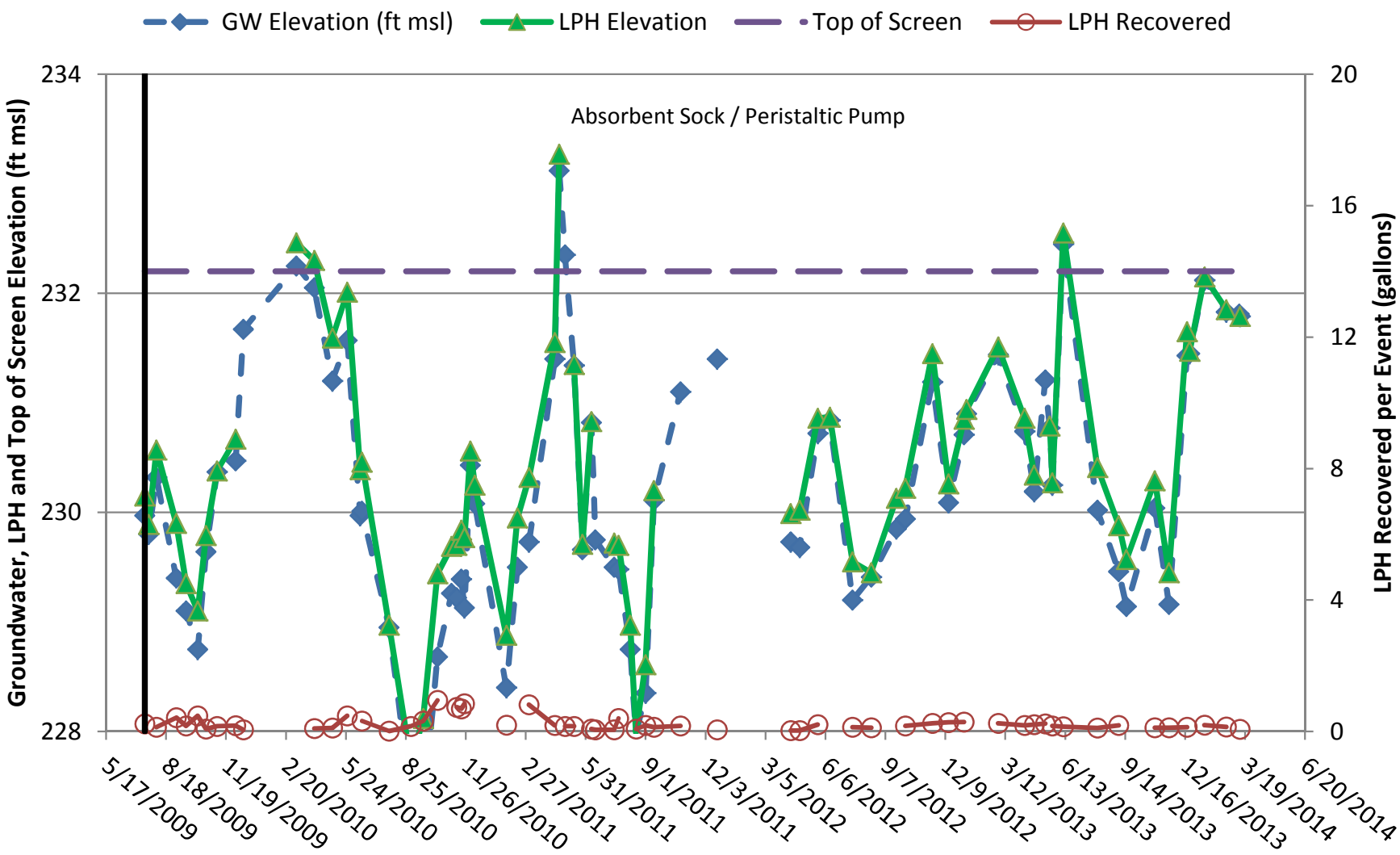
LPH and Groundwater Elevations and LPH Recovery: MW-57
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



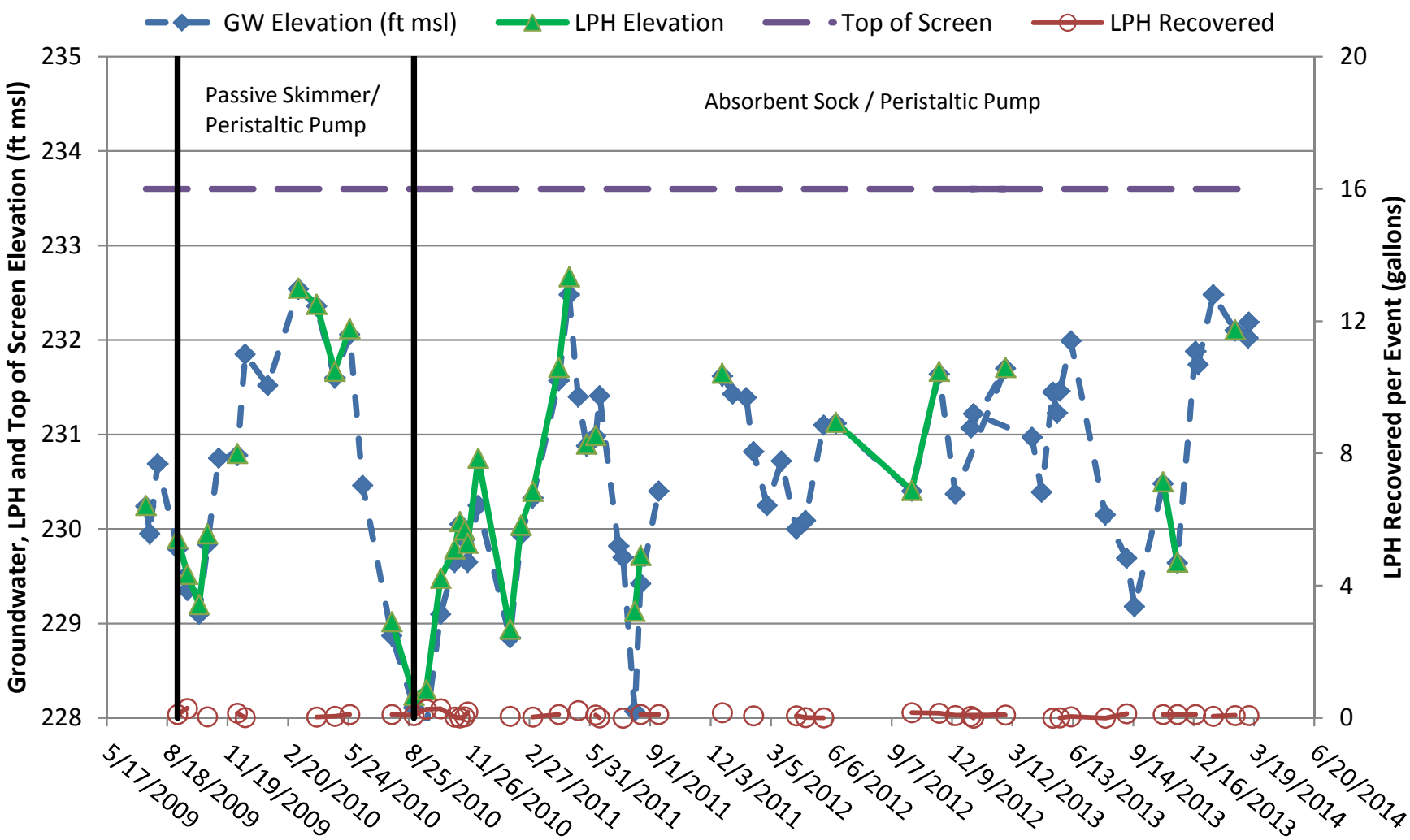
LPH and Groundwater Elevations and LPH Recovery: MW-58
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



LPH and Groundwater Elevations and LPH Recovery: EW-3
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



LPH and Groundwater Elevations and LPH Recovery: EW-5
July 12, 2009 through April 2, 2014
CSXT Brunswick Yard, Brunswick, Maryland



Attachment 2

Groundwater Sampling Logs

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No.: MD000843.0010.00004
Site Location: Brunswick, MD
Date: 3.13.14
CSXT Well No.: MW-3
Replicate No.: ---
Weather: WINDY / SUNNY 32F
Sampling Personnel: LL/PS
Sampling Time: Begin 1550 End 1553

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	26.20
Depth to Water (ft bmp)	15.62
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	10.58
Casing Diameter	4
Gallons in Well	6.877
Gallons Purged Prior to Sampling	~21
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1532 End 1553

Field Parameters

Color: Orange
Odor: None
Appearance: turbid

	I	1V	2V	3V
pH (s.u.)	6.53	6.50	6.57	6.72
Conductivity (mS/cm) or (µmhos/cm) 1)	0.428	0.408	0.421	0.423
Temperature (°C)	12.18	13.49	13.87	12.85
DO (mg/L)	4.78	3.93	4.43	6.23
ORP (mV)	11.3	43.6	52.6	47.8
Turbidity (NTU)	—	—	—	—
Time	1534	1539	1544	1551
DTW (ft bmp)	15.62	16.74	17.24	16.82

Remarks: Sample ID = MW-3 (031314)
Sample time = 1550

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

PID Reading: N/A

Well Casing Volumes

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

1) Circle one unit type

(10)

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No. MD000843.0010.00004
Site Location: Brunswick, MD
Date: 3.13.14
CSXT Well No.: MW-6R
Replicate No.: ---
Weather: SUNNY | WINDY 32F
Sampling Personnel: PS/LL
Sampling Time: Begin 1450 End 1453

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	14.52
Depth to Water (ft bmp)	4.49
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	10.03
Casing Diameter	4
Gallons in Well	6.52
Gallons Purged Prior to Sampling	~20
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1436 End 1449

Field Parameters

Color	BROWN
Odor	SLIGHT
Appearance	V. TURBID

	I	1V	2V	3V
pH (s.u.)	6.45	6.39	6.47	6.68
Conductivity (mS/cm) or	0.399	0.462	0.496	0.524
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	5.99	7.04	7.87	7.45
DO (mg/L)	9.72	4.54	3.96	3.63
ORP (mV)	-30.0	-53.2	-71.9	-95.6
Turbidity (NTU)	—	—	—	—
Time	1436 ~~4.49~~	1440	1444	1448
DTW (ft bmp)	~~1436~~ 4.49	6.08	6.69	6.22

Remarks: SAMPLE ID: MW-6R (03/13/14)

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

PID Reading: N/A

Well Casing Volumes

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

1) Circle one unit type

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Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0011.00003

Site Location: Brunswick, MD — Date: 3/13/14

CSXT Well No.: MW-22 — Replicate No.: --- — Weather: 20°F, Sunny / Windy

Sampling Personnel: ~~PS/LL~~ LL/PS JJ — Sampling Time: Begin 1630 End 1637

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	18.46
Depth to Water (ft bmp)	12.34
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	6.12
Casing Diameter	4"
Gallons in Well	4
Gallons Purged Prior to Sampling	~8
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1602 End 1629

Field Parameters

Color: CLOUDY

Odor: SLIGHT

Appearance: V. LITTLE TURBIDITY

	I	1V	2V	3V
pH (s.u.)	6.54	6.60	6.64	
Conductivity (mS/cm) or	0.643	0.637	0.627	
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	8.76	8.62	8.79	
DO (mg/L)	3.67	2.69	4.31	
ORP (mV)	-78.8	-89.2	-80.5	
Turbidity (NTU)	—	—	—	—
Time	1602	1610	1623	
DTW (ft bmp)	12.34	14.22	15.92	

Remarks: SAMPLE ID: MW-22(031314) @ 1630
WELL DRAW DOWN TO 17.23 AFTER 2V. ALLOWED TO RECHARGE & THEN SAMPLED

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0010.00004

Site Location: Brunswick, MD — Date: 3.14.14

Well No.: MW-24 — Replicate No.: --- — Weather: CLOUDY / 36F

Sampling Personnel: LL / PS — Sampling Time: Begin 1015 — End 1021

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	14.00
Depth to Water (ft bmp)	9.31
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	4.69
Casing Diameter	4
Gallons in Well	3.04
Gallons Purged	
Prior to Sampling	~5
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1000 End 1014

Field Parameters

Color: BLACK

Odor: NONE

Appearance: TURBID

	I	1V	1.5V ~~2V~~	~~3V~~
pH (s.u.)	7.09	7.10	7.11	
Conductivity (mS/cm) or	0.217	0.249	0.261	
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	8.82	8.40	9.62	
DO (mg/L)	7.36	6.21	5.78	
ORP (mV)	-32.4	-10.9	-0.1	
Turbidity (NTU)	—	—	—	—
Time	1000	1008	1012	
DTW (ft bmp)	9.31	11.20	13.80	

Remarks: SAMPLE ID: MW-24(031414)
TIME: 1015
WELL DRY @ 1V. RECHARGE + SAMPLE

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) **Circle one unit type**

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Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0010.00004

Site Location: Brunswick, MD — Date: 3.12.14

Well No.: MW-25 — Replicate No.: --- — Weather: CLOUDY / WINDY / 60F

Sampling Personnel: LL / PS — Sampling Time: Begin 1705 — End 1707

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	19.00
Depth to Water (ft bmp)	12.67
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	6.33
Casing Diameter	4
Gallons in Well	4.11
Gallons Purged	
Prior to Sampling	~9
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1654 End 1702

Field Parameters

Color	ORANGE			
Odor	NONE			
Appearance	CLEAR			

	I	1V	2V	3V
pH (s.u.)	6.70	6.57	6.56	
Conductivity (mS/cm) or	0.551	0.547	0.616	
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	16.04	15.61	16.02	
DO (mg/L)	7.24	5.52	5.18	
ORP (mV)	132.5	125.6	91.9	
Turbidity (NTU)	—	—	—	—
Time	1654	1658	1702	
DTW (ft bmp)	12.67	15.02	16.43	

Remarks: SAMPLE ID: MW-25(031214) ↗(DTW @ 18.02)
WELL DREW DOWN DRY AFTER 2V. ALLOWED TO RECHARGE + THEN SAMPLED

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

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Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0010.00004

Site Location: Brunswick, MD — Date: 3.14.14

Well No.: MW-29 — Replicate No.: --- — Weather: cloudy / 32F

Sampling Personnel: LL / PS — Sampling Time: Begin 1000 — End 1001

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	23.00
Depth to Water (ft bmp)	13.10
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	9.90
Casing Diameter	4"
Gallons in Well	6.5
Gallons Purged Prior to Sampling	~15
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 0943 End 1000

Field Parameters

Color	Grey			
Odor	moderate			
Appearance	turbid, trace sediment			
	1	1V	2V	~~3V~~ 2.5V
pH (s.u.)	6.50	6.60	6.70	6.85
Conductivity (mS/cm) or (µmhos/cm) 1)	0.760	0.743	0.789	0.734
Temperature (°C)	10.98	12.58	13.16	12.21
DO (mg/L)	8.84	12.36	6.76	5.41
ORP (mV)	-15.3	-46.2	-59.8	-94.8
Turbidity (NTU)	--	--	--	--
Time	0945	0948	0952	1000
DTW (ft bmp)	9.90	16.63	19.57	11.61

Remarks: SAMPLE ID: MW-29 (031414)
TIME: 1000
Sampled after 2.5 Vol due to slow recovery AFTER WELL BREW DOWN QUICKLY

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

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Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0010.00004

Site Location: Brunswick, MD — Date: 3/13/14

CSXT Well No.: MW-43 — Replicate No.: --- — Weather: 70°F, Sunny / Windy

Sampling Personnel: LL / PS — Sampling Time: Begin 1400 — End 1403

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	15.71
Depth to Water (ft bmp)	6.51
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	9.2
Casing Diameter	4"
Gallons in Well	~6
Gallons Purged Prior to Sampling	18
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1340 End 1403

Field Parameters

Color	Brownish orange
Odor	none
Appearance	turbid

	I	1V	2V	3V
pH (s.u.)	6.77	6.52	6.50	6.53
Conductivity (mS/cm) or (µmhos/cm) 1)	0.451	0.464	0.468	0.457
Temperature (°C)	10.28	11.03	11.32	11.03
DO (mg/L)	13.36	8.78	9.82	10.07
ORP (mV)	111.8	102.5	105.4	110.9
Turbidity (NTU)	--	--	--	--
Time	1340	1344	1347	1353
DTW (ft bmp)	6.51	8.87	10.10	11.98

Remarks: Sample ID: MW-43(031314)
Sample time 1400

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No.: MD000843.0011.00003
Site Location: Brunswick, MD
Date: 3.14.14
Well No.: MW-51
Replicate No.: ---
Weather: CLOUDY / 30F
Sampling Personnel: JR / LL
Sampling Time: Begin 0925 End 0932

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.63
Depth to Water (ft bmp)	12.36
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	12.27
Casing Diameter	4
Gallons in Well	7.9 → 8
Gallons Purged Prior to Sampling	25
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 0911 End

Field Parameters

Color: BURNT ORANGE
Odor: NONE
Appearance: V. TURBID / SILTY

	I	1V	2V	3V
pH (s.u.)	6.30	6.32	6.38	6.46
Conductivity (mS/cm) or	0.499	0.485	0.497	0.512
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	8.43	10.92	10.87	10.95
DO (mg/L)	13.77	11.65	10.67	8.55
ORP (mV)	221.5	211.9	208.7	204.5
Turbidity (NTU)	—	—	—	—
Time	0912	0916	0920	0924
DTW (ft bmp)	12.36	15.75	17.98	19.20

Remarks: SAMPLE ID: MW-51 (031414)
TIME: 0925

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0010.00004

Site Location: Brunswick, MD — Date: 3/12/14

Well No.: MW-59 — Replicate No.: --- — Weather: 60°F, Partly Cloudy

Sampling Personnel: LL / PS — Sampling Time: Begin 1630 — End 1632

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.09
Depth to Water (ft bmp)	10.67
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	13.42
Casing Diameter	4"
Gallons in Well	8.7
Gallons Purged	
Prior to Sampling	27
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1606 End 1627

Field Parameters

Color: PALE ORANGE

Odor: ~~SLIGHT~~ MODERATE

Appearance: FILM ON TOP OF SAMPLE, MILD TURBIDITY

	I	1V	2V	3V
pH (s.u.)	6.47	6.47	6.47	6.51
Conductivity (mS/cm) or	0.688	0.707	0.696	0.699
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	14.57	14.23	13.24	13.73
DO (mg/L)	4.12	2.72	6.35	5.82
ORP (mV)	-50.4	0.8	-16.1	4.4
Turbidity (NTU)	--	--	--	--
Time	1606	1611	1619	1628
DTW (ft bmp)	10.67	13.26	14.52	14.93

Remarks: SAMPLE ID: MW-59 (03.12.14)

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No.: MD000843.0010.00004
Site Location: Brunswick, MD
Date: 3/12/14
Well No.: MW-61
Replicate No.: ---
Weather: 60°F, Partly Cloudy
Sampling Personnel: LL / PS
Sampling Time: Begin 1535 End 1541

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.66
Depth to Water (ft bmp)	12.09
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	12.57
Casing Diameter	4"
Gallons in Well	8.1
Gallons Purged	
Prior to Sampling	~16
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1529 End 1541

Field Parameters

Color: Brown
Odor: Slight odor
Appearance: turbid, some sediment, slight sheen

	I	1V	2V	3V
pH (s.u.)	6.61	6.64	6.68	
Conductivity (mS/cm) or	0.583	0.587	0.583	
(µmhos/cm) 1)				
Temperature (°C)	17.71	16.99	17.34	
DO (mg/L)	2.63	1.22	1.07	
ORP (mV)	-107.8	-92.4	-83.4	
Turbidity (NTU)	--	--	--	--
Time	1530	1534	1541	
DTW (ft bmp)	12.09	19.41	22.52	

Remarks: Sample ID: MW-61 (031214)
Sampled after 2 volumes ~~early~~ due to slow recovery
Sample time: 1535

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0010.00004

Site Location: Brunswick, MD | Date: 3/12/14

Well No.: MW-62 | Replicate No.: --- | Weather: 60°F, P. Cloudy

Sampling Personnel: LL / PS | Sampling Time: Begin 1330 End 1332

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.19
Depth to Water (ft bmp)	12.51
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	11.68
Casing Diameter	4"
Gallons in Well	7.5
Gallons Purged Prior to Sampling	~24
Pump Intake Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1309 End 1326

Field Parameters

Color	PALE BROWN			
Odor	SLIGHT			
Appearance	MEDIUM TURBIDITY			
	I	1V	2V	3V
pH (s.u.)	6.59	6.62	6.63	6.67
Conductivity (mS/cm) or	0.558	0.565	0.565	0.567
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	15.47	15.83	16.12	16.27
DO (mg/L)	3.55	2.16	1.83	2.04
ORP (mV)	-106.5	-107.6	-109.1	-111.1
Turbidity (NTU)	—	—	—	—
Time	1309	1314	1319	1325
DTW (ft bmp)	12.51	13.09	13.43	13.24

Remarks: Sample ID: MW-62 (031214)

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0010.00004

Site Location: Brunswick, MD — Date: 3/12/14

Well No.: MW-64 — Replicate No.: --- — Weather: 60°F, Partly Cloudy

Sampling Personnel: LL / PS — Sampling Time: Begin 1050 — End 1055

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	23.25
Depth to Water (ft bmp)	4.28
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	18.97
Casing Diameter	4"
Gallons in Well	12.3
Gallons Purged Prior to Sampling	~37
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1022 End 1047

Field Parameters

Color: Clear

Odor: None

Appearance: Slight turbidity,

	I	1V	2V	3V
pH (s.u.)	6.65	6.57	6.60	6.64
Conductivity (mS/cm) or	0.665	0.693	0.698	0.692
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	13.89	12.18	12.01	13.12
DO (mg/L)	2.68	4.14	5.60	9.52
ORP (mV)	67.5	79.1	80.1	83.0
Turbidity (NTU)	—	—	—	—
Time	1022	1029	1036	1055
DTW (ft bmp)	4.28	5.37	5.72	12.58

Remarks: SAMPLE ID: MW-64 (031214)

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0010.00004

Site Location: Brunswick, MD | Date: 3.12.14

Well No.: MW-65 | Replicate No.: --- | Weather: 77

Sampling Personnel: LL / PS | Sampling Time: Begin ~~1040~~ 1055 | End 1103

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	23.00
Depth to Water (ft bmp)	6.29
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	16.71
Casing Diameter	4
Gallons in Well	10.86
Gallons Purged Prior to Sampling	27 ~~~33~~ ~~28~~ *
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1040 End 1100

Field Parameters

Color: Brown / orange

Odor: None

Appearance: turbid / some sediment

	I	1V	2V	3V
pH (s.u.)	6.65	6.64	6.68	
Conductivity (mS/cm) or (µmhos/cm) 1)	0.603	0.606	0.505	
Temperature (°C)	11.25	10.75	13.06	
DO (mg/L)	3.15	4.07	3.17	
ORP (mV)	-56.1	-41.3	-33.5	
Turbidity (NTU)	--	--	--	--
Time	1040	1050	1055	
DTW (ft bmp)	6.29	16.43	16.06	

Remarks: SAMPLE ID: MW-65(031214)
*Well went dry after 1.5V purged. Allowed to recharge, purge total of 2V then sample

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0010.00004

Site Location: Brunswick, MD | Date: 3/12/14

Well No.: MW-67 | Replicate No.: --- | Weather: 60°F, P. Cloudy

Sampling Personnel: LL / PS | Sampling Time: Begin 1245 | End 1250

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	19.26
Depth to Water (ft bmp)	11.99
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	7.27
Casing Diameter	4"
Gallons in Well	4.7
Gallons Purged	
Prior to Sampling	~6
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1240 End 1250

Field Parameters

Color	MUDDY BROWN			
Odor	SLIGHT			
Appearance	V. TURBID + LOTS of SEDIMENT			
	I	1V	2V	3V
pH (s.u.)	6.75	6.77		
Conductivity (mS/cm) or	0.678	0.674		
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	15.49	15.14		
DO (mg/L)	6.80	2.52		
ORP (mV)	-85.7	-103.1		
Turbidity (NTU)	—	—	—	—
Time	1241	1244		
DTW (ft bmp)	11.99	17.77		

Remarks: Sample ID: ~~MW-67~~ MW-67 (031214)
1245 sample time
WELL PURGED DRY AFTER 1V. RECHARGE SLOWLY & SAMPLED
DTW @ 19.01

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0010.00004

Site Location: Brunswick, MD | Date: 3.12.14

Well No.: MW-68 | Replicate No.: DUP01(031214) @1200 | Weather: CLOUDY / 47F

Sampling Personnel: LL / PS | Sampling Time: Begin 1005 | End 1011

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	21.04
Depth to Water (ft bmp)	4.35
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	16.69
Casing Diameter	4"
Gallons in Well	10.85
Gallons Purged Prior to Sampling	~33
Pump Intake Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 0938 End 1004

Field Parameters

Color	PALE ORANGE
Odor	NONE
Appearance	MILD TURBIDITY

	I	1V	2V	3V
pH (s.u.)	7.07	6.93	6.96	6.89
Conductivity (mS/cm) or	0.528	0.532	0.562	0.523
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	10.13	10.02	9.84	10.29
DO (mg/L)	5.22	3.21	3.24	3.96
ORP (mV)	95.3	43.0	21.4	27.8
Turbidity (NTU)	—	—	—	—
Time	0942	0947	0956	1004
DTW (ft bmp)	4.35	4.37	4.36	4.37

Remarks: SAMPLE ID: MW-68(031214)
DUP01(031214) @ 1200

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No.: MD000843.0010.00004
Site Location: Brunswick, MD
Date: 3.12.14
Well No.: MW-69
Replicate No.: ---
Weather: CLOUDY / 60F
Sampling Personnel: LL / PS
Sampling Time: Begin 1420 End 1423

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	23.20
Depth to Water (ft bmp)	11.97
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	11.33
Casing Diameter	4
Gallons in Well	7.34
Gallons Purged Prior to Sampling	~22
Pump Intake Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1400 End 1419

Field Parameters

Color: BROWN
Odor: SLIGHT
Appearance: V. TURBID, LOTS OF SEDIMENT

	I	1V	2V	3V
pH (s.u.)	6.79	6.92	6.92	6.93
Conductivity (mS/cm) or	0.461	0.456	0.470	0.460
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	15.38	15.28	15.32	16.11
DO (mg/L)	5.07	2.73	3.12	0.34
ORP (mV)	-105.5	-118.3	-121.6	-127.8
Turbidity (NTU)	—	—	—	—
Time	1401	1406	1413	1419
DTW (ft bmp)	11.97	14.00	17.30	20.99

Remarks: SAMPLE ID: MW-67 (031214)

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick — Project No. MD000843.0010.00004

Site Location: Brunswick, MD — Date: 3/12/14

Well No.: MW-70 — Replicate No.: --- — Weather: 60°F, Partly Cloudy

Sampling Personnel: LL / PS — Sampling Time: Begin 1450 — End 1452

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.29
Depth to Water (ft bmp)	12.43
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	11.86
Casing Diameter	4"
Gallons in Well	7.7
Gallons Purged Prior to Sampling	~23
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1433 End 1452

Field Parameters

Color	Brown
Odor	Slight
Appearance	turbid, Sediment, Slight Sheen

	I	1V	2V	3V
pH (s.u.)	6.57	6.60	6.59	6.58
Conductivity (mS/cm) or (µmhos/cm) 1)	0.743	0.758	0.726	0.675
Temperature (°C)	15.61	15.62	15.94	16.77
DO (mg/L)	4.22	4.92	4.61	6.93
ORP (mV)	-80.6	-86.0	-70.5	-37.2
Turbidity (NTU)	--	--	--	--
Time	1434	1441 ~~15.25~~ P.S.	1446	1452
DTW (ft bmp)	12.43	15.25	17.03	20.85

Remarks: Sample ID: MW-70 (031214)
Sample time 1450

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No. MD000843.0010.00004
Site Location: Brunswick, MD
Date: 3/13/14
Weather: 18°F, Sunny / Windy
Well No.: NPS MW-1
Replicate No.: ---
Sampling Personnel: LL / PS
Sampling Time: Begin 1115 End 1120

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	19.15
Depth to Water (ft bmp)	5.24
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	13.91
Casing Diameter	4"
Gallons in Well	9
Gallons Purged Prior to Sampling	~19
Pump Intake Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1105 End 1120

Field Parameters

Color: BROWN
Odor: NONE
Appearance: TURBID

	I	1V	2V	3V
pH (s.u.)	6.54	6.47	6.46	
Conductivity (mS/cm) or (µmhos/cm) 1)	0.548	0.559	0.556	
Temperature (°C)	6.17	7.85	8.29	
DO (mg/L)	12.60	9.71	6.85	
ORP (mV)	40.9	65.7	88.9	
Turbidity (NTU)	--	--	--	--
Time	1105	1110	1115	
DTW (ft bmp)	5.24	11.64	17.63	

Remarks: Sample ID: NPS MW-1(03/13/14)
Sample time: 1115
Sampled after 2 Vol. due to slow recovery

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0010.00004

Site Location: Brunswick, MD | Date: 3/13/14

Well No.: NPS MW-2 | Replicate No.: --- | Weather: 20°F, Sunny / Windy

Sampling Personnel: LL / PS | Sampling Time: Begin 1125 | End 1126

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	21.21
Depth to Water (ft bmp)	5.13
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	16.08
Casing Diameter	4"
Gallons in Well	10.5
Gallons Purged	
Prior to Sampling	32
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1103 End 1124

Field Parameters

Color	ORANGE
Odor	NONE
Appearance	~~TAN~~ CLEAR

	I	1V	2V	3V
pH (s.u.)	6.47	6.54	6.57	6.58
Conductivity (mS/cm) or	0.654	0.671	0.671	0.678
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	8.75	10.71	11.17	12.19
DO (mg/L)	9.47	8.84	8.69	8.61
ORP (mV)	1.0	-27.2	-38.1	-42.6
Turbidity (NTU)	—	—	—	—
Time	1104	1111	1116	1124
DTW (ft bmp)	5.13	8.02	8.49	8.12

Remarks: SAMPLE ID: NPS MW-2 (031314)
TIME: 1125

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0011.00003

Site Location: Brunswick, MD | Date: 3.13.14

Well No.: NPS MW-4 | Replicate No.: --- | Weather: SUNNY / V. WINDY / 30F

Sampling Personnel: JR / LL | Sampling Time: Begin 1445 | End 1448

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	13.45
Depth to Water (ft bmp)	6.39
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	7.06
Casing Diameter	4
Gallons in Well	4.59
Gallons Purged Prior to Sampling	~~~9~~ ~10
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1430 End 1441

Field Parameters

Color: ORANGE

Odor: NONE

Appearance: MILD TURBIDITY

	I	1V	2V	3V
pH (s.u.)	6.79	6.83	7.06	
Conductivity (mS/cm) or	0.430	0.467	0.450	
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	7.56	9.74	8.18	
DO (mg/L)	9.42	5.86	3.59	
ORP (mV)	-62.2	-96.1	-105.2	
Turbidity (NTU)	--	--	--	--
Time	1431	1435	1439	
DTW (ft bmp)	6.39	7.09	10.31	

Remarks: SAMPLE ID: NPS MW-4 (03.13.14)
WELL DREW DOWN TO 12.98. ALLOWED TO RECHARGE
+ SAMPLED AFTER ~~1~~ 2V

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

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

Site Location: Brunswick, MD — Date: 3/13/14

Well No.: NPS MW-5 — Replicate No.: --- — Weather: 180F, Sunny/Windy

Sampling Personnel: LL / PS — Sampling Time: Begin 1050 — End 1057

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	23.97
Depth to Water (ft bmp)	7.80
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	16.17
Casing Diameter	4"
Gallons in Well	10.5
Gallons Purged	
Prior to Sampling	~33
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1031 End 1047

Field Parameters

Color: BROWN

Odor: NONE

Appearance: V. TURBID, LOTS OF SEDIMENT

	I	1V	2V	~~3V~~ 2.5V
pH (s.u.)	6.78	6.89	6.90	6.94
Conductivity (mS/cm) or	0.456	0.477	0.484	0.479
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	7.13 ~~9.10~~	7.61	10.11	10.76
DO (mg/L)	9.40	6.23	6.61	8.82
ORP (mV)	78.7	10.3	-16.2	-23.5
Turbidity (NTU)	--	--	--	--
Time	1031	1037	1044	1049
DTW (ft bmp)	7.80	15.74	28.48	

Remarks: SAMPLE ID: NPS MW-5 (031314)
TIME: 1050

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0010.00004

Site Location: Brunswick, MD | Date: 3/13/14

Well No.: NPS MW-13 | Replicate No.: --- | Weather: 18°F, Sunny

Sampling Personnel: LL / PS | Sampling Time: Begin 1010 End 1018

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.14
Depth to Water (ft bmp)	10.08
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	14.06
Casing Diameter	2"
Gallons in Well	2.2
Gallons Purged	
Prior to Sampling	~6.5
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 0954 End 1018

Field Parameters

Color	Brown
Odor	None
Appearance	turbid

	I	1V	2V	3V
pH (s.u.)	6.32	6.47	6.46	6.51
Conductivity (mS/cm) or	0.746	0.707	0.698	0.656
(µmhos/cm) 1)				
Temperature (°C)	9.56	10.10	10.83	9.65
DO (mg/L)	8.31	7.00	6.64	8.03
ORP (mV)	28.1	54.9	68.0	85.9
Turbidity (NTU)	--	--	--	--
Time	0957	1001	1004	1009
DTW (ft bmp)	10.08	11.57	11.20	11.38

Remarks: Sample ID: NPS MW-13 (031314)
Dup-02 (031314) taken @ 1200
Sampled @ 1010

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~None~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~None~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) **Circle one unit type**

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0011.00003

Site Location: Brunswick, MD | Date: 3. 24. 2014

Well No.: NPS MW-13 | Replicate No.: --- | Weather: SUNNY

Sampling Personnel: ~~JR/LL~~ L. LAMP | Sampling Time: Begin 1035 End 1037

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.14
Depth to Water (ft bmp)	10.42
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	13.72
Casing Diameter	2"
Gallons in Well	2.19
Gallons Purged Prior to Sampling	~6.6
Pump Intake Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1017 End 1030

Field Parameters

Color: BROWN

Odor: NONE

Appearance: TURBID / SILTY

	I	1V	2V	3V
pH (s.u.)	6.42	6.51	6.66	6.67
Conductivity (mS/cm) or	0.777	0.719	0.707	0.699
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	11.12	10.98	11.44	11.83
DO (mg/L)	7.99	6.69	6.04	6.27
ORP (mV)	35.7	59.2	76.8	98.2
Turbidity (NTU)	--	--	--	--
Time	1018	1022	1027	1031
DTW (ft bmp)	10.42	11.48	11.63	10.52

Remarks: SAMPLE ID: NPS MW-13 (032414)
SAMPLE COLLECTED B/C DRO AMBERS BROKE DURING TRANSPORT TO THE LAB.

Parameter	Container	No.	Preservative
~~VOCs + fuel oxygenates~~	~~40 mL VOA~~	~~3~~	~~HCl~~
~~TPH - GRO~~	~~40 mL VOA~~	~~2~~	~~HCl~~
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) **Circle one unit type**

FLASHPT
TCLP, METALS
PH
TCLP, VOCS

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No.: MD000843.0010.00004
Site Location: Brunswick, MD
Date: 3.13.14
Well No.: NPS MW-14
Replicate No.: ---
Weather: SUNNY, COLD (21F) V. WINDY
Sampling Personnel: LL / PS
Sampling Time: Begin 0940 End 0942

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	27.32
Depth to Water (ft bmp)	7.28
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	20.02
Casing Diameter	2
Gallons in Well	3.2
Gallons Purged	
Prior to Sampling	~10
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 0918 End 0939

Field Parameters

Color: BROWN
Odor: NONE
Appearance: V. TURBID, LOTS OF SILT/SEDIMENT

	I	1V	2V	3V
pH (s.u.)	6.45	6.38	6.41	6.48
Conductivity (mS/cm) or	0.551	0.599	0.620	0.618
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	8.41	10.53	9.71	10.08
DO (mg/L)	4.41	3.71	4.02	4.08
ORP (mV)	-46.4	-49.7	-44.3	-46.6
Turbidity (NTU)	—	—	—	—
Time	0918	0925	0932	0938
DTW (ft bmp)	7.28	10.72	12.17	13.80

Remarks: SAMPLE ID: NPS MW-14 (031314)
TIME: 0940

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick
Project No.: MD000843.0010.00004
Site Location: Brunswick, MD
Date: 3.13.14
Well No.: NPS MW-16
Replicate No.: ---
Weather: SUNNY / 25F / V. WINDY
Sampling Personnel: LL / PS
Sampling Time: Begin 1315 End 1319

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	24.70
Depth to Water (ft bmp)	9.08
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	15.62
Casing Diameter	~~2.5~~ 2"
Gallons in Well	2.5
Gallons Purged Prior to Sampling	~8
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1300 End 1314

Field Parameters

Color	PALE ORANGE
Odor	NONE
Appearance	CLEAR . SM SEDIMENT

	I	1V	2V	3V
pH (s.u.)	6.69	6.82	6.89	6.89
Conductivity (mS/cm) or	0.472	0.489	0.497	0.497
(µmhos/cm) 1)	—	—	—	—
Temperature (°C)	10.04	10.75	10.59	9.76
DO (mg/L)	11.59	11.55	9.92	8.25
ORP (mV)	78.6	56.9	64.2	68.4
Turbidity (NTU)	—	—	—	—
Time	1300	1305	1309	1313
DTW (ft bmp)	~~9.08~~	9.64	9.77	9.74

Remarks: SAMPLE ID: NPS MW-16 (03.31.14)
TIME: 1315

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Water Sampling Log

Project: CSXT Brunswick | Project No. MD000843.0010.00004

Site Location: Brunswick, MD | Date: 3.13.14

Well No.: NPS MW-18 | Replicate No.: --- | Weather: SUNNY / 20F / WINDY

Sampling Personnel: LL / PS | Sampling Time: Begin 1245 | End 1248

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	14.59
Depth to Water (ft bmp)	1.80
Depth to Packer (ft bmp)	------
Water Column in Well (ft)	12.79
Casing Diameter	4"
Gallons in Well	8
Gallons Purged Prior to Sampling	~16
Pump Intake	------
Setting (ft bmp)	------
Packer Pressure (psi)	------
Pumping Rate (gpm)	------
Evacuation Method	bailer
Sampling Method	bailer
Purge Time	Begin 1240 End 1248

Field Parameters

Color: Brown

Odor: None

Appearance: turbid, v. slight sediment

	I	1V	2V	3V
pH (s.u.)	6.52	6.57	6.66	
Conductivity (mS/cm) or (µmhos/cm) 1)	0.670	0.700	0.703	
Temperature (°C)	9.09	10.15	9.63	
DO (mg/L)	10.49	7.36	12.73	
ORP (mV)	23.4	41.1	58.5	
Turbidity (NTU)	--	--	--	--
Time	1240	1244	1250	
DTW (ft bmp)	1.80	7.79	11.23	

Remarks: Sample ID: NPS MW-18(031314)
Sample time 1245
Sampled after 2 vol. due to slow recovery

Parameter	Container	No.	Preservative
VOCs + fuel oxygenates	40 mL VOA	3	HCl
TPH - GRO	40 mL VOA	2	HCl
TPH - DRO/ORO	1 L Amer	1	~~none~~ HCl
TPH - DRO w/SGT	1 L Amer	1	~~none~~ HCl

PID Reading N/A

Well Casing Volumes

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

1) Circle one unit type

Attachment 3

Laboratory Analytical Report

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: 680-99399-1
Client Project/Site: CSX Brunswick, MD Rail Yard

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

Attn: Ms. Megan Kellner

Authorized for release by:
3/28/2014 4:37:22 PM

Lisa Harvey, Project Manager II
(912)354-7858 e.3221
lisa.harvey@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Job ID: 680-99399-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX Brunswick, MD Rail Yard
Report Number: 680-99399-1

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 03/13/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.6º C, 2.6º C and 3.6º C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples DUP-01(031214) (680-99399-1), MW-68(031214) (680-99399-2), MW-64(031214) (680-99399-3), MW-65(031214) (680-99399-4), MW-67(031214) (680-99399-5), MW-62(031214) (680-99399-6), MW-69(031214) (680-99399-7), MW-70(031214) (680-99399-8), MW-61(031214) (680-99399-9), MW-59(031214) (680-99399-10), MW-25(031214) (680-99399-11) and TB-01(031214) (680-99399-12) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Bromoform exceeded the recovery criteria high for LCS 400-210762/1002. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported. Refer to the QC report for details.

GASOLINE RANGE ORGANICS (GRO)

Samples DUP-01(031214) (680-99399-1), MW-68(031214) (680-99399-2), MW-64(031214) (680-99399-3), MW-65(031214) (680-99399-4), MW-67(031214) (680-99399-5), MW-62(031214) (680-99399-6), MW-69(031214) (680-99399-7), MW-70(031214) (680-99399-8), MW-61(031214) (680-99399-9), MW-59(031214) (680-99399-10) and MW-25(031214) (680-99399-11) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015C.

Gasoline Range Organics (GRO)-C6-C10 was detected in method blank MB 680-319904/8 and MB 680-320336/7 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sample MW-59(031214) (680-99399-10)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

DIESEL RANGE ORGANICS (DRO)

Samples DUP-01(031214) (680-99399-1), MW-68(031214) (680-99399-2), MW-64(031214) (680-99399-3), MW-65(031214) (680-99399-4), MW-67(031214) (680-99399-5), MW-62(031214) (680-99399-6), MW-69(031214) (680-99399-7), MW-70(031214) (680-99399-8), MW-61(031214) (680-99399-9), MW-59(031214) (680-99399-10) and MW-25(031214) (680-99399-11) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Surrogate recovery for the following sample(s) was outside control limits: DUP-01(031214) (680-99399-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Samples MW-65(031214) (680-99399-4)[20X], MW-67(031214) (680-99399-5)[25X], MW-62(031214) (680-99399-6)[50X], MW-61(031214) (680-99399-9)[50X] and MW-59(031214) (680-99399-10)[50X] required dilution prior to analysis. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
The reporting limits have been adjusted accordingly.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-99399-1	DUP-01(031214)	Water	03/12/14 12:00	03/13/14 09:37
680-99399-2	MW-68(031214)	Water	03/12/14 10:05	03/13/14 09:37
680-99399-3	MW-64(031214)	Water	03/12/14 10:50	03/13/14 09:37
680-99399-4	MW-65(031214)	Water	03/12/14 10:55	03/13/14 09:37
680-99399-5	MW-67(031214)	Water	03/12/14 12:45	03/13/14 09:37
680-99399-6	MW-62(031214)	Water	03/12/14 13:30	03/13/14 09:37
680-99399-7	MW-69(031214)	Water	03/12/14 14:20	03/13/14 09:37
680-99399-8	MW-70(031214)	Water	03/12/14 14:50	03/13/14 09:37
680-99399-9	MW-61(031214)	Water	03/12/14 15:35	03/13/14 09:37
680-99399-10	MW-59(031214)	Water	03/12/14 16:30	03/13/14 09:37
680-99399-11	MW-25(031214)	Water	03/12/14 17:05	03/13/14 09:37
680-99399-12	TB-01(031214)	Water	03/12/14 00:00	03/13/14 09:37

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

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

Protocol References:

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

Laboratory References:

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

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

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

Qualifiers

GC/MS VOA

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

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: DUP-01(031214)

Lab Sample ID: 680-99399-1

Date Collected: 03/12/14 12:00

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 09:33	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 09:33	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 09:33	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 09:33	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 09:33	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 09:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 09:33	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 09:33	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 09:33	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 09:33	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 09:33	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 09:33	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 09:33	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 09:33	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/16/14 09:33	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 09:33	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 09:33	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 09:33	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 09:33	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 09:33	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 09:33	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 09:33	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 09:33	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 09:33	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 09:33	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 09:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 09:33	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 09:33	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 09:33	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 09:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: DUP-01(031214)

Lab Sample ID: 680-99399-1

Date Collected: 03/12/14 12:00

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 09:33	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 09:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/16/14 09:33*	*1*
Dibromofluoromethane	*105*		*81 - 121*		*03/16/14 09:33*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/16/14 09:33*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**59**	**B**	50	11	ug/L			03/17/14 21:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*95*		*70 - 130*		*03/17/14 21:44*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2900**		94	26	ug/L		03/19/14 15:17	03/20/14 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*48*	*X*	*50 - 150*	*03/19/14 15:17*	*03/20/14 19:33*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-68(031214)

Lab Sample ID: 680-99399-2

Date Collected: 03/12/14 10:05

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 12:00	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 12:00	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 12:00	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 12:00	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 12:00	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 12:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 12:00	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 12:00	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 12:00	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 12:00	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 12:00	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 12:00	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 12:00	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 12:00	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/16/14 12:00	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 12:00	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 12:00	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 12:00	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 12:00	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 12:00	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 12:00	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 12:00	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 12:00	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 12:00	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 12:00	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 12:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 12:00	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 12:00	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 12:00	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 12:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-68(031214)

Lab Sample ID: 680-99399-2

Date Collected: 03/12/14 10:05
Matrix: Water
Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 12:00	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 12:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/16/14 12:00*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/16/14 12:00*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/16/14 12:00*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**50**	**B**	50	11	ug/L			03/17/14 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*99*		*70 - 130*		*03/17/14 17:47*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**3500**		100	28	ug/L		03/19/14 15:17	03/20/14 19:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*50 - 150*	*03/19/14 15:17*	*03/20/14 19:49*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-64(031214)

Lab Sample ID: 680-99399-3

Date Collected: 03/12/14 10:50

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 12:24	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 12:24	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 12:24	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 12:24	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 12:24	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 12:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 12:24	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 12:24	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 12:24	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 12:24	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 12:24	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 12:24	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 12:24	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 12:24	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/16/14 12:24	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 12:24	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 12:24	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 12:24	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 12:24	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 12:24	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 12:24	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 12:24	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 12:24	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 12:24	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 12:24	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 12:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 12:24	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 12:24	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 12:24	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 12:24	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-64(031214)

Lab Sample ID: 680-99399-3

Date Collected: 03/12/14 10:50
Matrix: Water
Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 12:24	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 12:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/16/14 12:24*	*1*
Dibromofluoromethane	*99*		*81 - 121*		*03/16/14 12:24*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/16/14 12:24*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**28**	**J B**	50	11	ug/L			03/17/14 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*100*		*70 - 130*		*03/17/14 18:12*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1900**		100	28	ug/L		03/19/14 15:17	03/20/14 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*78*		*50 - 150*	*03/19/14 15:17*	*03/20/14 20:05*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-65(031214)

Lab Sample ID: 680-99399-4

Date Collected: 03/12/14 10:55

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 12:50	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 12:50	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 12:50	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 12:50	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 12:50	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 12:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 12:50	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 12:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 12:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 12:50	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 12:50	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 12:50	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 12:50	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 12:50	1
Isopropylbenzene	**7.5**		1.0	0.53	ug/L			03/16/14 12:50	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 12:50	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 12:50	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 12:50	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 12:50	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 12:50	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 12:50	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 12:50	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 12:50	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 12:50	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 12:50	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 12:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 12:50	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 12:50	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 12:50	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 12:50	1

Client Sample ID: MW-65(031214)

Lab Sample ID: 680-99399-4

Date Collected: 03/12/14 10:55

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 12:50	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/16/14 12:50*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*03/16/14 12:50*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/16/14 12:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**83**	**B**	50	11	ug/L			03/17/14 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*95*		*70 - 130*		*03/17/14 18:38*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**13000**		1900	530	ug/L		03/19/14 15:17	03/21/14 10:10	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*0*	*X*	*50 - 150*	*03/19/14 15:17*	*03/21/14 10:10*	*20*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-67(031214)

Lab Sample ID: 680-99399-5

Date Collected: 03/12/14 12:45

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 13:16	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 13:16	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 13:16	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 13:16	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 13:16	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 13:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 13:16	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 13:16	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 13:16	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 13:16	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 13:16	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 13:16	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 13:16	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 13:16	1
Isopropylbenzene	**4.1**		1.0	0.53	ug/L			03/16/14 13:16	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 13:16	1
Methylcyclohexane	**2.1**		1.0	0.50	ug/L			03/16/14 13:16	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 13:16	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 13:16	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 13:16	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 13:16	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 13:16	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 13:16	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 13:16	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 13:16	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 13:16	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 13:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 13:16	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 13:16	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 13:16	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 13:16	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-67(031214)

Lab Sample ID: 680-99399-5

Date Collected: 03/12/14 12:45

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 13:16	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/16/14 13:16*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/16/14 13:16*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/16/14 13:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**150**	**B**	50	11	ug/L			03/17/14 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*98*		*70 - 130*		*03/17/14 19:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**32000**		2400	660	ug/L		03/19/14 15:17	03/21/14 10:26	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*0*	*X*	*50 - 150*	*03/19/14 15:17*	*03/21/14 10:26*	*25*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-62(031214)

Lab Sample ID: 680-99399-6

Date Collected: 03/12/14 13:30

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 13:42	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 13:42	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 13:42	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 13:42	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 13:42	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 13:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 13:42	1
Cyclohexane	**2.5**		1.0	0.50	ug/L			03/16/14 13:42	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 13:42	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 13:42	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 13:42	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 13:42	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 13:42	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 13:42	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 13:42	1
Isopropylbenzene	**17**		1.0	0.53	ug/L			03/16/14 13:42	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 13:42	1
Methylcyclohexane	**11**		1.0	0.50	ug/L			03/16/14 13:42	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 13:42	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 13:42	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 13:42	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 13:42	1
Naphthalene	**21**		1.0	1.0	ug/L			03/16/14 13:42	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 13:42	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 13:42	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 13:42	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 13:42	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 13:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 13:42	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 13:42	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 13:42	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 13:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-62(031214)

Lab Sample ID: 680-99399-6

Date Collected: 03/12/14 13:30
Matrix: Water
Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 13:42	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*03/16/14 13:42*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*03/16/14 13:42*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*03/16/14 13:42*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**440**	**B**	50	11	ug/L			03/17/14 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*125*		*70 - 130*		*03/17/14 19:29*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**150000**		4700	1300	ug/L		03/19/14 15:17	03/21/14 10:41	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*0*	*X*	*50 - 150*	*03/19/14 15:17*	*03/21/14 10:41*	*50*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-69(031214)

Lab Sample ID: 680-99399-7

Date Collected: 03/12/14 14:20

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 14:08	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 14:08	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 14:08	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 14:08	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 14:08	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 14:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 14:08	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 14:08	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 14:08	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 14:08	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 14:08	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 14:08	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 14:08	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 14:08	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/16/14 14:08	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 14:08	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 14:08	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 14:08	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 14:08	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 14:08	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 14:08	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 14:08	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 14:08	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 14:08	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 14:08	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 14:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 14:08	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 14:08	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 14:08	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 14:08	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-69(031214)

Lab Sample ID: 680-99399-7

Date Collected: 03/12/14 14:20
Matrix: Water
Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 14:08	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 14:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/16/14 14:08*	*1*
Dibromofluoromethane	*99*		*81 - 121*		*03/16/14 14:08*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/16/14 14:08*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**210**	**B**	50	11	ug/L			03/17/14 19:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*77*		*70 - 130*		*03/17/14 19:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**5000**		120	33	ug/L		03/19/14 15:17	03/20/14 21:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*101*		*50 - 150*	*03/19/14 15:17*	*03/20/14 21:08*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-70(031214)

Lab Sample ID: 680-99399-8

Date Collected: 03/12/14 14:50

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 14:34	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 14:34	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 14:34	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 14:34	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 14:34	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 14:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 14:34	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 14:34	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 14:34	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 14:34	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 14:34	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 14:34	1
Ethylbenzene	**0.59**	**J**	1.0	0.50	ug/L			03/16/14 14:34	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 14:34	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 14:34	1
Isopropylbenzene	**0.54**	**J**	1.0	0.53	ug/L			03/16/14 14:34	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 14:34	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 14:34	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 14:34	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 14:34	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 14:34	1
Naphthalene	**1.1**		1.0	1.0	ug/L			03/16/14 14:34	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 14:34	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 14:34	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 14:34	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 14:34	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 14:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 14:34	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 14:34	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 14:34	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 14:34	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-70(031214)

Lab Sample ID: 680-99399-8

Date Collected: 03/12/14 14:50

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 14:34	1
Xylenes, Total	**2.9**	**J**	10	1.6	ug/L			03/16/14 14:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*78 - 118*		*03/16/14 14:34*	*1*
Dibromofluoromethane	*102*		*81 - 121*		*03/16/14 14:34*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/16/14 14:34*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**150**	**B**	50	11	ug/L			03/17/14 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*98*		*70 - 130*		*03/17/14 20:24*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4700**		94	26	ug/L		03/19/14 15:17	03/20/14 21:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*100*		*50 - 150*	*03/19/14 15:17*	*03/20/14 21:24*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-61(031214)

Lab Sample ID: 680-99399-9

Date Collected: 03/12/14 15:35

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 15:00	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 15:00	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 15:00	1
Carbon disulfide	**1.2**		1.0	0.50	ug/L			03/16/14 15:00	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 15:00	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 15:00	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 15:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 15:00	1
Cyclohexane	**2.8**		1.0	0.50	ug/L			03/16/14 15:00	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 15:00	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 15:00	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 15:00	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 15:00	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 15:00	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 15:00	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 15:00	1
Isopropylbenzene	**25**		1.0	0.53	ug/L			03/16/14 15:00	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 15:00	1
Methylcyclohexane	**17**		1.0	0.50	ug/L			03/16/14 15:00	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 15:00	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 15:00	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 15:00	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 15:00	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 15:00	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 15:00	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 15:00	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 15:00	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 15:00	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 15:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 15:00	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 15:00	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 15:00	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 15:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-61(031214)

Lab Sample ID: 680-99399-9

Date Collected: 03/12/14 15:35
Matrix: Water
Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 15:00	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 15:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*78 - 118*		*03/16/14 15:00*	*1*
Dibromofluoromethane	*108*		*81 - 121*		*03/16/14 15:00*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*03/16/14 15:00*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**310**	**B**	50	11	ug/L			03/17/14 20:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*125*		*70 - 130*		*03/17/14 20:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**160000**		4900	1400	ug/L		03/19/14 15:17	03/21/14 10:57	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*0*	*X*	*50 - 150*	*03/19/14 15:17*	*03/21/14 10:57*	*50*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-59(031214)

Lab Sample ID: 680-99399-10

Date Collected: 03/12/14 16:30

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 15:26	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 15:26	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 15:26	1
Carbon disulfide	**0.60**	**J**	1.0	0.50	ug/L			03/16/14 15:26	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 15:26	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 15:26	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 15:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 15:26	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 15:26	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 15:26	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 15:26	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 15:26	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 15:26	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 15:26	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 15:26	1
Isopropylbenzene	**10**		1.0	0.53	ug/L			03/16/14 15:26	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 15:26	1
Methylcyclohexane	**2.1**		1.0	0.50	ug/L			03/16/14 15:26	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 15:26	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 15:26	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 15:26	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 15:26	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 15:26	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 15:26	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 15:26	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 15:26	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 15:26	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 15:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 15:26	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 15:26	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 15:26	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 15:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-59(031214)

Lab Sample ID: 680-99399-10

Date Collected: 03/12/14 16:30
Matrix: Water
Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 15:26	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*78 - 118*		*03/16/14 15:26*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*03/16/14 15:26*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/16/14 15:26*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**160**	**B**	100	22	ug/L			03/19/14 14:50	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*97*		*70 - 130*		*03/19/14 14:50*	*2*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**110000**		4800	1300	ug/L		03/19/14 15:17	03/21/14 11:12	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*0*	*X*	*50 - 150*	*03/19/14 15:17*	*03/21/14 11:12*	*50*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-25(031214)

Lab Sample ID: 680-99399-11

Date Collected: 03/12/14 17:05

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 15:52	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 15:52	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 15:52	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 15:52	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 15:52	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 15:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 15:52	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 15:52	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 15:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 15:52	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 15:52	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 15:52	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 15:52	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 15:52	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/16/14 15:52	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 15:52	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 15:52	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 15:52	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 15:52	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 15:52	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 15:52	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 15:52	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 15:52	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 15:52	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 15:52	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 15:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 15:52	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 15:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 15:52	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 15:52	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-25(031214)

Lab Sample ID: 680-99399-11

Date Collected: 03/12/14 17:05
Matrix: Water
Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 15:52	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*78 - 118*		*03/16/14 15:52*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*03/16/14 15:52*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/16/14 15:52*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**180**	**B**	50	11	ug/L			03/17/14 21:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*85*		*70 - 130*		*03/17/14 21:18*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2600**		95	27	ug/L		03/19/14 15:17	03/20/14 22:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*70*		*50 - 150*	*03/19/14 15:17*	*03/20/14 22:11*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: TB-01(031214)

Lab Sample ID: 680-99399-12

Date Collected: 03/12/14 00:00

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/16/14 16:18	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 16:18	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/16/14 16:18	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 16:18	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 16:18	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 16:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 16:18	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 16:18	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 16:18	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 16:18	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 16:18	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 16:18	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 16:18	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 16:18	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/16/14 16:18	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 16:18	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 16:18	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 16:18	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 16:18	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 16:18	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 16:18	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 16:18	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 16:18	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 16:18	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 16:18	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 16:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 16:18	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 16:18	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 16:18	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 16:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: TB-01(031214)

Lab Sample ID: 680-99399-12

Date Collected: 03/12/14 00:00

Matrix: Water

Date Received: 03/13/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 16:18	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*78 - 118*		*03/16/14 16:18*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/16/14 16:18*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/16/14 16:18*	*1*

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

Lab Sample ID: MB 400-210762/4
Matrix: Water
Analysis Batch: 210762

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	10	ug/L			03/16/14 08:44	1
Benzene	1.0	U	1.0	0.34	ug/L			03/16/14 08:44	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Bromoform	5.0	U	5.0	0.71	ug/L			03/16/14 08:44	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/16/14 08:44	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/16/14 08:44	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/16/14 08:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 08:44	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/16/14 08:44	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/16/14 08:44	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/16/14 08:44	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/16/14 08:44	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/16/14 08:44	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/16/14 08:44	1
2-Hexanone	25	U	25	3.1	ug/L			03/16/14 08:44	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/16/14 08:44	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/16/14 08:44	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/16/14 08:44	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/16/14 08:44	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/16/14 08:44	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/16/14 08:44	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/16/14 08:44	1
Styrene	1.0	U	1.0	1.0	ug/L			03/16/14 08:44	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/16/14 08:44	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/16/14 08:44	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/16/14 08:44	1
Toluene	1.0	U	1.0	0.70	ug/L			03/16/14 08:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/16/14 08:44	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/16/14 08:44	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/16/14 08:44	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1

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

Lab Sample ID: MB 400-210762/4
Matrix: Water
Analysis Batch: 210762

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/16/14 08:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/16/14 08:44	1
Xylenes, Total	10	U	10	1.6	ug/L			03/16/14 08:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/16/14 08:44*	*1*
Dibromofluoromethane	*105*		*81 - 121*		*03/16/14 08:44*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/16/14 08:44*	*1*

Lab Sample ID: LCS 400-210762/1002
Matrix: Water
Analysis Batch: 210762

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	226		ug/L		113	24 - 150
Benzene	50.0	45.4		ug/L		91	79 - 120
Bromodichloromethane	50.0	50.5		ug/L		101	75 - 127
Bromoform	50.0	64.6	*	ug/L		129	65 - 121
Carbon disulfide	50.0	42.2		ug/L		84	41 - 140
Carbon tetrachloride	50.0	57.2		ug/L		114	46 - 141
Chlorobenzene	50.0	49.4		ug/L		99	80 - 120
Chloroethane	50.0	58.6		ug/L		117	37 - 150
Chloroform	50.0	49.1		ug/L		98	73 - 122
Chloromethane	50.0	45.3		ug/L		91	49 - 141
cis-1,2-Dichloroethene	50.0	52.6		ug/L		105	78 - 122
cis-1,3-Dichloropropene	50.0	48.8		ug/L		98	70 - 122
Cyclohexane	50.0	47.2		ug/L		94	69 - 123
Dibromochloromethane	50.0	58.0		ug/L		116	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	61.6		ug/L		123	52 - 124
1,2-Dichlorobenzene	50.0	51.3		ug/L		103	80 - 121
1,3-Dichlorobenzene	50.0	50.8		ug/L		102	77 - 124
1,4-Dichlorobenzene	50.0	50.5		ug/L		101	79 - 120
Dichlorodifluoromethane	50.0	29.1		ug/L		58	27 - 144
1,1-Dichloroethane	50.0	51.1		ug/L		102	75 - 126
1,2-Dichloroethane	50.0	55.6		ug/L		111	69 - 128
1,1-Dichloroethene	50.0	51.0		ug/L		102	50 - 134
1,2-Dichloropropane	50.0	50.8		ug/L		102	77 - 126
Diisopropyl ether	50.0	50.5		ug/L		101	69 - 143
Ethylbenzene	50.0	49.1		ug/L		98	80 - 120
Ethylene Dibromide	50.0	52.7		ug/L		105	80 - 120
Ethyl tert-butyl ether	50.0	46.0		ug/L		92	58 - 142
2-Hexanone	200	217		ug/L		109	60 - 150
Isopropylbenzene	50.0	49.7		ug/L		99	76 - 120
Methyl acetate	250	286		ug/L		115	58 - 150
Methylcyclohexane	50.0	46.6		ug/L		93	72 - 121
Methylene Chloride	50.0	46.6		ug/L		93	70 - 130
Methyl Ethyl Ketone	200	215		ug/L		108	62 - 137

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

Lab Sample ID: LCS 400-210762/1002
Matrix: Water
Analysis Batch: 210762

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
methyl isobutyl ketone	200	241		ug/L		120	63 - 150
Methyl tert-butyl ether	50.0	46.1		ug/L		92	70 - 124
Naphthalene	50.0	48.6		ug/L		97	45 - 131
Styrene	50.0	49.2		ug/L		98	79 - 124
Tert-amyl methyl ether	50.0	44.3		ug/L		89	65 - 125
tert-Butyl alcohol	500	743		ug/L		149	44 - 150
1,1,2,2-Tetrachloroethane	50.0	51.7		ug/L		103	68 - 132
Tetrachloroethene	50.0	42.3		ug/L		85	76 - 124
Toluene	50.0	47.3		ug/L		95	80 - 120
trans-1,2-Dichloroethene	50.0	48.5		ug/L		97	70 - 126
trans-1,3-Dichloropropene	50.0	52.1		ug/L		104	64 - 120
1,2,4-Trichlorobenzene	50.0	48.5		ug/L		97	69 - 128
1,1,1-Trichloroethane	50.0	50.5		ug/L		101	66 - 130
1,1,2-Trichloroethane	50.0	48.5		ug/L		97	80 - 120
Trichloroethene	50.0	50.7		ug/L		101	77 - 120
Trichlorofluoromethane	50.0	50.8		ug/L		102	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	53.5		ug/L		107	45 - 138
Vinyl chloride	50.0	49.1		ug/L		98	60 - 128
Xylenes, Total	100	101		ug/L		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*78 - 118*
Dibromofluoromethane	*102*		*81 - 121*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: 680-99399-1 MS
Matrix: Water
Analysis Batch: 210762

Client Sample ID: DUP-01(031214)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	25	U	200	156		ug/L		78	10 - 150
Benzene	1.0	U	50.0	47.7		ug/L		95	10 - 150
Bromodichloromethane	1.0	U	50.0	52.7		ug/L		105	61 - 133
Bromoform	5.0	U *	50.0	61.2		ug/L		122	54 - 125
Carbon disulfide	1.0	U	50.0	40.9		ug/L		82	10 - 150
Carbon tetrachloride	1.0	U	50.0	60.0		ug/L		120	40 - 138
Chlorobenzene	1.0	U	50.0	51.6		ug/L		103	10 - 150
Chloroethane	1.0	U	50.0	62.8		ug/L		126	38 - 150
Chloroform	1.0	U	50.0	51.3		ug/L		103	10 - 150
Chloromethane	1.0	U	50.0	47.5		ug/L		95	26 - 150
cis-1,2-Dichloroethene	1.0	U	50.0	54.1		ug/L		108	10 - 150
cis-1,3-Dichloropropene	5.0	U	50.0	49.3		ug/L		99	52 - 130
Cyclohexane	1.0	U	50.0	46.5		ug/L		93	10 - 150
Dibromochloromethane	1.0	U	50.0	58.8		ug/L		118	50 - 130
1,2-Dibromo-3-Chloropropane	5.0	U	50.0	53.0		ug/L		106	50 - 133
1,2-Dichlorobenzene	1.0	U	50.0	49.8		ug/L		100	10 - 150
1,3-Dichlorobenzene	1.0	U	50.0	49.6		ug/L		99	25 - 136

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

Lab Sample ID: 680-99399-1 MS
Matrix: Water
Analysis Batch: 210762

Client Sample ID: DUP-01(031214)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	1.0	U	50.0	49.0		ug/L		98	10 - 150
Dichlorodifluoromethane	1.0	U	50.0	26.8		ug/L		54	10 - 150
1,1-Dichloroethane	1.0	U	50.0	53.5		ug/L		107	10 - 150
1,2-Dichloroethane	1.0	U	50.0	56.7		ug/L		113	10 - 150
1,1-Dichloroethene	1.0	U	50.0	51.7		ug/L		103	10 - 150
1,2-Dichloropropane	1.0	U	50.0	52.4		ug/L		105	65 - 132
Diisopropyl ether	1.0	U	50.0	52.7		ug/L		105	10 - 150
Ethylbenzene	1.0	U	50.0	50.4		ug/L		101	10 - 150
Ethylene Dibromide	1.0	U	50.0	51.3		ug/L		103	70 - 125
Ethyl tert-butyl ether	1.0	U	50.0	46.4		ug/L		93	49 - 150
2-Hexanone	25	U	200	201		ug/L		100	24 - 150
Isopropylbenzene	1.0	U	50.0	50.5		ug/L		101	10 - 150
Methyl acetate	5.0	U	250	257		ug/L		103	10 - 150
Methylcyclohexane	1.0	U	50.0	48.6		ug/L		97	10 - 150
Methylene Chloride	5.0	U	50.0	48.5		ug/L		97	10 - 150
Methyl Ethyl Ketone	25	U	200	168		ug/L		84	10 - 150
methyl isobutyl ketone	25	U	200	215		ug/L		108	20 - 150
Methyl tert-butyl ether	1.0	U	50.0	46.3		ug/L		93	10 - 150
Naphthalene	1.0	U	50.0	44.2		ug/L		88	10 - 150
Styrene	1.0	U	50.0	49.6		ug/L		99	24 - 147
Tert-amyl methyl ether	1.0	U	50.0	45.1		ug/L		90	10 - 150
tert-Butyl alcohol	10	U	500	641		ug/L		128	10 - 150
1,1,2,2-Tetrachloroethane	1.0	U	50.0	46.8		ug/L		94	52 - 148
Tetrachloroethene	1.0	U	50.0	50.1		ug/L		100	10 - 150
Toluene	1.0	U	50.0	49.1		ug/L		98	10 - 150
trans-1,2-Dichloroethene	1.0	U	50.0	50.8		ug/L		102	66 - 126
trans-1,3-Dichloropropene	5.0	U	50.0	51.8		ug/L		104	45 - 128
1,2,4-Trichlorobenzene	1.0	U	50.0	39.7		ug/L		79	20 - 139
1,1,1-Trichloroethane	1.0	U	50.0	53.7		ug/L		107	60 - 131
1,1,2-Trichloroethane	5.0	U	50.0	49.4		ug/L		99	68 - 127
Trichloroethene	1.0	U	50.0	52.7		ug/L		105	10 - 150
Trichlorofluoromethane	1.0	U	50.0	54.9		ug/L		110	29 - 144
1,1,2-Trichloro-1,2,2-trifluoroetha ne	1.0	U	50.0	53.7		ug/L		107	41 - 136
Vinyl chloride	1.0	U	50.0	50.1		ug/L		100	46 - 136
Xylenes, Total	10	U	100	102		ug/L		102	10 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*78 - 118*
Dibromofluoromethane	*101*		*81 - 121*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 680-99399-1 MSD
Matrix: Water
Analysis Batch: 210762

Client Sample ID: DUP-01(031214)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	25	U	200	154		ug/L		77	10 - 150	1	22

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

Lab Sample ID: 680-99399-1 MSD
Matrix: Water
Analysis Batch: 210762

Client Sample ID: DUP-01(031214)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	50.0	48.3		ug/L		97	10 - 150	1	19
Bromodichloromethane	1.0	U	50.0	53.5		ug/L		107	61 - 133	1	19
Bromoform	5.0	U *	50.0	60.8		ug/L		122	54 - 125	1	19
Carbon disulfide	1.0	U	50.0	42.0		ug/L		84	10 - 150	3	23
Carbon tetrachloride	1.0	U	50.0	59.3		ug/L		119	40 - 138	1	21
Chlorobenzene	1.0	U	50.0	48.9		ug/L		98	10 - 150	5	30
Chloroethane	1.0	U	50.0	68.7		ug/L		137	38 - 150	9	23
Chloroform	1.0	U	50.0	52.4		ug/L		105	10 - 150	2	18
Chloromethane	1.0	U	50.0	47.0		ug/L		94	26 - 150	1	23
cis-1,2-Dichloroethene	1.0	U	50.0	55.3		ug/L		111	10 - 150	2	20
cis-1,3-Dichloropropene	5.0	U	50.0	50.6		ug/L		101	52 - 130	2	20
Cyclohexane	1.0	U	50.0	48.0		ug/L		96	10 - 150	3	20
Dibromochloromethane	1.0	U	50.0	57.2		ug/L		114	50 - 130	3	21
1,2-Dibromo-3-Chloropropane	5.0	U	50.0	55.2		ug/L		110	50 - 133	4	30
1,2-Dichlorobenzene	1.0	U	50.0	46.8		ug/L		94	10 - 150	6	38
1,3-Dichlorobenzene	1.0	U	50.0	44.4		ug/L		89	25 - 136	11	44
1,4-Dichlorobenzene	1.0	U	50.0	43.6		ug/L		87	10 - 150	12	45
Dichlorodifluoromethane	1.0	U	50.0	27.5		ug/L		55	10 - 150	3	23
1,1-Dichloroethane	1.0	U	50.0	55.5		ug/L		111	10 - 150	4	18
1,2-Dichloroethane	1.0	U	50.0	57.1		ug/L		114	10 - 150	1	19
1,1-Dichloroethene	1.0	U	50.0	53.8		ug/L		108	10 - 150	4	19
1,2-Dichloropropane	1.0	U	50.0	55.1		ug/L		110	65 - 132	5	18
Diisopropyl ether	1.0	U	50.0	53.9		ug/L		108	10 - 150	2	24
Ethylbenzene	1.0	U	50.0	48.1		ug/L		96	10 - 150	5	40
Ethylene Dibromide	1.0	U	50.0	51.4		ug/L		103	70 - 125	0	21
Ethyl tert-butyl ether	1.0	U	50.0	48.9		ug/L		98	49 - 150	5	25
2-Hexanone	25	U	200	199		ug/L		99	24 - 150	1	24
Isopropylbenzene	1.0	U	50.0	46.7		ug/L		93	10 - 150	8	46
Methyl acetate	5.0	U	250	253		ug/L		101	10 - 150	1	23
Methylcyclohexane	1.0	U	50.0	48.8		ug/L		98	10 - 150	1	22
Methylene Chloride	5.0	U	50.0	50.5		ug/L		101	10 - 150	4	18
Methyl Ethyl Ketone	25	U	200	170		ug/L		85	10 - 150	1	21
methyl isobutyl ketone	25	U	200	218		ug/L		109	20 - 150	1	20
Methyl tert-butyl ether	1.0	U	50.0	47.8		ug/L		96	10 - 150	3	18
Naphthalene	1.0	U	50.0	43.9		ug/L		88	10 - 150	1	53
Styrene	1.0	U	50.0	46.6		ug/L		93	24 - 147	6	40
Tert-amyl methyl ether	1.0	U	50.0	46.2		ug/L		92	10 - 150	2	19
tert-Butyl alcohol	10	U	500	670		ug/L		134	10 - 150	4	32
1,1,2,2-Tetrachloroethane	1.0	U	50.0	49.9		ug/L		100	52 - 148	6	20
Tetrachloroethene	1.0	U	50.0	49.0		ug/L		98	10 - 150	2	35
Toluene	1.0	U	50.0	47.7		ug/L		95	10 - 150	3	26
trans-1,2-Dichloroethene	1.0	U	50.0	51.7		ug/L		103	66 - 126	2	19
trans-1,3-Dichloropropene	5.0	U	50.0	51.8		ug/L		104	45 - 128	0	20
1,2,4-Trichlorobenzene	1.0	U	50.0	40.9		ug/L		82	20 - 139	3	44
1,1,1-Trichloroethane	1.0	U	50.0	53.5		ug/L		107	60 - 131	0	20
1,1,2-Trichloroethane	5.0	U	50.0	50.4		ug/L		101	68 - 127	2	19
Trichloroethene	1.0	U	50.0	53.7		ug/L		107	10 - 150	2	22
Trichlorofluoromethane	1.0	U	50.0	54.8		ug/L		110	29 - 144	0	20

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

Lab Sample ID: 680-99399-1 MSD — **Client Sample ID: DUP-01(031214)**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 210762

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	50.0	56.2		ug/L		112	41 - 136	4	20
Vinyl chloride	1.0	U	50.0	50.6		ug/L		101	46 - 136	1	20
Xylenes, Total	10	U	100	95.1		ug/L		95	10 - 150	7	41

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*78 - 118*
Dibromofluoromethane	*101*		*81 - 121*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 680-319904/8 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 319904

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	12.0	J	50	11	ug/L			03/17/14 13:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*99*		*70 - 130*		*03/17/14 13:47*	*1*

Lab Sample ID: LCS 680-319904/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 319904

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	200	172		ug/L		86	70 - 148

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*93*		*70 - 130*

Lab Sample ID: LCSD 680-319904/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 319904

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	200	200		ug/L		100	70 - 148	15	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*95*		*70 - 130*

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

Lab Sample ID: MB 680-320336/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	13.0	J	50	11	ug/L			03/19/14 13:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*99*		*70 - 130*		*03/19/14 13:20*	*1*

Lab Sample ID: LCS 680-320336/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	200	205		ug/L		102	70 - 148

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*89*		*70 - 130*

Lab Sample ID: LCSD 680-320336/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	200	198		ug/L		99	70 - 148	3	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*97*		*70 - 130*

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

Lab Sample ID: MB 490-148833/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 149105 — **Prep Batch: 148833**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	100	U	100	28	ug/L		03/19/14 15:17	03/20/14 19:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*72*		*50 - 150*	*03/19/14 15:17*	*03/20/14 19:02*	*1*

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

Lab Sample ID: LCS 490-148833/2-A
Matrix: Water
Analysis Batch: 149105

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 148833

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			1000	960		ug/L		96	46 - 132		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*95*		*50 - 150*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

GC/MS VOA

Analysis Batch: 210762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99399-1	DUP-01(031214)	Total/NA	Water	8260B	
680-99399-1 MS	DUP-01(031214)	Total/NA	Water	8260B	
680-99399-1 MSD	DUP-01(031214)	Total/NA	Water	8260B	
680-99399-2	MW-68(031214)	Total/NA	Water	8260B	
680-99399-3	MW-64(031214)	Total/NA	Water	8260B	
680-99399-4	MW-65(031214)	Total/NA	Water	8260B	
680-99399-5	MW-67(031214)	Total/NA	Water	8260B	
680-99399-6	MW-62(031214)	Total/NA	Water	8260B	
680-99399-7	MW-69(031214)	Total/NA	Water	8260B	
680-99399-8	MW-70(031214)	Total/NA	Water	8260B	
680-99399-9	MW-61(031214)	Total/NA	Water	8260B	
680-99399-10	MW-59(031214)	Total/NA	Water	8260B	
680-99399-11	MW-25(031214)	Total/NA	Water	8260B	
680-99399-12	TB-01(031214)	Total/NA	Water	8260B	
LCS 400-210762/1002	Lab Control Sample	Total/NA	Water	8260B	
MB 400-210762/4	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 319904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99399-1	DUP-01(031214)	Total/NA	Water	8015C	
680-99399-2	MW-68(031214)	Total/NA	Water	8015C	
680-99399-3	MW-64(031214)	Total/NA	Water	8015C	
680-99399-4	MW-65(031214)	Total/NA	Water	8015C	
680-99399-5	MW-67(031214)	Total/NA	Water	8015C	
680-99399-6	MW-62(031214)	Total/NA	Water	8015C	
680-99399-7	MW-69(031214)	Total/NA	Water	8015C	
680-99399-8	MW-70(031214)	Total/NA	Water	8015C	
680-99399-9	MW-61(031214)	Total/NA	Water	8015C	
680-99399-11	MW-25(031214)	Total/NA	Water	8015C	
LCS 680-319904/6	Lab Control Sample	Total/NA	Water	8015C	
LCSD 680-319904/7	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 680-319904/8	Method Blank	Total/NA	Water	8015C	

Analysis Batch: 320336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99399-10	MW-59(031214)	Total/NA	Water	8015C	
LCS 680-320336/5	Lab Control Sample	Total/NA	Water	8015C	
LCSD 680-320336/6	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 680-320336/7	Method Blank	Total/NA	Water	8015C	

GC Semi VOA

Prep Batch: 148833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99399-1	DUP-01(031214)	Total/NA	Water	3510C	
680-99399-2	MW-68(031214)	Total/NA	Water	3510C	
680-99399-3	MW-64(031214)	Total/NA	Water	3510C	
680-99399-4	MW-65(031214)	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 148833 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99399-5	MW-67(031214)	Total/NA	Water	3510C	
680-99399-6	MW-62(031214)	Total/NA	Water	3510C	
680-99399-7	MW-69(031214)	Total/NA	Water	3510C	
680-99399-8	MW-70(031214)	Total/NA	Water	3510C	
680-99399-9	MW-61(031214)	Total/NA	Water	3510C	
680-99399-10	MW-59(031214)	Total/NA	Water	3510C	
680-99399-11	MW-25(031214)	Total/NA	Water	3510C	
LCS 490-148833/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 490-148833/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 149105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99399-1	DUP-01(031214)	Total/NA	Water	8015C	148833
680-99399-2	MW-68(031214)	Total/NA	Water	8015C	148833
680-99399-3	MW-64(031214)	Total/NA	Water	8015C	148833
680-99399-4	MW-65(031214)	Total/NA	Water	8015C	148833
680-99399-5	MW-67(031214)	Total/NA	Water	8015C	148833
680-99399-6	MW-62(031214)	Total/NA	Water	8015C	148833
680-99399-7	MW-69(031214)	Total/NA	Water	8015C	148833
680-99399-8	MW-70(031214)	Total/NA	Water	8015C	148833
680-99399-9	MW-61(031214)	Total/NA	Water	8015C	148833
680-99399-10	MW-59(031214)	Total/NA	Water	8015C	148833
680-99399-11	MW-25(031214)	Total/NA	Water	8015C	148833
LCS 490-148833/2-A	Lab Control Sample	Total/NA	Water	8015C	148833
MB 490-148833/1-A	Method Blank	Total/NA	Water	8015C	148833

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: DUP-01(031214)

Lab Sample ID: 680-99399-1
Date Collected: 03/12/14 12:00
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 09:33	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 21:44	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	149105	03/20/14 19:33	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-68(031214)

Lab Sample ID: 680-99399-2
Date Collected: 03/12/14 10:05
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 12:00	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 17:47	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1000 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1000 mL	1 mL	149105	03/20/14 19:49	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-64(031214)

Lab Sample ID: 680-99399-3
Date Collected: 03/12/14 10:50
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 12:24	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 18:12	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1000 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1000 mL	1 mL	149105	03/20/14 20:05	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-65(031214)

Lab Sample ID: 680-99399-4
Date Collected: 03/12/14 10:55
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 12:50	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 18:38	TAR	TAL SAV
	Instrument ID: CVGWFID1									

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-65(031214)

Lab Sample ID: 680-99399-4
Date Collected: 03/12/14 10:55
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1050 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		20	1050 mL	1 mL	149105	03/21/14 10:10	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-67(031214)

Lab Sample ID: 680-99399-5
Date Collected: 03/12/14 12:45
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 13:16	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 19:04	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		25	1060 mL	1 mL	149105	03/21/14 10:26	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-62(031214)

Lab Sample ID: 680-99399-6
Date Collected: 03/12/14 13:30
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 13:42	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 19:29	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		50	1060 mL	1 mL	149105	03/21/14 10:41	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-69(031214)

Lab Sample ID: 680-99399-7
Date Collected: 03/12/14 14:20
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 14:08	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 19:55	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			850 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		1	850 mL	1 mL	149105	03/20/14 21:08	JPS	TAL NSH
	Instrument ID: PE10									

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-70(031214)

Lab Sample ID: 680-99399-8

Date Collected: 03/12/14 14:50
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 14:34	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 20:24	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	149105	03/20/14 21:24	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-61(031214)

Lab Sample ID: 680-99399-9

Date Collected: 03/12/14 15:35
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 15:00	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 20:53	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1030 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		50	1030 mL	1 mL	149105	03/21/14 10:57	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-59(031214)

Lab Sample ID: 680-99399-10

Date Collected: 03/12/14 16:30
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 15:26	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		2	20 mL	20 mL	320336	03/19/14 14:50	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1040 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		50	1040 mL	1 mL	149105	03/21/14 11:12	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-25(031214)

Lab Sample ID: 680-99399-11

Date Collected: 03/12/14 17:05
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 15:52	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	319904	03/17/14 21:18	TAR	TAL SAV
	Instrument ID: CVGWFID1									

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Client Sample ID: MW-25(031214)

Lab Sample ID: 680-99399-11

Date Collected: 03/12/14 17:05
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1050 mL	1 mL	148833	03/19/14 15:17	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1050 mL	1 mL	149105	03/20/14 22:11	JPS	TAL NSH
	Instrument ID: PE10									

Client Sample ID: TB-01(031214)

Lab Sample ID: 680-99399-12

Date Collected: 03/12/14 00:00
Matrix: Water
Date Received: 03/13/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210762	03/16/14 16:18	WPD	TAL PEN
	Instrument ID: CH_CONAN									

Laboratory References:

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

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

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

TEST AMERICA SAVANNAH
5102 LA ROCHE AVE
SAVANNAH, GA 31404

Chain of Custod

680-99399 Chain of Custody

TestAmerica

Client Information	Sampler: LAUREN LAMP	Lab PM: Harvey, Lisa M	COC No: 80-54866-24042.4
Client Contact: ~~Mr. Scott Stout~~ JOSHUA WILSON	Phone: 571.375.5180	E-Mail: lisa.harvey@testamericainc.com	Page: Page 4 of 4
Company: ~~Newfields Companies LLC~~ ARCADIS U.S.			Job #:
Address: ~~300 Ledgewood PL, Ste. 305~~ 1114 BENFIELD BLVD SUITE A	Due Date Requested:		
City: ~~Rockland~~ MILLERSVILLE	TAT Requested (days): CSXT STANDARD		
State, Zip: ~~MA, 02370~~ MD, 21108			
Phone:	PO #: ~~ENV00000035683~~		
Email: ~~cstout@newfields.com~~ joshua.wilson@arcadis-us.com	WO #: ~~R9415381~~		
Project Name: CSX ~~C&O Canal~~ Brunswick, MD	Project #: ~~68001160~~ MD000843.0010		
Site: BRUNSWICK RAIL YARD	SSOW#: 00004		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) TCL 8260 + Oxygenates	8015C_DRO - Diesel Range Organics (C10-C28)	8015C_GRO - Gasoline Range Organics	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	A		
DUP-01(031214)	3.12.14	1200	G	Water	N	N	X	X	X		LWON # ENV35683 CSXT PROJECT # 9415381
MW-68(031214)	↓	1005	G	Water	N	N	X	X	X		
MW-64(031214)	↓	1050	G	W	N	N	X	X	X		
MW-65(031214)	↓	1055	G	W	N	N	X	X	X		
MW-67(031214)	↓	1245	G	W	N	N	X	X	X		
MW-62(031214)	3.12.14	1330	G	W	N	N	X	X	X		
MW-69(031214)	↓	1420	G	W	N	N	X	X	X		
MW-70(031214)	↓	1450	G	W	N	N	X	X	X		
MW-61(031214)	↓	1535	G	W	N	N	X	X	X		
MW-59(031214)	↓	1630	G	W	N	N	X	X	X		
MW-25(031214) TB-01(031214)	3.12.14	1705	G	W	N	N	X	X	X		TRIP BLANK PER VOCS

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) CSXT STANDARD LEVEL 2

Special Instructions/QC Requirements: CSXT STANDARD

Empty Kit Relinquished by: L	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
LAUREN LAMP	3.12.14	ARCADIS	Cindy Banda	03-13-14 0939	TASAV
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.6/2.6/2.6°C

3/28/2014

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99399-1

Login Number: 99399

List Source: TestAmerica Savannah

List Number: 1

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	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: 680-99399-1

Login Number: 99399
List Number: 1
Creator: Buckingham, Paul

List Source: TestAmerica Nashville
List Creation: 03/14/14 12:41 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99399-1

Login Number: 99399
List Number: 1
Creator: Ricketts, Erin

List Source: TestAmerica Pensacola
List Creation: 03/14/14 01:45 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	2.5°C IR #6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99399-1

Login Number: 99399
List Number: 2
Creator: Ricketts, Erin

List Source: TestAmerica Pensacola
List Creation: 03/14/14 01:51 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	2.5°C IR #6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	250	12-31-14

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14 *
California	NELAP	9	1168CA	10-31-14
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-14
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-14
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14 *
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-14
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-14
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14 *
North Carolina DENR	State Program	4	387	12-31-14
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-14
South Carolina	State Program	4	84009 (002)	02-23-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-15
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-15

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99399-1

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	09-01-14
Florida	NELAP	4	E81010	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200041	10-09-14
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-14
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-14
Michigan	State Program	5	9912	05-04-14
New Jersey	NELAP	2	FL006	06-30-14
North Carolina DENR	State Program	4	314	12-31-14
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-15
Rhode Island	State Program	1	LAO00307	12-30-14
South Carolina	State Program	4	96026	06-30-14
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-14
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

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: 680-99454-1
Client Project/Site: CSX Brunswick, MD Rail Yard

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

Attn: Ms. Megan Kellner

Authorized for release by:
3/28/2014 4:23:10 PM

Lisa Harvey, Project Manager II
(912)354-7858 e.3221
lisa.harvey@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Job ID: 680-99454-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX Brunswick, MD Rail Yard
Report Number: 680-99454-1

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 3/14/2014 9:31 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.6º C, 4.4º C and 4.4º C.

Sample DUP-02 (031314) was received but was not listed on the COC. It was logged as sample 680-99454-14.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples NPS MW-14 (031314) (680-99454-1), NPS MW-13 (031314) (680-99454-2), NPS MW-5 (031314) (680-99454-3), NPS MW-1 (031314) (680-99454-4), NPS MW-2 (031314) (680-99454-5), NPS MW-18 (031314) (680-99454-6), NPS MW-16 (031314) (680-99454-7), MW-43 (031314) (680-99454-8), NPS MW-4 (031314) (680-99454-9), MW-6R (031314) (680-99454-10), MW-3 (031314) (680-99454-11), MW-22 (031314) (680-99454-12), TRIP BLANK (680-99454-13) and DUP-02 (031314) (680-99454-14) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/17/2014 and 03/19/2014.

Method(s) 8260B: The laboratory control sample (LCS) for batch 210775 recovered outside control limits for the following analyte: Bromoform. Thisanalyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.DUP-02 (031314) (680-99454-14), MW-22 (031314) (680-99454-12), MW-3 (031314) (680-99454-11), MW-43 (031314) (680-99454-8), MW-6R (031314) (680-99454-10), NPS MW-1 (031314) (680-99454-4), NPS MW-13 (031314) (680-99454-2), NPS MW-14 (031314) (680-99454-1), NPS MW-16 (031314) (680-99454-7), NPS MW-18 (031314) (680-99454-6), NPS MW-2 (031314) (680-99454-5), NPS MW-4 (031314) (680-99454-9), NPS MW-5 (031314) (680-99454-3).

Bromoform recovery is outside criteria high for LCS 400-210775/1002. Refer to the QC report for details.

tert-Butyl alcohol recovery is outside criteria high for the MS and MSD of sample NPS MW-14 (031314) (680-99454-1) in batch 400-210775.

GASOLINE RANGE ORGANICS (GRO)

Samples NPS MW-14 (031314) (680-99454-1), NPS MW-13 (031314) (680-99454-2), NPS MW-5 (031314) (680-99454-3), NPS MW-1 (031314) (680-99454-4), NPS MW-2 (031314) (680-99454-5), NPS MW-18 (031314) (680-99454-6), NPS MW-16 (031314) (680-99454-7), MW-43 (031314) (680-99454-8), NPS MW-4 (031314) (680-99454-9), MW-6R (031314) (680-99454-10), MW-3 (031314) (680-99454-11), MW-22 (031314) (680-99454-12) and DUP-02 (031314) (680-99454-14) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015C.

Gasoline Range Organics (GRO)-C6-C10 was detected in method blank MB 680-320336/7 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

DIESEL RANGE ORGANICS (DRO)

Samples NPS MW-14 (031314) (680-99454-1), NPS MW-13 (031314) (680-99454-2), NPS MW-5 (031314) (680-99454-3), NPS MW-1 (031314) (680-99454-4), NPS MW-2 (031314) (680-99454-5), NPS MW-18 (031314) (680-99454-6), NPS MW-16 (031314) (680-99454-7), MW-43 (031314) (680-99454-8), NPS MW-4 (031314) (680-99454-9), MW-3 (031314) (680-99454-11), MW-22 (031314) (680-99454-12) and DUP-02 (031314) (680-99454-14) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Job ID: 680-99454-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Method(s) 8015C, 8015D: The following sample(s) was diluted due to the nature of the sample matrix: MW-22 (031314) (680-99454-12). Elevated reporting limits (RLs) are provided.

Diesel Range Organics [C10-C28] was detected in method blank MB 490-148239/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples NPS MW-4 (031314) (680-99454-9)[2X] and MW-22 (031314) (680-99454-12)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-99454-1	NPS MW-14 (031314)	Water	03/13/14 09:40	03/14/14 09:31
680-99454-2	NPS MW-13 (031314)	Water	03/13/14 10:10	03/14/14 09:31
680-99454-3	NPS MW-5 (031314)	Water	03/13/14 10:50	03/14/14 09:31
680-99454-4	NPS MW-1 (031314)	Water	03/13/14 11:15	03/14/14 09:31
680-99454-5	NPS MW-2 (031314)	Water	03/13/14 11:25	03/14/14 09:31
680-99454-6	NPS MW-18 (031314)	Water	03/13/14 12:45	03/14/14 09:31
680-99454-7	NPS MW-16 (031314)	Water	03/13/14 13:15	03/14/14 09:31
680-99454-8	MW-43 (031314)	Water	03/13/14 14:00	03/14/14 09:31
680-99454-9	NPS MW-4 (031314)	Water	03/13/14 14:45	03/14/14 09:31
680-99454-10	MW-6R (031314)	Water	03/13/14 14:50	03/14/14 09:31
680-99454-11	MW-3 (031314)	Water	03/13/14 15:50	03/14/14 09:31
680-99454-12	MW-22 (031314)	Water	03/13/14 16:30	03/14/14 09:31
680-99454-13	TRIP BLANK	Water	03/13/14 00:00	03/14/14 09:31
680-99454-14	DUP-02 (031314)	Water	03/13/14 12:00	03/14/14 09:31

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

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

Protocol References:

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

Laboratory References:

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

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

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

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD exceeds the control limits
F1	MS and/or MSD Recovery exceeds the control limits

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-14 (031314)

Lab Sample ID: 680-99454-1

Date Collected: 03/13/14 09:40

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 08:27	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 08:27	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 08:27	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 08:27	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 08:27	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 08:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 08:27	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 08:27	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 08:27	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 08:27	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 08:27	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 08:27	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 08:27	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 08:27	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 08:27	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 08:27	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 08:27	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 08:27	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 08:27	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 08:27	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 08:27	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 08:27	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 08:27	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 08:27	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 08:27	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 08:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 08:27	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 08:27	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 08:27	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 08:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-14 (031314)

Lab Sample ID: 680-99454-1

Date Collected: 03/13/14 09:40

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 08:27	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 08:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*03/17/14 08:27*	*1*
Dibromofluoromethane	*100*		*81 - 121*		*03/17/14 08:27*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/17/14 08:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**54**	**B**	50	11	ug/L			03/19/14 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*101*		*70 - 130*		*03/19/14 16:13*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1200**	**B**	96	27	ug/L		03/17/14 16:13	03/18/14 16:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*51*		*50 - 150*	*03/17/14 16:13*	*03/18/14 16:15*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-13 (031314)

Lab Sample ID: 680-99454-2

Date Collected: 03/13/14 10:10

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 13:01	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 13:01	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 13:01	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 13:01	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 13:01	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 13:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 13:01	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 13:01	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 13:01	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 13:01	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 13:01	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 13:01	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 13:01	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 13:01	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 13:01	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 13:01	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 13:01	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 13:01	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 13:01	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 13:01	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 13:01	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 13:01	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 13:01	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 13:01	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 13:01	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 13:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 13:01	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 13:01	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 13:01	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 13:01	1

Client Sample ID: NPS MW-13 (031314)

Lab Sample ID: 680-99454-2

Date Collected: 03/13/14 10:10

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 13:01	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/17/14 13:01*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*03/17/14 13:01*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/17/14 13:01*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**20**	**J B**	50	11	ug/L			03/19/14 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*101*		*70 - 130*		*03/19/14 16:39*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**340**	**B**	94	26	ug/L		03/17/14 16:13	03/18/14 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*67*		*50 - 150*	*03/17/14 16:13*	*03/18/14 16:30*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-5 (031314)

Lab Sample ID: 680-99454-3

Date Collected: 03/13/14 10:50

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 13:27	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 13:27	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 13:27	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 13:27	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 13:27	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 13:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 13:27	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 13:27	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 13:27	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 13:27	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 13:27	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 13:27	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 13:27	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 13:27	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 13:27	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 13:27	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 13:27	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 13:27	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 13:27	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 13:27	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 13:27	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 13:27	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 13:27	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 13:27	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 13:27	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 13:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 13:27	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 13:27	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 13:27	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 13:27	1

Client Sample ID: NPS MW-5 (031314)

Lab Sample ID: 680-99454-3

Date Collected: 03/13/14 10:50

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 13:27	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*03/17/14 13:27*	*1*
Dibromofluoromethane	*98*		*81 - 121*		*03/17/14 13:27*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/17/14 13:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**17**	**J B**	50	11	ug/L			03/19/14 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*100*		*70 - 130*		*03/19/14 17:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**310**	**B**	95	27	ug/L		03/17/14 16:13	03/18/14 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*50 - 150*	*03/17/14 16:13*	*03/18/14 16:46*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-1 (031314)

Lab Sample ID: 680-99454-4

Date Collected: 03/13/14 11:15

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 13:53	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 13:53	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 13:53	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 13:53	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 13:53	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 13:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 13:53	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 13:53	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 13:53	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 13:53	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 13:53	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 13:53	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 13:53	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 13:53	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 13:53	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 13:53	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 13:53	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 13:53	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 13:53	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 13:53	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 13:53	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 13:53	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 13:53	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 13:53	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 13:53	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 13:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 13:53	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 13:53	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 13:53	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 13:53	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-1 (031314)

Lab Sample ID: 680-99454-4

Date Collected: 03/13/14 11:15
Matrix: Water
Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 13:53	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/17/14 13:53*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*03/17/14 13:53*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/17/14 13:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**15**	**J B**	50	11	ug/L			03/19/14 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*100*		*70 - 130*		*03/19/14 17:33*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**240**	**B**	94	26	ug/L		03/17/14 16:13	03/18/14 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*79*		*50 - 150*	*03/17/14 16:13*	*03/18/14 17:02*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-2 (031314)

Lab Sample ID: 680-99454-5

Date Collected: 03/13/14 11:25
Matrix: Water
Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 14:19	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 14:19	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 14:19	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 14:19	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 14:19	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 14:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 14:19	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 14:19	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 14:19	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 14:19	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 14:19	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 14:19	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 14:19	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 14:19	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 14:19	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 14:19	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 14:19	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 14:19	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 14:19	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 14:19	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 14:19	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 14:19	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 14:19	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 14:19	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 14:19	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 14:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 14:19	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 14:19	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 14:19	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 14:19	1

Client Sample ID: NPS MW-2 (031314)

Lab Sample ID: 680-99454-5

Date Collected: 03/13/14 11:25

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 14:19	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*03/17/14 14:19*	*1*
Dibromofluoromethane	*99*		*81 - 121*		*03/17/14 14:19*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/17/14 14:19*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**16**	**J B**	50	11	ug/L			03/19/14 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*100*		*70 - 130*		*03/19/14 17:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**550**	**B**	95	27	ug/L		03/17/14 16:13	03/18/14 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*50 - 150*	*03/17/14 16:13*	*03/18/14 17:17*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-18 (031314)

Lab Sample ID: 680-99454-6

Date Collected: 03/13/14 12:45

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 14:45	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 14:45	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 14:45	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 14:45	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 14:45	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 14:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 14:45	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 14:45	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 14:45	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 14:45	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 14:45	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 14:45	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 14:45	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 14:45	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 14:45	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 14:45	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 14:45	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 14:45	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 14:45	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 14:45	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 14:45	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 14:45	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 14:45	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 14:45	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 14:45	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 14:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 14:45	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 14:45	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 14:45	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 14:45	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-18 (031314)

Lab Sample ID: 680-99454-6

Date Collected: 03/13/14 12:45
Matrix: Water
Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 14:45	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 14:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*78 - 118*		*03/17/14 14:45*	*1*
Dibromofluoromethane	*105*		*81 - 121*		*03/17/14 14:45*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/17/14 14:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**17**	**J B**	50	11	ug/L			03/19/14 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*102*		*70 - 130*		*03/19/14 18:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**260**	**B**	94	26	ug/L		03/17/14 16:13	03/18/14 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*50 - 150*	*03/17/14 16:13*	*03/18/14 17:33*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-16 (031314)

Lab Sample ID: 680-99454-7

Date Collected: 03/13/14 13:15

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 15:11	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 15:11	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 15:11	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 15:11	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 15:11	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 15:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 15:11	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 15:11	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 15:11	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 15:11	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 15:11	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 15:11	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 15:11	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 15:11	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 15:11	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 15:11	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 15:11	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 15:11	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 15:11	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 15:11	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 15:11	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 15:11	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 15:11	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 15:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 15:11	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 15:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 15:11	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 15:11	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 15:11	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 15:11	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-16 (031314)

Lab Sample ID: 680-99454-7

Date Collected: 03/13/14 13:15

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 15:11	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 15:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/17/14 15:11*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/17/14 15:11*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/17/14 15:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**15**	**J B**	50	11	ug/L			03/19/14 18:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*100*		*70 - 130*		*03/19/14 18:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**800**	**B**	94	26	ug/L		03/17/14 16:13	03/18/14 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*79*		*50 - 150*	*03/17/14 16:13*	*03/18/14 17:49*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-43 (031314)

Lab Sample ID: 680-99454-8

Date Collected: 03/13/14 14:00

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 15:37	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 15:37	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 15:37	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 15:37	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 15:37	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 15:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 15:37	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 15:37	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 15:37	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 15:37	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 15:37	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 15:37	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 15:37	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 15:37	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 15:37	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 15:37	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 15:37	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 15:37	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 15:37	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 15:37	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 15:37	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 15:37	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 15:37	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 15:37	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 15:37	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 15:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 15:37	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 15:37	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 15:37	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 15:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-43 (031314)

Lab Sample ID: 680-99454-8

Date Collected: 03/13/14 14:00
Matrix: Water
Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 15:37	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 15:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*03/17/14 15:37*	*1*
Dibromofluoromethane	*100*		*81 - 121*		*03/17/14 15:37*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*03/17/14 15:37*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**18**	**J B**	50	11	ug/L			03/19/14 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*101*		*70 - 130*		*03/19/14 19:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1600**	**B**	94	26	ug/L		03/17/14 16:13	03/18/14 18:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*68*		*50 - 150*	*03/17/14 16:13*	*03/18/14 18:04*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-4 (031314)

Lab Sample ID: 680-99454-9

Date Collected: 03/13/14 14:45

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 16:03	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 16:03	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 16:03	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 16:03	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 16:03	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 16:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 16:03	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 16:03	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 16:03	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 16:03	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 16:03	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 16:03	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 16:03	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 16:03	1
Isopropylbenzene	**1.2**		1.0	0.53	ug/L			03/17/14 16:03	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 16:03	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 16:03	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 16:03	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 16:03	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 16:03	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 16:03	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 16:03	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 16:03	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 16:03	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 16:03	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 16:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 16:03	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 16:03	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 16:03	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 16:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-4 (031314)

Lab Sample ID: 680-99454-9

Date Collected: 03/13/14 14:45
Matrix: Water
Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 16:03	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/17/14 16:03*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/17/14 16:03*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/17/14 16:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**69**	**B**	50	11	ug/L			03/19/14 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*101*		*70 - 130*		*03/19/14 19:42*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**7800**	**B**	190	53	ug/L		03/17/14 16:13	03/19/14 10:21	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*127*		*50 - 150*	*03/17/14 16:13*	*03/19/14 10:21*	*2*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-6R (031314)

Lab Sample ID: 680-99454-10

Date Collected: 03/13/14 14:50

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 16:29	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 16:29	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 16:29	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 16:29	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 16:29	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 16:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 16:29	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 16:29	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 16:29	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 16:29	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 16:29	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 16:29	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 16:29	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 16:29	1
Isopropylbenzene	**2.6**		1.0	0.53	ug/L			03/17/14 16:29	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 16:29	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 16:29	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 16:29	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 16:29	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 16:29	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 16:29	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 16:29	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 16:29	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 16:29	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 16:29	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 16:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 16:29	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 16:29	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 16:29	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 16:29	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-6R (031314)

Lab Sample ID: 680-99454-10

Date Collected: 03/13/14 14:50

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 16:29	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 16:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/17/14 16:29*	*1*
Dibromofluoromethane	*100*		*81 - 121*		*03/17/14 16:29*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*03/17/14 16:29*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**190**	**B**	50	11	ug/L			03/19/14 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*105*		*70 - 130*		*03/19/14 20:07*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-3 (031314)

Lab Sample ID: 680-99454-11

Date Collected: 03/13/14 15:50

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 16:55	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 16:55	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 16:55	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 16:55	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 16:55	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 16:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 16:55	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 16:55	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 16:55	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 16:55	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 16:55	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 16:55	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 16:55	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 16:55	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 16:55	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 16:55	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 16:55	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 16:55	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 16:55	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 16:55	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 16:55	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 16:55	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 16:55	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 16:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 16:55	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 16:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 16:55	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 16:55	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 16:55	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 16:55	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-3 (031314)

Lab Sample ID: 680-99454-11

Date Collected: 03/13/14 15:50

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 16:55	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 16:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/17/14 16:55*	*1*
Dibromofluoromethane	*104*		*81 - 121*		*03/17/14 16:55*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/17/14 16:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**60**	**B**	50	11	ug/L			03/19/14 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*98*		*70 - 130*		*03/19/14 20:33*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**86**	**J B**	94	26	ug/L		03/17/14 16:13	03/18/14 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*50 - 150*	*03/17/14 16:13*	*03/18/14 19:06*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-22 (031314)

Lab Sample ID: 680-99454-12

Date Collected: 03/13/14 16:30

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 17:21	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 17:21	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 17:21	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 17:21	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 17:21	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 17:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 17:21	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 17:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 17:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 17:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 17:21	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 17:21	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 17:21	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 17:21	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 17:21	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 17:21	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 17:21	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 17:21	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 17:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 17:21	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 17:21	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 17:21	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 17:21	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 17:21	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 17:21	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 17:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 17:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 17:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 17:21	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 17:21	1

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-22 (031314)

Lab Sample ID: 680-99454-12

Date Collected: 03/13/14 16:30

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 17:21	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/17/14 17:21*	*1*
Dibromofluoromethane	*101*		*81 - 121*		*03/17/14 17:21*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/17/14 17:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**34**	**J B**	50	11	ug/L			03/19/14 20:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*97*		*70 - 130*		*03/19/14 20:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**6700**	**B**	190	53	ug/L		03/17/14 16:13	03/19/14 10:37	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*116*		*50 - 150*	*03/17/14 16:13*	*03/19/14 10:37*	*2*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 680-99454-13

Date Collected: 03/13/14 00:00

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/19/14 12:38	1
Benzene	1.0	U	1.0	0.34	ug/L			03/19/14 12:38	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Bromoform	5.0	U	5.0	0.71	ug/L			03/19/14 12:38	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/19/14 12:38	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/19/14 12:38	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/19/14 12:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/19/14 12:38	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/19/14 12:38	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/19/14 12:38	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/19/14 12:38	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/19/14 12:38	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/19/14 12:38	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/19/14 12:38	1
2-Hexanone	25	U	25	3.1	ug/L			03/19/14 12:38	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/19/14 12:38	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/19/14 12:38	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/19/14 12:38	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/19/14 12:38	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/19/14 12:38	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/19/14 12:38	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/19/14 12:38	1
Styrene	1.0	U	1.0	1.0	ug/L			03/19/14 12:38	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/19/14 12:38	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/19/14 12:38	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/19/14 12:38	1
Toluene	1.0	U	1.0	0.70	ug/L			03/19/14 12:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/19/14 12:38	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/19/14 12:38	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/19/14 12:38	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/19/14 12:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 680-99454-13

Date Collected: 03/13/14 00:00

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/19/14 12:38	1
Xylenes, Total	10	U	10	1.6	ug/L			03/19/14 12:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*78 - 118*		*03/19/14 12:38*	*1*
Dibromofluoromethane	*99*		*81 - 121*		*03/19/14 12:38*	*1*
Toluene-d8 (Surr)	*91*		*80 - 120*		*03/19/14 12:38*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: DUP-02 (031314)

Lab Sample ID: 680-99454-14

Date Collected: 03/13/14 12:00

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/17/14 17:46	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 17:46	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/17/14 17:46	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 17:46	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 17:46	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 17:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 17:46	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 17:46	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 17:46	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 17:46	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 17:46	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 17:46	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 17:46	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 17:46	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 17:46	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 17:46	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 17:46	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 17:46	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 17:46	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 17:46	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 17:46	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 17:46	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 17:46	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 17:46	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 17:46	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 17:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 17:46	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 17:46	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 17:46	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 17:46	1

Client Sample ID: DUP-02 (031314)

Lab Sample ID: 680-99454-14

Date Collected: 03/13/14 12:00

Matrix: Water

Date Received: 03/14/14 09:31

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 17:46	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*78 - 118*		*03/17/14 17:46*	*1*
Dibromofluoromethane	*106*		*81 - 121*		*03/17/14 17:46*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*03/17/14 17:46*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**43**	**J B**	50	11	ug/L			03/19/14 21:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*95*		*70 - 130*		*03/19/14 21:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**550**	**B**	110	29	ug/L		03/17/14 16:13	03/18/14 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*60*		*50 - 150*	*03/17/14 16:13*	*03/18/14 19:37*	*1*

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

Lab Sample ID: MB 400-210775/4
Matrix: Water
Analysis Batch: 210775

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	10	ug/L			03/17/14 08:01	1
Benzene	1.0	U	1.0	0.34	ug/L			03/17/14 08:01	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Bromoform	5.0	U	5.0	0.71	ug/L			03/17/14 08:01	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/17/14 08:01	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/17/14 08:01	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/17/14 08:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 08:01	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/17/14 08:01	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/17/14 08:01	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/17/14 08:01	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/17/14 08:01	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/17/14 08:01	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/17/14 08:01	1
2-Hexanone	25	U	25	3.1	ug/L			03/17/14 08:01	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/17/14 08:01	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/17/14 08:01	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/17/14 08:01	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/17/14 08:01	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/17/14 08:01	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/17/14 08:01	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/17/14 08:01	1
Styrene	1.0	U	1.0	1.0	ug/L			03/17/14 08:01	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/17/14 08:01	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/17/14 08:01	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/17/14 08:01	1
Toluene	1.0	U	1.0	0.70	ug/L			03/17/14 08:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/17/14 08:01	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/17/14 08:01	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/17/14 08:01	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1

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

Lab Sample ID: MB 400-210775/4
Matrix: Water
Analysis Batch: 210775

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/17/14 08:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/17/14 08:01	1
Xylenes, Total	10	U	10	1.6	ug/L			03/17/14 08:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/17/14 08:01*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/17/14 08:01*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/17/14 08:01*	*1*

Lab Sample ID: LCS 400-210775/1002
Matrix: Water
Analysis Batch: 210775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	201		ug/L		101	24 - 150
Benzene	50.0	48.0		ug/L		96	79 - 120
Bromodichloromethane	50.0	51.0		ug/L		102	75 - 127
Bromoform	50.0	62.1	*	ug/L		124	65 - 121
Carbon disulfide	50.0	44.9		ug/L		90	41 - 140
Carbon tetrachloride	50.0	56.7		ug/L		113	46 - 141
Chlorobenzene	50.0	51.5		ug/L		103	80 - 120
Chloroethane	50.0	69.5		ug/L		139	37 - 150
Chloroform	50.0	50.0		ug/L		100	73 - 122
Chloromethane	50.0	50.2		ug/L		100	49 - 141
cis-1,2-Dichloroethene	50.0	53.2		ug/L		106	78 - 122
cis-1,3-Dichloropropene	50.0	49.8		ug/L		100	70 - 122
Cyclohexane	50.0	48.7		ug/L		97	69 - 123
Dibromochloromethane	50.0	57.8		ug/L		116	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	58.1		ug/L		116	52 - 124
1,2-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 121
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	77 - 124
1,4-Dichlorobenzene	50.0	51.6		ug/L		103	79 - 120
Dichlorodifluoromethane	50.0	31.3		ug/L		63	27 - 144
1,1-Dichloroethane	50.0	53.7		ug/L		107	75 - 126
1,2-Dichloroethane	50.0	53.8		ug/L		108	69 - 128
1,1-Dichloroethene	50.0	54.0		ug/L		108	50 - 134
1,2-Dichloropropane	50.0	53.9		ug/L		108	77 - 126
Diisopropyl ether	50.0	51.6		ug/L		103	69 - 143
Ethylbenzene	50.0	50.7		ug/L		101	80 - 120
Ethylene Dibromide	50.0	51.9		ug/L		104	80 - 120
Ethyl tert-butyl ether	50.0	47.9		ug/L		96	58 - 142
2-Hexanone	200	212		ug/L		106	60 - 150
Isopropylbenzene	50.0	50.7		ug/L		101	76 - 120
Methyl acetate	250	260		ug/L		104	58 - 150
Methylcyclohexane	50.0	49.0		ug/L		98	72 - 121
Methylene Chloride	50.0	47.8		ug/L		96	70 - 130
Methyl Ethyl Ketone	200	192		ug/L		96	62 - 137

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

Lab Sample ID: LCS 400-210775/1002
Matrix: Water
Analysis Batch: 210775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
methyl isobutyl ketone	200	221		ug/L		110	63 - 150
Methyl tert-butyl ether	50.0	47.9		ug/L		96	70 - 124
Naphthalene	50.0	47.4		ug/L		95	45 - 131
Styrene	50.0	50.2		ug/L		100	79 - 124
Tert-amyl methyl ether	50.0	45.3		ug/L		91	65 - 125
tert-Butyl alcohol	500	628		ug/L		126	44 - 150
1,1,2,2-Tetrachloroethane	50.0	48.3		ug/L		97	68 - 132
Tetrachloroethene	50.0	51.6		ug/L		103	76 - 124
Toluene	50.0	49.7		ug/L		99	80 - 120
trans-1,2-Dichloroethene	50.0	51.3		ug/L		103	70 - 126
trans-1,3-Dichloropropene	50.0	52.5		ug/L		105	64 - 120
1,2,4-Trichlorobenzene	50.0	49.9		ug/L		100	69 - 128
1,1,1-Trichloroethane	50.0	51.0		ug/L		102	66 - 130
1,1,2-Trichloroethane	50.0	49.6		ug/L		99	80 - 120
Trichloroethene	50.0	53.3		ug/L		107	77 - 120
Trichlorofluoromethane	50.0	54.7		ug/L		109	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	55.7		ug/L		111	45 - 138
Vinyl chloride	50.0	54.6		ug/L		109	60 - 128
Xylenes, Total	100	102		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*78 - 118*
Dibromofluoromethane	*100*		*81 - 121*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: 680-99454-1 MS
Matrix: Water
Analysis Batch: 210775

Client Sample ID: NPS MW-14 (031314)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	25	U	200	138		ug/L		69	10 - 150
Benzene	1.0	U	50.0	47.8		ug/L		96	10 - 150
Bromodichloromethane	1.0	U	50.0	52.2		ug/L		104	61 - 133
Bromoform	5.0	U *	50.0	57.1		ug/L		114	54 - 125
Carbon disulfide	1.0	U	50.0	41.7		ug/L		83	10 - 150
Carbon tetrachloride	1.0	U	50.0	56.6		ug/L		113	40 - 138
Chlorobenzene	1.0	U	50.0	47.6		ug/L		95	10 - 150
Chloroethane	1.0	U	50.0	66.9		ug/L		134	38 - 150
Chloroform	1.0	U	50.0	50.8		ug/L		102	10 - 150
Chloromethane	1.0	U	50.0	46.8		ug/L		94	26 - 150
cis-1,2-Dichloroethene	1.0	U	50.0	53.7		ug/L		107	10 - 150
cis-1,3-Dichloropropene	5.0	U	50.0	49.7		ug/L		99	52 - 130
Cyclohexane	1.0	U	50.0	47.6		ug/L		95	10 - 150
Dibromochloromethane	1.0	U	50.0	55.0		ug/L		110	50 - 130
1,2-Dibromo-3-Chloropropane	5.0	U	50.0	46.8		ug/L		94	50 - 133
1,2-Dichlorobenzene	1.0	U	50.0	45.5		ug/L		91	10 - 150
1,3-Dichlorobenzene	1.0	U	50.0	44.5		ug/L		89	25 - 136

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

Lab Sample ID: 680-99454-1 MS
Matrix: Water
Analysis Batch: 210775

Client Sample ID: NPS MW-14 (031314)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	1.0	U	50.0	44.0		ug/L		88	10 - 150
Dichlorodifluoromethane	1.0	U	50.0	26.4		ug/L		53	10 - 150
1,1-Dichloroethane	1.0	U	50.0	54.3		ug/L		109	10 - 150
1,2-Dichloroethane	1.0	U	50.0	53.6		ug/L		107	10 - 150
1,1-Dichloroethene	1.0	U	50.0	52.5		ug/L		105	10 - 150
1,2-Dichloropropane	1.0	U	50.0	53.4		ug/L		107	65 - 132
Diisopropyl ether	1.0	U	50.0	52.6		ug/L		105	10 - 150
Ethylbenzene	1.0	U	50.0	46.4		ug/L		93	10 - 150
Ethylene Dibromide	1.0	U	50.0	48.4		ug/L		97	70 - 125
Ethyl tert-butyl ether	1.0	U	50.0	48.5		ug/L		97	49 - 150
2-Hexanone	25	U	200	171		ug/L		85	24 - 150
Isopropylbenzene	1.0	U	50.0	44.7		ug/L		89	10 - 150
Methyl acetate	5.0	U	250	230		ug/L		92	10 - 150
Methylcyclohexane	1.0	U	50.0	47.9		ug/L		96	10 - 150
Methylene Chloride	5.0	U	50.0	51.1		ug/L		102	10 - 150
Methyl Ethyl Ketone	25	U	200	159		ug/L		80	10 - 150
methyl isobutyl ketone	25	U	200	194		ug/L		97	20 - 150
Methyl tert-butyl ether	1.0	U	50.0	45.8		ug/L		92	10 - 150
Naphthalene	1.0	U	50.0	40.1		ug/L		80	10 - 150
Styrene	1.0	U	50.0	46.6		ug/L		93	24 - 147
Tert-amyl methyl ether	1.0	U	50.0	40.8		ug/L		82	10 - 150
tert-Butyl alcohol	10	U	500	760	F1	ug/L		152	10 - 150
1,1,2,2-Tetrachloroethane	1.0	U	50.0	43.7		ug/L		87	52 - 148
Tetrachloroethene	1.0	U	50.0	46.2		ug/L		92	10 - 150
Toluene	1.0	U	50.0	46.7		ug/L		93	10 - 150
trans-1,2-Dichloroethene	1.0	U	50.0	50.8		ug/L		102	66 - 126
trans-1,3-Dichloropropene	5.0	U	50.0	49.0		ug/L		98	45 - 128
1,2,4-Trichlorobenzene	1.0	U	50.0	41.3		ug/L		83	20 - 139
1,1,1-Trichloroethane	1.0	U	50.0	52.2		ug/L		104	60 - 131
1,1,2-Trichloroethane	5.0	U	50.0	47.7		ug/L		95	68 - 127
Trichloroethene	1.0	U	50.0	52.6		ug/L		105	10 - 150
Trichlorofluoromethane	1.0	U	50.0	52.3		ug/L		105	29 - 144
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	50.0	55.5		ug/L		111	41 - 136
Vinyl chloride	1.0	U	50.0	51.3		ug/L		103	46 - 136
Xylenes, Total	10	U	100	92.0		ug/L		92	10 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*78 - 118*
Dibromofluoromethane	*102*		*81 - 121*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: 680-99454-1 MSD
Matrix: Water
Analysis Batch: 210775

Client Sample ID: NPS MW-14 (031314)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	25	U	200	146		ug/L		73	10 - 150	6	22

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

Lab Sample ID: 680-99454-1 MSD
Matrix: Water
Analysis Batch: 210775

Client Sample ID: NPS MW-14 (031314)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	50.0	47.6		ug/L		95	10 - 150	1	19
Bromodichloromethane	1.0	U	50.0	50.7		ug/L		101	61 - 133	3	19
Bromoform	5.0	U *	50.0	56.7		ug/L		113	54 - 125	1	19
Carbon disulfide	1.0	U	50.0	41.7		ug/L		83	10 - 150	0	23
Carbon tetrachloride	1.0	U	50.0	56.3		ug/L		113	40 - 138	1	21
Chlorobenzene	1.0	U	50.0	46.5		ug/L		93	10 - 150	2	30
Chloroethane	1.0	U	50.0	67.6		ug/L		135	38 - 150	1	23
Chloroform	1.0	U	50.0	50.1		ug/L		100	10 - 150	2	18
Chloromethane	1.0	U	50.0	48.3		ug/L		97	26 - 150	3	23
cis-1,2-Dichloroethene	1.0	U	50.0	53.3		ug/L		107	10 - 150	1	20
cis-1,3-Dichloropropene	5.0	U	50.0	47.8		ug/L		96	52 - 130	4	20
Cyclohexane	1.0	U	50.0	48.2		ug/L		96	10 - 150	1	20
Dibromochloromethane	1.0	U	50.0	55.0		ug/L		110	50 - 130	0	21
1,2-Dibromo-3-Chloropropane	5.0	U	50.0	49.0		ug/L		98	50 - 133	5	30
1,2-Dichlorobenzene	1.0	U	50.0	41.9		ug/L		84	10 - 150	8	38
1,3-Dichlorobenzene	1.0	U	50.0	40.6		ug/L		81	25 - 136	9	44
1,4-Dichlorobenzene	1.0	U	50.0	40.0		ug/L		80	10 - 150	9	45
Dichlorodifluoromethane	1.0	U	50.0	27.6		ug/L		55	10 - 150	5	23
1,1-Dichloroethane	1.0	U	50.0	54.0		ug/L		108	10 - 150	1	18
1,2-Dichloroethane	1.0	U	50.0	53.7		ug/L		107	10 - 150	0	19
1,1-Dichloroethene	1.0	U	50.0	53.4		ug/L		107	10 - 150	2	19
1,2-Dichloropropane	1.0	U	50.0	53.2		ug/L		106	65 - 132	0	18
Diisopropyl ether	1.0	U	50.0	51.8		ug/L		104	10 - 150	1	24
Ethylbenzene	1.0	U	50.0	45.3		ug/L		91	10 - 150	2	40
Ethylene Dibromide	1.0	U	50.0	47.9		ug/L		96	70 - 125	1	21
Ethyl tert-butyl ether	1.0	U	50.0	47.7		ug/L		95	49 - 150	2	25
2-Hexanone	25	U	200	177		ug/L		89	24 - 150	4	24
Isopropylbenzene	1.0	U	50.0	43.8		ug/L		88	10 - 150	2	46
Methyl acetate	5.0	U	250	235		ug/L		94	10 - 150	2	23
Methylcyclohexane	1.0	U	50.0	48.8		ug/L		98	10 - 150	2	22
Methylene Chloride	5.0	U	50.0	49.6		ug/L		99	10 - 150	3	18
Methyl Ethyl Ketone	25	U	200	154		ug/L		77	10 - 150	3	21
methyl isobutyl ketone	25	U	200	198		ug/L		99	20 - 150	2	20
Methyl tert-butyl ether	1.0	U	50.0	45.7		ug/L		91	10 - 150	0	18
Naphthalene	1.0	U	50.0	40.0		ug/L		80	10 - 150	0	53
Styrene	1.0	U	50.0	44.3		ug/L		89	24 - 147	5	40
Tert-amyl methyl ether	1.0	U	50.0	44.9		ug/L		90	10 - 150	9	19
tert-Butyl alcohol	10	U	500	838	F1	ug/L		168	10 - 150	10	32
1,1,2,2-Tetrachloroethane	1.0	U	50.0	44.0		ug/L		88	52 - 148	1	20
Tetrachloroethene	1.0	U	50.0	47.1		ug/L		94	10 - 150	2	35
Toluene	1.0	U	50.0	47.4		ug/L		95	10 - 150	2	26
trans-1,2-Dichloroethene	1.0	U	50.0	51.0		ug/L		102	66 - 126	0	19
trans-1,3-Dichloropropene	5.0	U	50.0	49.5		ug/L		99	45 - 128	1	20
1,2,4-Trichlorobenzene	1.0	U	50.0	36.3		ug/L		73	20 - 139	13	44
1,1,1-Trichloroethane	1.0	U	50.0	51.8		ug/L		104	60 - 131	1	20
1,1,2-Trichloroethane	5.0	U	50.0	47.6		ug/L		95	68 - 127	0	19
Trichloroethene	1.0	U	50.0	52.2		ug/L		104	10 - 150	1	22
Trichlorofluoromethane	1.0	U	50.0	55.4		ug/L		111	29 - 144	6	20

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

Lab Sample ID: 680-99454-1 MSD
Matrix: Water
Analysis Batch: 210775

Client Sample ID: NPS MW-14 (031314)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	50.0	56.2		ug/L		112	41 - 136	1	20
Vinyl chloride	1.0	U	50.0	53.2		ug/L		106	46 - 136	4	20
Xylenes, Total	10	U	100	89.9		ug/L		90	10 - 150	2	41

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*78 - 118*
Dibromofluoromethane	*100*		*81 - 121*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 400-211075/4
Matrix: Water
Analysis Batch: 211075

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	10	ug/L			03/19/14 10:35	1
Benzene	1.0	U	1.0	0.34	ug/L			03/19/14 10:35	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Bromoform	5.0	U	5.0	0.71	ug/L			03/19/14 10:35	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/19/14 10:35	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/19/14 10:35	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/19/14 10:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/19/14 10:35	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/19/14 10:35	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/19/14 10:35	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/19/14 10:35	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/19/14 10:35	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/19/14 10:35	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/19/14 10:35	1
2-Hexanone	25	U	25	3.1	ug/L			03/19/14 10:35	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/19/14 10:35	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/19/14 10:35	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/19/14 10:35	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/19/14 10:35	1

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

Lab Sample ID: MB 400-211075/4
Matrix: Water
Analysis Batch: 211075

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/19/14 10:35	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/19/14 10:35	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/19/14 10:35	1
Styrene	1.0	U	1.0	1.0	ug/L			03/19/14 10:35	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/19/14 10:35	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/19/14 10:35	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/19/14 10:35	1
Toluene	1.0	U	1.0	0.70	ug/L			03/19/14 10:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/19/14 10:35	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/19/14 10:35	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/19/14 10:35	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/19/14 10:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/19/14 10:35	1
Xylenes, Total	10	U	10	1.6	ug/L			03/19/14 10:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*78 - 118*		*03/19/14 10:35*	*1*
Dibromofluoromethane	*98*		*81 - 121*		*03/19/14 10:35*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*03/19/14 10:35*	*1*

Lab Sample ID: LCS 400-211075/1002
Matrix: Water
Analysis Batch: 211075

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	234		ug/L		117	24 - 150
Benzene	50.0	54.1		ug/L		108	79 - 120
Bromodichloromethane	50.0	61.6		ug/L		123	75 - 127
Bromoform	50.0	46.9		ug/L		94	65 - 121
Carbon disulfide	50.0	57.5		ug/L		115	41 - 140
Carbon tetrachloride	50.0	63.0		ug/L		126	46 - 141
Chlorobenzene	50.0	48.8		ug/L		98	80 - 120
Chloroethane	50.0	52.7		ug/L		105	37 - 150
Chloroform	50.0	58.0		ug/L		116	73 - 122
Chloromethane	50.0	52.4		ug/L		105	49 - 141
cis-1,2-Dichloroethene	50.0	57.5		ug/L		115	78 - 122
cis-1,3-Dichloropropene	50.0	53.2		ug/L		106	70 - 122
Cyclohexane	50.0	53.7		ug/L		107	69 - 123
Dibromochloromethane	50.0	49.1		ug/L		98	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	45.4		ug/L		91	52 - 124
1,2-Dichlorobenzene	50.0	47.0		ug/L		94	80 - 121
1,3-Dichlorobenzene	50.0	47.6		ug/L		95	77 - 124
1,4-Dichlorobenzene	50.0	46.9		ug/L		94	79 - 120

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

Lab Sample ID: LCS 400-211075/1002
Matrix: Water
Analysis Batch: 211075

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	50.0	52.8		ug/L		106	27 - 144
1,1-Dichloroethane	50.0	56.5		ug/L		113	75 - 126
1,2-Dichloroethane	50.0	61.3		ug/L		123	69 - 128
1,1-Dichloroethene	50.0	51.3		ug/L		103	50 - 134
1,2-Dichloropropane	50.0	55.1		ug/L		110	77 - 126
Diisopropyl ether	50.0	57.4		ug/L		115	69 - 143
Ethylbenzene	50.0	50.6		ug/L		101	80 - 120
Ethylene Dibromide	50.0	52.3		ug/L		105	80 - 120
Ethyl tert-butyl ether	50.0	57.0		ug/L		114	58 - 142
2-Hexanone	200	216		ug/L		108	60 - 150
Isopropylbenzene	50.0	50.9		ug/L		102	76 - 120
Methyl acetate	250	287		ug/L		115	58 - 150
Methylcyclohexane	50.0	55.0		ug/L		110	72 - 121
Methylene Chloride	50.0	54.5		ug/L		109	70 - 130
Methyl Ethyl Ketone	200	228		ug/L		114	62 - 137
methyl isobutyl ketone	200	237		ug/L		119	63 - 150
Methyl tert-butyl ether	50.0	57.7		ug/L		115	70 - 124
Naphthalene	50.0	47.4		ug/L		95	45 - 131
Styrene	50.0	51.2		ug/L		102	79 - 124
Tert-amyl methyl ether	50.0	57.0		ug/L		114	65 - 125
tert-Butyl alcohol	500	537		ug/L		107	44 - 150
1,1,2,2-Tetrachloroethane	50.0	50.1		ug/L		100	68 - 132
Tetrachloroethene	50.0	48.5		ug/L		97	76 - 124
Toluene	50.0	48.8		ug/L		98	80 - 120
trans-1,2-Dichloroethene	50.0	55.8		ug/L		112	70 - 126
trans-1,3-Dichloropropene	50.0	47.6		ug/L		95	64 - 120
1,2,4-Trichlorobenzene	50.0	47.1		ug/L		94	69 - 128
1,1,1-Trichloroethane	50.0	61.9		ug/L		124	66 - 130
1,1,2-Trichloroethane	50.0	50.8		ug/L		102	80 - 120
Trichloroethene	50.0	55.4		ug/L		111	77 - 120
Trichlorofluoromethane	50.0	52.8		ug/L		106	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.4		ug/L		105	45 - 138
Vinyl chloride	50.0	51.1		ug/L		102	60 - 128
Xylenes, Total	100	103		ug/L		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*78 - 118*
Dibromofluoromethane	*105*		*81 - 121*
Toluene-d8 (Surr)	*93*		*80 - 120*

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

Lab Sample ID: MB 680-320336/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	13.0	J	50	11	ug/L			03/19/14 13:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*99*		*70 - 130*		*03/19/14 13:20*	*1*

Lab Sample ID: LCS 680-320336/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	200	205		ug/L		102	70 - 148

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*89*		*70 - 130*

Lab Sample ID: LCSD 680-320336/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	200	198		ug/L		99	70 - 148	3	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene	*97*		*70 - 130*

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

Lab Sample ID: MB 490-148239/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 148448 — **Prep Batch: 148239**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	34.3	J	100	28	ug/L		03/17/14 16:13	03/18/14 14:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*77*		*50 - 150*	*03/17/14 16:13*	*03/18/14 14:56*	*1*

Lab Sample ID: LCS 490-148239/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 148448 — **Prep Batch: 148239**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	1000	741		ug/L		74	46 - 132

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

Lab Sample ID: LCS 490-148239/2-A
Matrix: Water
Analysis Batch: 148448

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 148239

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*82*		*50 - 150*

Lab Sample ID: LCSD 490-148239/3-A
Matrix: Water
Analysis Batch: 148448

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 148239

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]			1000	750		ug/L		75	46 - 132	1	31

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*77*		*50 - 150*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

GC/MS VOA

Analysis Batch: 210775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99454-1	NPS MW-14 (031314)	Total/NA	Water	8260B	
680-99454-1 MS	NPS MW-14 (031314)	Total/NA	Water	8260B	
680-99454-1 MSD	NPS MW-14 (031314)	Total/NA	Water	8260B	
680-99454-2	NPS MW-13 (031314)	Total/NA	Water	8260B	
680-99454-3	NPS MW-5 (031314)	Total/NA	Water	8260B	
680-99454-4	NPS MW-1 (031314)	Total/NA	Water	8260B	
680-99454-5	NPS MW-2 (031314)	Total/NA	Water	8260B	
680-99454-6	NPS MW-18 (031314)	Total/NA	Water	8260B	
680-99454-7	NPS MW-16 (031314)	Total/NA	Water	8260B	
680-99454-8	MW-43 (031314)	Total/NA	Water	8260B	
680-99454-9	NPS MW-4 (031314)	Total/NA	Water	8260B	
680-99454-10	MW-6R (031314)	Total/NA	Water	8260B	
680-99454-11	MW-3 (031314)	Total/NA	Water	8260B	
680-99454-12	MW-22 (031314)	Total/NA	Water	8260B	
680-99454-14	DUP-02 (031314)	Total/NA	Water	8260B	
LCS 400-210775/1002	Lab Control Sample	Total/NA	Water	8260B	
MB 400-210775/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 211075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99454-13	TRIP BLANK	Total/NA	Water	8260B	
LCS 400-211075/1002	Lab Control Sample	Total/NA	Water	8260B	
MB 400-211075/4	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 320336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99454-1	NPS MW-14 (031314)	Total/NA	Water	8015C	
680-99454-2	NPS MW-13 (031314)	Total/NA	Water	8015C	
680-99454-3	NPS MW-5 (031314)	Total/NA	Water	8015C	
680-99454-4	NPS MW-1 (031314)	Total/NA	Water	8015C	
680-99454-5	NPS MW-2 (031314)	Total/NA	Water	8015C	
680-99454-6	NPS MW-18 (031314)	Total/NA	Water	8015C	
680-99454-7	NPS MW-16 (031314)	Total/NA	Water	8015C	
680-99454-8	MW-43 (031314)	Total/NA	Water	8015C	
680-99454-9	NPS MW-4 (031314)	Total/NA	Water	8015C	
680-99454-10	MW-6R (031314)	Total/NA	Water	8015C	
680-99454-11	MW-3 (031314)	Total/NA	Water	8015C	
680-99454-12	MW-22 (031314)	Total/NA	Water	8015C	
680-99454-14	DUP-02 (031314)	Total/NA	Water	8015C	
LCS 680-320336/5	Lab Control Sample	Total/NA	Water	8015C	
LCSD 680-320336/6	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 680-320336/7	Method Blank	Total/NA	Water	8015C	

GC Semi VOA

Prep Batch: 148239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99454-1	NPS MW-14 (031314)	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 148239 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99454-2	NPS MW-13 (031314)	Total/NA	Water	3510C	
680-99454-3	NPS MW-5 (031314)	Total/NA	Water	3510C	
680-99454-4	NPS MW-1 (031314)	Total/NA	Water	3510C	
680-99454-5	NPS MW-2 (031314)	Total/NA	Water	3510C	
680-99454-6	NPS MW-18 (031314)	Total/NA	Water	3510C	
680-99454-7	NPS MW-16 (031314)	Total/NA	Water	3510C	
680-99454-8	MW-43 (031314)	Total/NA	Water	3510C	
680-99454-9	NPS MW-4 (031314)	Total/NA	Water	3510C	
680-99454-11	MW-3 (031314)	Total/NA	Water	3510C	
680-99454-12	MW-22 (031314)	Total/NA	Water	3510C	
680-99454-14	DUP-02 (031314)	Total/NA	Water	3510C	
LCS 490-148239/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 490-148239/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 490-148239/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 148448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99454-1	NPS MW-14 (031314)	Total/NA	Water	8015C	148239
680-99454-2	NPS MW-13 (031314)	Total/NA	Water	8015C	148239
680-99454-3	NPS MW-5 (031314)	Total/NA	Water	8015C	148239
680-99454-4	NPS MW-1 (031314)	Total/NA	Water	8015C	148239
680-99454-5	NPS MW-2 (031314)	Total/NA	Water	8015C	148239
680-99454-6	NPS MW-18 (031314)	Total/NA	Water	8015C	148239
680-99454-7	NPS MW-16 (031314)	Total/NA	Water	8015C	148239
680-99454-8	MW-43 (031314)	Total/NA	Water	8015C	148239
680-99454-9	NPS MW-4 (031314)	Total/NA	Water	8015C	148239
680-99454-11	MW-3 (031314)	Total/NA	Water	8015C	148239
680-99454-12	MW-22 (031314)	Total/NA	Water	8015C	148239
680-99454-14	DUP-02 (031314)	Total/NA	Water	8015C	148239
LCS 490-148239/2-A	Lab Control Sample	Total/NA	Water	8015C	148239
LCSD 490-148239/3-A	Lab Control Sample Dup	Total/NA	Water	8015C	148239
MB 490-148239/1-A	Method Blank	Total/NA	Water	8015C	148239

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-14 (031314)

Lab Sample ID: 680-99454-1
Date Collected: 03/13/14 09:40
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 08:27	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 16:13	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1040 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1040 mL	1 mL	148448	03/18/14 16:15	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: NPS MW-13 (031314)

Lab Sample ID: 680-99454-2
Date Collected: 03/13/14 10:10
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 13:01	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 16:39	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	148448	03/18/14 16:30	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: NPS MW-5 (031314)

Lab Sample ID: 680-99454-3
Date Collected: 03/13/14 10:50
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 13:27	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 17:05	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1050 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1050 mL	1 mL	148448	03/18/14 16:46	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: NPS MW-1 (031314)

Lab Sample ID: 680-99454-4
Date Collected: 03/13/14 11:15
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 13:53	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 17:33	TAR	TAL SAV
	Instrument ID: CVGWFID1									

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: NPS MW-1 (031314)

Lab Sample ID: 680-99454-4
Date Collected: 03/13/14 11:15
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	148448	03/18/14 17:02	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: NPS MW-2 (031314)

Lab Sample ID: 680-99454-5
Date Collected: 03/13/14 11:25
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 14:19	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 17:59	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1050 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1050 mL	1 mL	148448	03/18/14 17:17	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: NPS MW-18 (031314)

Lab Sample ID: 680-99454-6
Date Collected: 03/13/14 12:45
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 14:45	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 18:25	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	148448	03/18/14 17:33	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: NPS MW-16 (031314)

Lab Sample ID: 680-99454-7
Date Collected: 03/13/14 13:15
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 15:11	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 18:50	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	148448	03/18/14 17:49	JPS	TAL NSH
	Instrument ID: HP44									

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-43 (031314)

Lab Sample ID: 680-99454-8

Date Collected: 03/13/14 14:00
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 15:37	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 19:16	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	148448	03/18/14 18:04	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: NPS MW-4 (031314)

Lab Sample ID: 680-99454-9

Date Collected: 03/13/14 14:45
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 16:03	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 19:42	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		2	1060 mL	1 mL	148448	03/19/14 10:21	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: MW-6R (031314)

Lab Sample ID: 680-99454-10

Date Collected: 03/13/14 14:50
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 16:29	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 20:07	TAR	TAL SAV
	Instrument ID: CVGWFID1									

Client Sample ID: MW-3 (031314)

Lab Sample ID: 680-99454-11

Date Collected: 03/13/14 15:50
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 16:55	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 20:33	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	148448	03/18/14 19:06	JPS	TAL NSH
	Instrument ID: HP44									

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Client Sample ID: MW-22 (031314)

Lab Sample ID: 680-99454-12

Date Collected: 03/13/14 16:30
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 17:21	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 20:59	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		2	1060 mL	1 mL	148448	03/19/14 10:37	JPS	TAL NSH
	Instrument ID: HP44									

Client Sample ID: TRIP BLANK

Lab Sample ID: 680-99454-13

Date Collected: 03/13/14 00:00
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211075	03/19/14 12:38	CLN	TAL PEN
	Instrument ID: CH_TAN									

Client Sample ID: DUP-02 (031314)

Lab Sample ID: 680-99454-14

Date Collected: 03/13/14 12:00
Matrix: Water
Date Received: 03/14/14 09:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	210775	03/17/14 17:46	WPD	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 21:27	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			950 mL	1 mL	148239	03/17/14 16:13	RCH	TAL NSH
Total/NA	Analysis	8015C		1	950 mL	1 mL	148448	03/18/14 19:37	JPS	TAL NSH
	Instrument ID: HP44									

Laboratory References:

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

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

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

TEST AMERICA SAVANNAH
5102 LA ROCHE AVE
SAVANNAH, GA 31404

Revised - LMH 3-14-14

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: LAUREN LAMP	Lab PM: Harvey, Lisa M	Carrier Tracking No(s):
Client Contact: ~~Mr. Scott Stout~~ JOSH WILSON	Phone: 571 375.5180	E-Mail: lisa.harvey@testamericainc.com	COC No: 680-54866-24042.1
Company: ~~Newfields Companies LLC~~ ARCADIS U.S. INC			Page: ~~Page 1 of 4~~ PG 1 OF 1
Address: ~~200 Ledgewood Pl., Ste. 305~~ 1114 BENFIELD BLVD. SUITE A	Due Date Requested: —		Job #:
City: ~~Rockland~~ MILLERSVILLE	TAT Requested (days): CSXT STANDARD		
State, Zip: ~~MA, 02370~~ MD, 21108	~~PO#:~~ LWON #: ENV00000035683		
Phone:	~~WO#:~~ CSXT #: R9415381		
Email: ~~cstout@newfields.com~~ joshua.wilson@arcadis-us.com	Project #: ~~68001480~~ MD000843.0010.00004		
Project Name: CSX C&O Canal Brunswick, MD	SSOW#: —		
Site: BRUNSWICK RAIL YARD			

Analysis Requested

Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA; M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) TCL 8260 + Oxygenates	8015C_DRO - Diesel Range Organics (C10-C28)	8015C_GRO - GRO - Gasoline Range Organics	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	A		
NPS MW-14 (031314)	3.13.14	0940	G	Water	N	N	X	X	X		
NPS MW-13 (031314)		1010	G	Water	N	N	X	X	X		
NPS MW-5 (031314)		1050	G	Water	N	N	X	X	X		
NPS MW-1 (031314)		1115	G	Water	N	N	X	X	X		
NPS MW-2 (031314)		1125	G	Water	N	N	X	X	X		
NPS MW-18 (031314)	3.13.14	1245	G	Water	N	N	X	X	X		
NPS MW-16 (031314)		1315	G	Water	N	N	X	X	X		
MW-43 (031314)		1400	G	Water	N	N	X	X	X		
NPS MW-4 (031314)		1445	G	Water	N	N	X	X	X		
MW-6R (031314)		1450	G	Water	N	N	X	X	X		
MW-3 (031314)		1550	G	Water	N	N	X	X	X		
MW-22 (031314)		1630	G	Water	N	N	X	X	X		
TRIP BLANK	3.13.14	—	G				X				
Possible Hazard Identification: Dup 02 (031314)	3-13-14	12:00	G	☆							

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Special Instructions/QC Requirements:

Deliverable Requested: I, II, III, IV, Other (specify)

680-99454 Chain of Custody

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: LAUREN LAMP	Date/Time: 3.12.14 / 1030	Company: ARCADIS	Received by:	Date/Time: 03-14-14 0931	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: △ Yes △ No	Custody Seal No.: ☆ Added Dup 02 (031314) to COC - LMH 3-14-14		Cooler Temperature(s) °C and Other Remarks: 4.4c / 3.6c / 4.4c			

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99454-1

Login Number: 99454
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Sample -14 (DUP) received but not listed on the COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	-2 rec 2 vials broken / -10 rec 2 L HCL Broken)
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99454-1

Login Number: 99454
List Number: 1
Creator: Armstrong, Daniel

List Source: TestAmerica Nashville
List Creation: 03/15/14 02:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8C, 1.4C, 1.3C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99454-1

Login Number: 99454
List Number: 1
Creator: Ricketts, Erin

List Source: TestAmerica Pensacola
List Creation: 03/15/14 11:51 AM

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	2.7°C IR #6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99454-1

Login Number: 99454
List Number: 2
Creator: Crawford, Lauren E

List Source: TestAmerica Pensacola
List Creation: 03/18/14 10:48 AM

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	3.5°C IR-6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	250	12-31-14

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14 *
California	NELAP	9	1168CA	10-31-14
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-14
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-14
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14 *
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-14
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-14
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14 *
North Carolina DENR	State Program	4	387	12-31-14
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-14
South Carolina	State Program	4	84009 (002)	02-23-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-15
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-15

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99454-1

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	09-01-14
Florida	NELAP	4	E81010	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200041	10-09-14
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-14
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-14
Michigan	State Program	5	9912	05-04-14
New Jersey	NELAP	2	FL006	06-30-14
North Carolina DENR	State Program	4	314	12-31-14
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-15
Rhode Island	State Program	1	LAO00307	12-30-14
South Carolina	State Program	4	96026	06-30-14
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-14
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

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: 680-99540-1
Client Project/Site: CSX Brunswick, MD Rail Yard

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

Attn: Ms. Megan Kellner

Authorized for release by:
3/30/2014 1:46:10 PM

Lisa Harvey, Project Manager II
(912)354-7858 e.3221
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Job ID: 680-99540-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX Brunswick, MD Rail Yard
Report Number: 680-99540-1

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 03/18/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.8 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples MW-51 (031414) (680-99540-1), MW-29 (031414) (680-99540-2), MW-24 (031414) (680-99540-3) and TRIP BLANK (031414) (680-99540-4) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

GASOLINE RANGE ORGANICS (GRO)

Samples MW-51 (031414) (680-99540-1), MW-29 (031414) (680-99540-2) and MW-24 (031414) (680-99540-3) were analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015C.

Gasoline Range Organics (GRO)-C6-C10 was detected in method blank MB 680-320336/7 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

DIESEL RANGE ORGANICS (DRO)

Samples MW-51 (031414) (680-99540-1), MW-29 (031414) (680-99540-2) and MW-24 (031414) (680-99540-3) were analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-99540-1	MW-51 (031414)	Water	03/14/14 09:25	03/18/14 09:54
680-99540-2	MW-29 (031414)	Water	03/14/14 10:00	03/18/14 09:54
680-99540-3	MW-24 (031414)	Water	03/14/14 10:15	03/18/14 09:54
680-99540-4	TRIP BLANK (031414)	Water	03/14/14 00:00	03/18/14 09:54

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

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

Protocol References:

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

Laboratory References:

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

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

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

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Qualifiers

GC/MS VOA

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

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

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

Glossary

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Client Sample ID: MW-51 (031414)

Lab Sample ID: 680-99540-1

Date Collected: 03/14/14 09:25

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 13:08	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 13:08	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 13:08	1
Methyl tert-butyl ether	**3.4**		1.0	0.74	ug/L			03/21/14 13:08	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 13:08	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 13:08	1
tert-Butyl alcohol	**21**		10	4.9	ug/L			03/21/14 13:08	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 13:08	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 13:08*	*1*
Dibromofluoromethane	*107*		*81 - 121*		*03/21/14 13:08*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/21/14 13:08*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**22**	**J B**	50	11	ug/L			03/19/14 21:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*98*		*70 - 130*		*03/19/14 21:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**85**	**J**	94	26	ug/L		03/21/14 07:30	03/21/14 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*60*		*50 - 150*	*03/21/14 07:30*	*03/21/14 15:45*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Client Sample ID: MW-29 (031414)

Lab Sample ID: 680-99540-2

Date Collected: 03/14/14 10:00

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 13:32	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 13:32	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 13:32	1
Methyl tert-butyl ether	**1.5**		1.0	0.74	ug/L			03/21/14 13:32	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 13:32	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 13:32	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 13:32	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 13:32	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 13:32*	*1*
Dibromofluoromethane	*107*		*81 - 121*		*03/21/14 13:32*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/21/14 13:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**41**	**J B**	50	11	ug/L			03/19/14 22:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*100*		*70 - 130*		*03/19/14 22:19*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**4700**		94	26	ug/L		03/21/14 07:30	03/21/14 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*94*		*50 - 150*	*03/21/14 07:30*	*03/21/14 16:01*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Client Sample ID: MW-24 (031414)

Lab Sample ID: 680-99540-3

Date Collected: 03/14/14 10:15

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 13:57	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 13:57	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 13:57	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/21/14 13:57	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 13:57	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 13:57	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 13:57	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 13:57	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/21/14 13:57*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/21/14 13:57*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/21/14 13:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	**47**	**J B**	50	11	ug/L			03/19/14 22:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*101*		*70 - 130*		*03/19/14 22:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**340**		95	27	ug/L		03/21/14 07:30	03/21/14 16:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*63*		*50 - 150*	*03/21/14 07:30*	*03/21/14 16:17*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Client Sample ID: TRIP BLANK (031414)

Lab Sample ID: 680-99540-4

Date Collected: 03/14/14 00:00

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 14:23	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 14:23	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 14:23	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/21/14 14:23	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 14:23	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 14:23	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 14:23	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 14:23	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 14:23*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/21/14 14:23*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/21/14 14:23*	*1*

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

Lab Sample ID: MB 400-211323/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 211323

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 08:11	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 08:11	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 08:11	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/21/14 08:11	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 08:11	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 08:11	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 08:11	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 08:11	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 08:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 08:11*	*1*
Dibromofluoromethane	*105*		*81 - 121*		*03/21/14 08:11*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/21/14 08:11*	*1*

Lab Sample ID: LCS 400-211323/1002 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 211323

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.4		ug/L		97	79 - 120
Diisopropyl ether	50.0	52.6		ug/L		105	69 - 143
Ethylbenzene	50.0	49.6		ug/L		99	80 - 120
Ethyl tert-butyl ether	50.0	48.4		ug/L		97	58 - 142
Methyl tert-butyl ether	50.0	48.5		ug/L		97	70 - 124
Naphthalene	50.0	44.8		ug/L		90	45 - 131
Tert-amyl methyl ether	50.0	46.1		ug/L		92	65 - 125
tert-Butyl alcohol	500	677		ug/L		135	44 - 150
Toluene	50.0	47.2		ug/L		94	80 - 120
Xylenes, Total	100	100		ug/L		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*78 - 118*
Dibromofluoromethane	*104*		*81 - 121*
Toluene-d8 (Surr)	*96*		*80 - 120*

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

Lab Sample ID: MB 680-320336/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	13.0	J	50	11	ug/L			03/19/14 13:20	1

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

Lab Sample ID: MB 680-320336/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	99		70 - 130		03/19/14 13:20	1

Lab Sample ID: LCS 680-320336/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	200	205		ug/L		102	70 - 148

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	89		70 - 130

Lab Sample ID: LCSD 680-320336/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 320336

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	200	198		ug/L		99	70 - 148	3	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	97		70 - 130

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

Lab Sample ID: MB 490-149206/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 149326 — **Prep Batch: 149206**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	100	U	100	28	ug/L		03/21/14 07:30	03/21/14 15:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	72		50 - 150	03/21/14 07:30	03/21/14 15:14	1

Lab Sample ID: LCS 490-149206/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 149326 — **Prep Batch: 149206**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	1000	821		ug/L		82	46 - 132

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	79		50 - 150

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

GC/MS VOA

Analysis Batch: 211323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99540-1	MW-51 (031414)	Total/NA	Water	8260B	
680-99540-2	MW-29 (031414)	Total/NA	Water	8260B	
680-99540-3	MW-24 (031414)	Total/NA	Water	8260B	
680-99540-4	TRIP BLANK (031414)	Total/NA	Water	8260B	
LCS 400-211323/1002	Lab Control Sample	Total/NA	Water	8260B	
MB 400-211323/4	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 320336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99540-1	MW-51 (031414)	Total/NA	Water	8015C	
680-99540-2	MW-29 (031414)	Total/NA	Water	8015C	
680-99540-3	MW-24 (031414)	Total/NA	Water	8015C	
LCS 680-320336/5	Lab Control Sample	Total/NA	Water	8015C	
LCSD 680-320336/6	Lab Control Sample Dup	Total/NA	Water	8015C	
MB 680-320336/7	Method Blank	Total/NA	Water	8015C	

GC Semi VOA

Prep Batch: 149206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99540-1	MW-51 (031414)	Total/NA	Water	3510C	
680-99540-2	MW-29 (031414)	Total/NA	Water	3510C	
680-99540-3	MW-24 (031414)	Total/NA	Water	3510C	
LCS 490-149206/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 490-149206/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 149326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99540-1	MW-51 (031414)	Total/NA	Water	8015C	149206
680-99540-2	MW-29 (031414)	Total/NA	Water	8015C	149206
680-99540-3	MW-24 (031414)	Total/NA	Water	8015C	149206
LCS 490-149206/2-A	Lab Control Sample	Total/NA	Water	8015C	149206
MB 490-149206/1-A	Method Blank	Total/NA	Water	8015C	149206

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Client Sample ID: MW-51 (031414)

Lab Sample ID: 680-99540-1
Date Collected: 03/14/14 09:25
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 13:08	CLN	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 21:53	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	149206	03/21/14 07:30	CLH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	149326	03/21/14 15:45	GMH	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-29 (031414)

Lab Sample ID: 680-99540-2
Date Collected: 03/14/14 10:00
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 13:32	CLN	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 22:19	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1060 mL	1 mL	149206	03/21/14 07:30	CLH	TAL NSH
Total/NA	Analysis	8015C		1	1060 mL	1 mL	149326	03/21/14 16:01	GMH	TAL NSH
	Instrument ID: PE10									

Client Sample ID: MW-24 (031414)

Lab Sample ID: 680-99540-3
Date Collected: 03/14/14 10:15
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 13:57	CLN	TAL PEN
	Instrument ID: CH_CONAN									
Total/NA	Analysis	8015C		1	20 mL	20 mL	320336	03/19/14 22:45	TAR	TAL SAV
	Instrument ID: CVGWFID1									
Total/NA	Prep	3510C			1050 mL	1 mL	149206	03/21/14 07:30	CLH	TAL NSH
Total/NA	Analysis	8015C		1	1050 mL	1 mL	149326	03/21/14 16:17	GMH	TAL NSH
	Instrument ID: PE10									

Client Sample ID: TRIP BLANK (031414)

Lab Sample ID: 680-99540-4
Date Collected: 03/14/14 00:00
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 14:23	CLN	TAL PEN
	Instrument ID: CH_CONAN									

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Laboratory References:

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

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

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

TEST AMERICA
VOCS → PENSACOLA
DRO →
GRO →

1 COOLER

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Sampler: LAUREN LAMP	Lab PM: Harvey, Lisa M	Carrier Tracking No(s):	COC No: 680-54866-24042.1
Client Contact: ~~Mr. Scott Stout~~ JOSH WILSON	Phone: 571.375.5180	E-Mail: lisa.harvey@testamericainc.com	Page: ~~Page 1 of 4~~ PG 1 of 1
Company: ~~Newfields Companies LLC~~ ARCADIS			Job #:
Address: ~~800 Ledgewood PL, Ste. 305~~ 1114 BENFIELD BLVD SUITE A	Due Date Requested: —		
City: ~~Rockland~~ MILLERSVILLE	TAT Requested (days): CSXT STANDARD		
State, Zip: ~~MA, 02970~~ MD, 21108	~~PO#:~~ LWON #: ENV00000035683		
Phone:	~~WO#:~~ R9415381 → CSXT #		
Email: joshua.wilson@arcadis-us.com ~~sctout@newfields.com~~	Project #: ~~68001100~~ MD000843.0010.00004		
Project Name: CSX C&O Canal Brunswick, MD	SSOW#: —		
Site: BRUNSWICK RAIL YARD			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) TCL 8260 + Oxygenates	8015C_DRO - Diesel Range Organics (C10-C28)	8015C_GRO - Gasoline Range Organics	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	A		
MW-5 (031414)	3.14.14	0925	G	Water	N	N	X	X	X		
MW-29 (031414)	3.14.14	1000	G	Water	N	N	X	X	X		
MW-24 (031414)	3.14.14	1015	G	Water	N	N	X	X	X		
TRIP BLANK (031414)	—	—	—	Water	N	N	X				
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							

680-99540 Chain of Custody

SAMPLES COLLECTED ~~DELIVERED~~ 03/19/14 SHOULD HAVE HAD A DUP-02 (031314) @1200 INCLUDED!

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) CSXT STANDARD LEVEL 2

Special Instructions/QC Requirements: CSXT STANDARD

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 3.17.14 1500	Company: ARCADIS	Received by:	Date/Time: 03.18.14 0954	Company: TAS
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 3.8°C

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99540-1

Login Number: 99540
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99540-1

Login Number: 99540
List Number: 1
Creator: Ford, Easton

List Source: TestAmerica Nashville
List Creation: 03/19/14 04:48 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99540-1

Login Number: 99540
List Number: 1
Creator: Crawford, Lauren E

List Source: TestAmerica Pensacola
List Creation: 03/19/14 11:24 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9°C 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: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	250	12-31-14

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14 *
California	NELAP	9	1168CA	10-31-14
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-14
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-14
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14 *
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-14
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-14
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14 *
North Carolina DENR	State Program	4	387	12-31-14
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-14
South Carolina	State Program	4	84009 (002)	02-23-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-15
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-15

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-1

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	09-01-14
Florida	NELAP	4	E81010	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200041	10-09-14
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-14
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-14
Michigan	State Program	5	9912	05-04-14
New Jersey	NELAP	2	FL006	06-30-14
North Carolina DENR	State Program	4	314	12-31-14
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-15
Rhode Island	State Program	1	LAO00307	12-30-14
South Carolina	State Program	4	96026	06-30-14
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-14
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

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: 680-99540-2
Client Project/Site: CSX Brunswick, MD Rail Yard

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

Attn: Ms. Megan Kellner

Authorized for release by:
4/24/2014 11:02:58 AM

Lisa Harvey, Project Manager II
(912)354-7858 e.3221
lisa.harvey@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Job ID: 680-99540-2

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX Brunswick, MD Rail Yard
Report Number: 680-99540-2

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 03/18/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.8 C.

A short list of VOCs had been inadvertently reported originally. The samples were re-logged to report the full list of VOCs, which are reported in this report.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples MW-51 (031414) (680-99540-1), MW-29 (031414) (680-99540-2), MW-24 (031414) (680-99540-3) and TRIP BLANK (031414) (680-99540-4) were 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 211323 recovered outside control limits for 1 analyte: This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-99540-1	MW-51 (031414)	Water	03/14/14 09:25	03/18/14 09:54
680-99540-2	MW-29 (031414)	Water	03/14/14 10:00	03/18/14 09:54
680-99540-3	MW-24 (031414)	Water	03/14/14 10:15	03/18/14 09:54
680-99540-4	TRIP BLANK (031414)	Water	03/14/14 00:00	03/18/14 09:54

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN

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

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

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.

Glossary

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: MW-51 (031414)

Lab Sample ID: 680-99540-1

Date Collected: 03/14/14 09:25

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/21/14 13:08	1
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 13:08	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/21/14 13:08	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/21/14 13:08	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/21/14 13:08	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/21/14 13:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 13:08	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/21/14 13:08	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/21/14 13:08	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/21/14 13:08	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/21/14 13:08	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 13:08	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 13:08	1
2-Hexanone	25	U	25	3.1	ug/L			03/21/14 13:08	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/21/14 13:08	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/21/14 13:08	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/21/14 13:08	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/21/14 13:08	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/21/14 13:08	1
Methyl tert-butyl ether	**3.4**		1.0	0.74	ug/L			03/21/14 13:08	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 13:08	1
Styrene	1.0	U	1.0	1.0	ug/L			03/21/14 13:08	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 13:08	1
tert-Butyl alcohol	**21**		10	4.9	ug/L			03/21/14 13:08	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/21/14 13:08	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 13:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 13:08	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/21/14 13:08	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/21/14 13:08	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/21/14 13:08	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: MW-51 (031414)

Lab Sample ID: 680-99540-1

Date Collected: 03/14/14 09:25

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/21/14 13:08	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 13:08*	*1*
Dibromofluoromethane	*107*		*81 - 121*		*03/21/14 13:08*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/21/14 13:08*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: MW-29 (031414)

Lab Sample ID: 680-99540-2

Date Collected: 03/14/14 10:00

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/21/14 13:32	1
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 13:32	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/21/14 13:32	1
Carbon disulfide	**0.52**	**J**	1.0	0.50	ug/L			03/21/14 13:32	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/21/14 13:32	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/21/14 13:32	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/21/14 13:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 13:32	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/21/14 13:32	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/21/14 13:32	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/21/14 13:32	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/21/14 13:32	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 13:32	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 13:32	1
2-Hexanone	25	U	25	3.1	ug/L			03/21/14 13:32	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/21/14 13:32	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/21/14 13:32	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/21/14 13:32	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/21/14 13:32	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/21/14 13:32	1
Methyl tert-butyl ether	**1.5**		1.0	0.74	ug/L			03/21/14 13:32	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 13:32	1
Styrene	1.0	U	1.0	1.0	ug/L			03/21/14 13:32	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 13:32	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 13:32	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/21/14 13:32	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 13:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 13:32	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/21/14 13:32	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/21/14 13:32	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/21/14 13:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: MW-29 (031414)

Lab Sample ID: 680-99540-2

Date Collected: 03/14/14 10:00

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/21/14 13:32	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 13:32*	*1*
Dibromofluoromethane	*107*		*81 - 121*		*03/21/14 13:32*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/21/14 13:32*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: MW-24 (031414)

Lab Sample ID: 680-99540-3

Date Collected: 03/14/14 10:15

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/21/14 13:57	1
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 13:57	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/21/14 13:57	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/21/14 13:57	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/21/14 13:57	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/21/14 13:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 13:57	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/21/14 13:57	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/21/14 13:57	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/21/14 13:57	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/21/14 13:57	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 13:57	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 13:57	1
2-Hexanone	25	U	25	3.1	ug/L			03/21/14 13:57	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/21/14 13:57	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/21/14 13:57	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/21/14 13:57	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/21/14 13:57	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/21/14 13:57	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/21/14 13:57	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 13:57	1
Styrene	1.0	U	1.0	1.0	ug/L			03/21/14 13:57	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 13:57	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 13:57	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/21/14 13:57	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 13:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 13:57	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/21/14 13:57	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/21/14 13:57	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/21/14 13:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: MW-24 (031414)

Lab Sample ID: 680-99540-3

Date Collected: 03/14/14 10:15

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/21/14 13:57	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*03/21/14 13:57*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/21/14 13:57*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/21/14 13:57*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: TRIP BLANK (031414)

Lab Sample ID: 680-99540-4

Date Collected: 03/14/14 00:00

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	10	ug/L			03/21/14 14:23	1
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 14:23	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Bromoform	5.0	U *	5.0	0.71	ug/L			03/21/14 14:23	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/21/14 14:23	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/21/14 14:23	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/21/14 14:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 14:23	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/21/14 14:23	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/21/14 14:23	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/21/14 14:23	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/21/14 14:23	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 14:23	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 14:23	1
2-Hexanone	25	U	25	3.1	ug/L			03/21/14 14:23	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/21/14 14:23	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/21/14 14:23	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/21/14 14:23	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/21/14 14:23	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/21/14 14:23	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/21/14 14:23	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 14:23	1
Styrene	1.0	U	1.0	1.0	ug/L			03/21/14 14:23	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 14:23	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 14:23	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/21/14 14:23	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 14:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 14:23	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/21/14 14:23	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/21/14 14:23	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/21/14 14:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: TRIP BLANK (031414)

Lab Sample ID: 680-99540-4

Date Collected: 03/14/14 00:00

Matrix: Water

Date Received: 03/18/14 09:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/21/14 14:23	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 14:23*	*1*
Dibromofluoromethane	*103*		*81 - 121*		*03/21/14 14:23*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/21/14 14:23*	*1*

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

Lab Sample ID: MB 400-211323/4
Matrix: Water
Analysis Batch: 211323

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	10	ug/L			03/21/14 08:11	1
Benzene	1.0	U	1.0	0.34	ug/L			03/21/14 08:11	1
Bromodichloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Bromoform	5.0	U	5.0	0.71	ug/L			03/21/14 08:11	1
Carbon disulfide	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Carbon tetrachloride	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Chlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Chloroethane	1.0	U	1.0	0.76	ug/L			03/21/14 08:11	1
Chloroform	1.0	U	1.0	0.60	ug/L			03/21/14 08:11	1
Chloromethane	1.0	U	1.0	0.83	ug/L			03/21/14 08:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 08:11	1
Cyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Dibromochloromethane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.5	ug/L			03/21/14 08:11	1
1,2-Dichlorobenzene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
1,3-Dichlorobenzene	1.0	U	1.0	0.54	ug/L			03/21/14 08:11	1
1,4-Dichlorobenzene	1.0	U	1.0	0.64	ug/L			03/21/14 08:11	1
Dichlorodifluoromethane	1.0	U	1.0	0.85	ug/L			03/21/14 08:11	1
1,1-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
1,1-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
1,2-Dichloropropane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Diisopropyl ether	1.0	U	1.0	0.70	ug/L			03/21/14 08:11	1
Ethylbenzene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Ethylene Dibromide	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Ethyl tert-butyl ether	1.0	U	1.0	0.68	ug/L			03/21/14 08:11	1
2-Hexanone	25	U	25	3.1	ug/L			03/21/14 08:11	1
Isopropylbenzene	1.0	U	1.0	0.53	ug/L			03/21/14 08:11	1
Methyl acetate	5.0	U	5.0	2.5	ug/L			03/21/14 08:11	1
Methylcyclohexane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Methylene Chloride	5.0	U	5.0	3.0	ug/L			03/21/14 08:11	1
Methyl Ethyl Ketone	25	U	25	2.6	ug/L			03/21/14 08:11	1
methyl isobutyl ketone	25	U	25	1.8	ug/L			03/21/14 08:11	1
Methyl tert-butyl ether	1.0	U	1.0	0.74	ug/L			03/21/14 08:11	1
Naphthalene	1.0	U	1.0	1.0	ug/L			03/21/14 08:11	1
Styrene	1.0	U	1.0	1.0	ug/L			03/21/14 08:11	1
Tert-amyl methyl ether	1.0	U	1.0	0.60	ug/L			03/21/14 08:11	1
tert-Butyl alcohol	10	U	10	4.9	ug/L			03/21/14 08:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Tetrachloroethene	1.0	U	1.0	0.58	ug/L			03/21/14 08:11	1
Toluene	1.0	U	1.0	0.70	ug/L			03/21/14 08:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.50	ug/L			03/21/14 08:11	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.82	ug/L			03/21/14 08:11	1
1,1,1-Trichloroethane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
1,1,2-Trichloroethane	5.0	U	5.0	0.50	ug/L			03/21/14 08:11	1
Trichloroethene	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1

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

Lab Sample ID: MB 400-211323/4
Matrix: Water
Analysis Batch: 211323

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	1.0	U	1.0	0.52	ug/L			03/21/14 08:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			03/21/14 08:11	1
Xylenes, Total	10	U	10	1.6	ug/L			03/21/14 08:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*78 - 118*		*03/21/14 08:11*	*1*
Dibromofluoromethane	*105*		*81 - 121*		*03/21/14 08:11*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/21/14 08:11*	*1*

Lab Sample ID: LCS 400-211323/1002
Matrix: Water
Analysis Batch: 211323

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	230		ug/L		115	24 - 150
Benzene	50.0	48.4		ug/L		97	79 - 120
Bromodichloromethane	50.0	54.5		ug/L		109	75 - 127
Bromoform	50.0	63.5	*	ug/L		127	65 - 121
Carbon disulfide	50.0	44.3		ug/L		89	41 - 140
Carbon tetrachloride	50.0	61.5		ug/L		123	46 - 141
Chlorobenzene	50.0	50.2		ug/L		100	80 - 120
Chloroethane	50.0	59.4		ug/L		119	37 - 150
Chloroform	50.0	49.1		ug/L		98	73 - 122
Chloromethane	50.0	43.1		ug/L		86	49 - 141
cis-1,2-Dichloroethene	50.0	55.8		ug/L		112	78 - 122
cis-1,3-Dichloropropene	50.0	51.8		ug/L		104	70 - 122
Cyclohexane	50.0	49.3		ug/L		99	69 - 123
Dibromochloromethane	50.0	58.6		ug/L		117	63 - 125
1,2-Dibromo-3-Chloropropane	50.0	56.2		ug/L		112	52 - 124
1,2-Dichlorobenzene	50.0	49.3		ug/L		99	80 - 121
1,3-Dichlorobenzene	50.0	48.5		ug/L		97	77 - 124
1,4-Dichlorobenzene	50.0	48.7		ug/L		97	79 - 120
Dichlorodifluoromethane	50.0	23.6		ug/L		47	27 - 144
1,1-Dichloroethane	50.0	55.0		ug/L		110	75 - 126
1,2-Dichloroethane	50.0	58.7		ug/L		117	69 - 128
1,1-Dichloroethene	50.0	53.8		ug/L		108	50 - 134
1,2-Dichloropropane	50.0	53.9		ug/L		108	77 - 126
Diisopropyl ether	50.0	52.6		ug/L		105	69 - 143
Ethylbenzene	50.0	49.6		ug/L		99	80 - 120
Ethylene Dibromide	50.0	51.8		ug/L		104	80 - 120
Ethyl tert-butyl ether	50.0	48.4		ug/L		97	58 - 142
2-Hexanone	200	219		ug/L		110	60 - 150
Isopropylbenzene	50.0	49.8		ug/L		100	76 - 120
Methyl acetate	250	281		ug/L		112	58 - 150
Methylcyclohexane	50.0	49.1		ug/L		98	72 - 121
Methylene Chloride	50.0	49.5		ug/L		99	70 - 130
Methyl Ethyl Ketone	200	206		ug/L		103	62 - 137

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

Lab Sample ID: LCS 400-211323/1002
Matrix: Water
Analysis Batch: 211323

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
methyl isobutyl ketone	200	239		ug/L		120	63 - 150
Methyl tert-butyl ether	50.0	48.5		ug/L		97	70 - 124
Naphthalene	50.0	44.8		ug/L		90	45 - 131
Styrene	50.0	48.9		ug/L		98	79 - 124
Tert-amyl methyl ether	50.0	46.1		ug/L		92	65 - 125
tert-Butyl alcohol	500	677		ug/L		135	44 - 150
1,1,2,2-Tetrachloroethane	50.0	46.6		ug/L		93	68 - 132
Tetrachloroethene	50.0	50.4		ug/L		101	76 - 124
Toluene	50.0	47.2		ug/L		94	80 - 120
trans-1,2-Dichloroethene	50.0	52.1		ug/L		104	70 - 126
trans-1,3-Dichloropropene	50.0	51.8		ug/L		104	64 - 120
1,2,4-Trichlorobenzene	50.0	46.7		ug/L		93	69 - 128
1,1,1-Trichloroethane	50.0	54.6		ug/L		109	66 - 130
1,1,2-Trichloroethane	50.0	48.3		ug/L		97	80 - 120
Trichloroethene	50.0	53.5		ug/L		107	77 - 120
Trichlorofluoromethane	50.0	51.7		ug/L		103	26 - 150
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	57.1		ug/L		114	45 - 138
Vinyl chloride	50.0	45.8		ug/L		92	60 - 128
Xylenes, Total	100	100		ug/L		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*78 - 118*
Dibromofluoromethane	*104*		*81 - 121*
Toluene-d8 (Surr)	*96*		*80 - 120*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

GC/MS VOA

Analysis Batch: 211323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99540-1	MW-51 (031414)	Total/NA	Water	8260B	
680-99540-2	MW-29 (031414)	Total/NA	Water	8260B	
680-99540-3	MW-24 (031414)	Total/NA	Water	8260B	
680-99540-4	TRIP BLANK (031414)	Total/NA	Water	8260B	
LCS 400-211323/1002	Lab Control Sample	Total/NA	Water	8260B	
MB 400-211323/4	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Client Sample ID: MW-51 (031414)

Lab Sample ID: 680-99540-1
Date Collected: 03/14/14 09:25
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 13:08	CLN	TAL PEN
	Instrument ID: CH_CONAN									

Client Sample ID: MW-29 (031414)

Lab Sample ID: 680-99540-2
Date Collected: 03/14/14 10:00
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 13:32	CLN	TAL PEN
	Instrument ID: CH_CONAN									

Client Sample ID: MW-24 (031414)

Lab Sample ID: 680-99540-3
Date Collected: 03/14/14 10:15
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 13:57	CLN	TAL PEN
	Instrument ID: CH_CONAN									

Client Sample ID: TRIP BLANK (031414)

Lab Sample ID: 680-99540-4
Date Collected: 03/14/14 00:00
Matrix: Water
Date Received: 03/18/14 09:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	211323	03/21/14 14:23	CLN	TAL PEN
	Instrument ID: CH_CONAN									

Laboratory References:

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

TEST AMERICA
VOCs → PENSACOLA
DRO →
GRO →

1 COOLER

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: LAUREN LAMP	Lab PM: Harvey, Lisa M	Carrier Tracking No(s):
Client Contact: ~~Mr. Scott Stout~~ JOSH WILSON	Phone: 571.375.5780	E-Mail: lisa.harvey@testamericainc.com	COC No: 680-54866-24042.1
Company: ~~Newfields Companies LLC~~ ARCADIS			Page: ~~Page 1 of 1~~ PG 1 of 1
Address: ~~888 Ledgewood Pl., Ste. 305~~ 7114 BENFIELD BLVD SUITE A	Due Date Requested: —		Job #:
City: ~~Rockland~~ MILLERSVILLE	TAT Requested (days): CSXT STANDARD		
State, Zip: ~~MA, 02370~~ MD, 21108	PO#: ~~LWON #~~ ENV00000035683		
Phone:	WO#: R9415381 → CSXT #		
Email: ~~sstout@newfields.com~~ joshua.wilson@arcadis-us.com	Project #: ~~68001160~~ MD000843.0010.00004		
Project Name: CSX C&O Canal Brunswick, MD	SSOW#: —		
Site: BRUNSWICK RAIL YARD			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) TCL 8260 + Oxygenates	8015C_DRO - Diesel Range Organics [C10-C28]	8015C_GRO - GRO - Gasoline Range Organics	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	A	A	A	X	
MW-5 (031414)	3.14.14	0925	G	Water	N	N	X	X	X		
MW-29 (031414)	3.14.14	1000	G	Water	N	N	X	X	X		
MW-24 (031414)	3-14.14	1015	G	Water	N	N	X	X	X		
TRIP BLANK (031414)	—	—	—	Water	N	N	X				
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							

680-99540 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

SAMPLES COLLECTED DELIVERED 03/19/14 SHOULD HAVE HAD A DUP-07 (031314) @1200 INCLUDED!

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) CSXT STANDARD LEVEL 2

Special Instructions/QC Requirements: CSXT STANDARD

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 3.18.14 1500	Company: ARCADIS	Received by:	Date/Time: 03-18-14 0954	Company: TAS
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.8°C

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99540-2

Login Number: 99540
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99540-2

Login Number: 99540
List Number: 401
Creator: Crawford, Lauren E

List Source: TestAmerica Pensacola
List Creation: 03/19/14 11:24 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9°C 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: CSX Brunswick, MD Rail Yard

TestAmerica Job ID: 680-99540-2

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	250	12-31-14

Laboratory: TestAmerica Pensacola

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-14
Arkansas DEQ	State Program	6	88-0689	09-01-14
Florida	NELAP	4	E81010	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200041	10-09-14
Iowa	State Program	7	367	08-01-14
Kansas	NELAP	7	E-10253	10-31-14
Kentucky (UST)	State Program	4	53	06-30-14
Louisiana	NELAP	6	30976	06-30-14
Maryland	State Program	3	233	09-30-14
Massachusetts	State Program	1	M-FL094	06-30-14
Michigan	State Program	5	9912	05-04-14
New Jersey	NELAP	2	FL006	06-30-14
North Carolina DENR	State Program	4	314	12-31-14
Oklahoma	State Program	6	9810	08-31-14
Pennsylvania	NELAP	3	68-00467	01-31-15
Rhode Island	State Program	1	LAO00307	12-30-14
South Carolina	State Program	4	96026	06-30-14
Tennessee	State Program	4	TN02907	06-30-14
Texas	NELAP	6	T104704286-12-5	09-30-14
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-14
West Virginia DEP	State Program	3	136	06-30-14

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: 680-99766-1
Client Project/Site: CSX Brunswick Rail Yard

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

Attn: Ms. Megan Kellner

Authorized for release by:
3/31/2014 6:08:02 PM

Lisa Harvey, Project Manager II
(912)354-7858 e.3221
lisa.harvey@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Job ID: 680-99766-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: CSX Brunswick Rail Yard
Report Number: 680-99766-1

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 the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 03/25/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.2 C.

DIESEL AND MOTOR OIL RANGE ORGANICS

Sample NPS MW-13 (032414) (680-99766-1) was analyzed for diesel and motor oil range organics in accordance with EPA SW-846 Method 8015C. The samples were prepared on 03/27/2014 and analyzed on 03/28/2014.

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.

No difficulties were encountered during the DRO analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-99766-1	NPS MW-13 (032414)	Water	03/24/14 10:35	03/25/14 09:37

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

Method	Method Description	Protocol	Laboratory
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

Qualifiers

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)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

Client Sample ID: NPS MW-13 (032414)

Lab Sample ID: 680-99766-1

Date Collected: 03/24/14 10:35

Matrix: Water

Date Received: 03/25/14 09:37

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	520		97	48	ug/L		03/27/14 15:34	03/28/14 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*62*		*43 - 130*	*03/27/14 15:34*	*03/28/14 16:16*	*1*
o-Terphenyl (Surr)	*62*		*43 - 130*	*03/27/14 15:34*	*03/28/14 16:16*	*1*

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

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

Lab Sample ID: MB 680-321515/3-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 321773 — **Prep Batch: 321515**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	100	U	100	50	ug/L		03/27/14 15:34	03/28/14 15:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*68*		*43 - 130*	*03/27/14 15:34*	*03/28/14 15:29*	*1*

Lab Sample ID: LCS 680-321515/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 321773 — **Prep Batch: 321515**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	1000	719		ug/L		72	36 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*78*		*43 - 130*

Lab Sample ID: LCSD 680-321515/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 321773 — **Prep Batch: 321515**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	1000	733		ug/L		73	36 - 130	2	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*81*		*43 - 130*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

GC Semi VOA

Prep Batch: 321515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99766-1	NPS MW-13 (032414)	Total/NA	Water	3520C	
LCS 680-321515/4-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-321515/5-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-321515/3-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 321773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-99766-1	NPS MW-13 (032414)	Total/NA	Water	8015C	321515
LCS 680-321515/4-A	Lab Control Sample	Total/NA	Water	8015C	321515
LCSD 680-321515/5-A	Lab Control Sample Dup	Total/NA	Water	8015C	321515
MB 680-321515/3-A	Method Blank	Total/NA	Water	8015C	321515

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

Client Sample ID: NPS MW-13 (032414)

Lab Sample ID: 680-99766-1

Date Collected: 03/24/14 10:35

Matrix: Water

Date Received: 03/25/14 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1034.2 mL	1.0 mL	321515	03/27/14 15:34	RBS	TAL SAV
Total/NA	Analysis	8015C		1	1034.2 mL	1.0 mL	321773	03/28/14 16:16	SSP	TAL SAV
	Instrument ID:	CSGQ								

Laboratory References:

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

\ COOLER

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: LAUREN LAMP	Lab PM: Harvey, Lisa M	Carrier Tracking No(s):	COC No: 680-54866-24042.1
Client Contact: ~~Mr. Scott Stout~~ JOSH WILSON	Phone: 571.375.5180	E-Mail: lisa.harvey@testamericainc.com		Page: Page 1 of 1
Company: ~~Newfields Companies LLC~~ ARCADIS				Job #:
Address: ~~300 Ledgewood PL, Ste. 305~~ 1114 BOFIELD BLVD SUITE A	Due Date Requested:			
City: ~~Rockland~~ MILLERSVILLE	TAT Requested (days): CSXT STANDARD			
State, Zip: ~~MA, 02370~~ MD, 21108	~~PO#:~~ LWON ENV00000035683			
Phone:	~~WO#:~~ R9415381 → CSXT #			
Email: ~~cstout@newfields.com~~ JOSHUA.WILSON@ARCADIS-US.COM	Project #: ~~68001180~~ MD000843.0010.0006			
Project Name: CSX C&O Canal Brunswick, MD	SSOW#: —			
Site: BRUNSWICK RAIL YARD				

Analysis Requested

Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2SO3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) TCL 8260 + Oxygenates	8015C_DRO - Diesel Range Organics (C10-C28)	8015C_GRO - Gasoline Range Organics	Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	A		
NPS MW-13 (032414)	3.24.14	1035	G	Water				X			
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							

680-99766 Chain of Custody

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) CSXT STANDARD

Special Instructions/QC Requirements: CSXT STANDARD

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 3.24.14/1400	Company: ARCADIS	Received by:	Date/Time: 03/25/14 0937	Company: TA SV
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.2°C 680-99766

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-99766-1

Login Number: 99766
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: CSX Brunswick Rail Yard

TestAmerica Job ID: 680-99766-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Maryland	State Program	3	250	12-31-14

Attachment 4

Historical Groundwater and Analytical Data

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-01																
	Sample Date	7/5/1994	8/29/1995	3/10/1997	3/12/1998	11/9/1999	4/11/2000	5/7/2002	5/15/2003	5/7/2004	5/16/2005	6/6/2006	12/27/2006	3/5/2007	5/22/2007	8/9/2007	12/5/2007	2/28/2008
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	**2**	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.66 J**	**0.72**
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U	< 0.6 U
1634-04-4	Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**97**	< 10 U	**90**	**210**	**210 E**	**160 D**
91-20-3	Naphthalene	NA	< 10 U	< 1 U	< 10 U	**6**	< 1 U	< 10 U	< 8 U	< 1 U	< 5 U	< 5 U	< 25 U	< 5 U	< 5 U	< 5 U	< 1 U	**2.7**
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9.2**	**7.1**
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**24**	**10 B**
108-88-3	Toluene	< 1 U	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U
1330-20-7	Xylenes, Total	< 3 U	< 10 U	< 1 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 10 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**9.7**	**19**	**13**	**25.7**	**7.56**	**9.58**	**37.3**	**2.51**	< 0.1 U	**0.75**	**11**	**12**	**11**	NA	**3.7**	**8.3**	**3.8**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.69**	**0.068**	< 0.05 U	< 0.05 U	**0.16**	**0.17**

	Location ID	CSXT MW-01		CSXT MW-02				
	Sample Date	5/23/2008	8/6/2008	7/5/1994	5/7/2002	5/15/2003	5/6/2004	8/12/2008
	Sample Type Code	N	N	N	N	N	N	N
CAS No	Chemical name							
	VOCs (ug/L)							
71-43-2	Benzene	< 0.7 U	< 0.35 U	**31**	**13.3**	< 5 U	< 1 U	**0.70**
108-20-3	Diisopropy Ether	**1.2**	< 0.17 U	NA	NA	NA	NA	< 0.17 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1.2 U	< 0.6 U	NA	NA	NA	NA	< 0.6 U
1634-04-4	Methyl tert-butyl ether	**280 D**	**160 D**	NA	NA	NA	NA	< 0.28 U
91-20-3	Naphthalene	< 0.87 U	< 0.43 U	NA	**63**	< 9 U	**10**	**7.0**
994-05-8	tert-Amyl Methyl Ether (TAME)	**9.6**	**3.9**	NA	NA	NA	NA	< 0.53 U
75-65-0	Tert-Butyl Alcohol	**42**	< 3.6 U	NA	NA	NA	NA	< 3.6 U
108-88-3	Toluene	< 1 U	< 0.51 U	**2**	**5.8**	**19.1**	< 1 U	**0.66**
1330-20-7	Xylenes, Total	< 1.9 U	< 0.93 U	**22**	**62.3**	**103**	< 2 U	< 0.93 U
	TPH (mg/L)							
DROC10-C28	Diesel Range Organics	**0.91**	**1.9**	**110**	**222**	**188**	**4.12**	**250**
PHC610GRO	Gasoline Range Organics	**0.24**	**0.10**	NA	NA	NA	NA	**0.12**

	Location ID	CSXT MW-03																
	Sample Date	7/5/1994	8/29/1995	3/10/1997	3/12/1998	11/9/1999	4/11/2000	5/16/2001	5/7/2002	5/15/2003	5/6/2004	5/16/2005	6/6/2006	12/14/2006	3/5/2007	5/22/2007	8/9/2007	12/3/2007
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 1 U	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U
1634-04-4	Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10 U	< 10 U	< 10 U	< 10 U	NA
91-20-3	Naphthalene	NA	< 10 U	< 1 U	< 10 U	< 1 U	< 1 U	< 11 U	< 9 U	< 11 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 20 U
108-88-3	Toluene	< 1 U	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1330-20-7	Xylenes, Total	< 3 U	< 10 U	< 1 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**0.83**	< 0.6 U	**0.47**	< 0.1 U	**0.54**	< 0.1 U	< 0.1 U	< 0.1 U	< 0.11 U	< 0.1 U	< 0.095 U	< 0.1 U	< 0.094 U	< 0.097 U	< 0.096 U	**0.18**	< 0.098 U
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-03																
	Sample Date	12/3/2007	2/26/2008	5/21/2008	8/7/2008	3/3/2009	9/8/2009	3/9/2010	3/9/2010	9/23/2010	9/23/2010	2/16/2011	8/10/2011	3/22/2012	9/25/2012	1/14/2013	9/17/2013	3/13/2014
	Sample Type Code	N	N	N	N	N	N	FD	N	FD	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U*	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	< 0.098 U	**0.22**	< 0.04 U	< 0.043 U	< 0.47 U	**0.16**	**0.18**	**0.16**	**0.26**	**0.27**	**0.23**	**0.13**	**0.14**	< 0.1 U	**0.049 J**	**0.086 JB**	**0.086 JB**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U	**0.06 B**

	Location ID	CSXT MW-04												CSXT MW-05				
	Sample Date	7/5/1994	7/5/1994	3/12/1998	11/9/1999	4/11/2000	5/16/2001	5/7/2002	5/15/2003	5/6/2004	5/16/2005	6/6/2006	12/7/2007	8/29/1995	8/29/1995	3/10/1997	3/12/1998	4/11/2000
	Sample Type Code	FD	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	**83**	**94**	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U		**0.63 J**	< 5 U	< 5 U	< 1 U	< 2 U	< 1 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U	NA	NA	NA	NA	NA
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U	NA	NA	NA	NA	NA
1634-04-4	Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U	NA	NA	NA	NA	NA
91-20-3	Naphthalene	NA	NA	< 10 U	**136000**	< 1 U	< 11 U	< 10 U	< 9 U	< 1 U	< 5 U	NA	< 1 U	**23**	**23**	< 1 U	< 10 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U	NA	NA	NA	NA	NA
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 20 U	NA	NA	NA	NA	NA
108-88-3	Toluene	< 1 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	NA	< 1 U	< 5 U	< 5 U	< 1 U	< 2 U	< 1 U
1330-20-7	Xylenes, Total	**13**	**12**	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	NA	< 3 U	< 10 U	< 10 U	< 1 U	< 2 U	< 2 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**150**	**210**	**78.8**	**53.4**	**13.1**	**1.27**	**2.66**	< 0.08 U	< 0.11 U	**3.9**	NA	**6.7**	**4.3**	**4.3**	**1.16**	**77.3**	**28.9**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.046 J**	NA	NA	NA	NA	NA

	Location ID	CSXT MW-05															
	Sample Date	5/16/2001	5/7/2002	5/15/2003	5/6/2004	5/16/2005	5/16/2005	6/6/2006	12/14/2006	3/5/2007	5/22/2007	5/22/2007	8/9/2007	12/5/2007	2/26/2008	5/22/2008	8/6/2008
	Sample Type Code	N	N	N	N	FD	N	N	N	N	FD	N	N	N	N	N	N
CAS No	Chemical name																
	VOCs (ug/L)																
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.65 J**	**0.69**	**0.40**	**0.79**
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U
1634-04-4	Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	**110**	**52**	**39**	**47**	**140**	**84**	**58**	**5.2**	**9.2**
91-20-3	Naphthalene	< 11 U	< 9 U	< 9 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.78 J**	< 0.53 U	< 0.53 U	< 0.53 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4.7 J**	< 3.6 U	< 3.6 U	< 3.6 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U
	TPH (mg/L)																
DROC10-C28	Diesel Range Organics	**13.9**	**36.7**	**8.22**	**2.31**	**11**	**20**	**21**	**14**	**9**	**1.5**	**1.5**	**2.5**	**3.4**	**10**	**6.2**	**14**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	**0.070**	**0.061**	**0.0082**	**0.018**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-06						CSXT MW-06R										
	Sample Date	8/29/1995	11/9/1999	4/11/2000	5/16/2001	5/7/2002	5/15/2003	5/7/2004	5/16/2005	6/6/2006	12/15/2006	3/2/2007	5/23/2007	8/10/2007	12/7/2007	3/3/2008	5/27/2008	8/11/2008
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 5 U	**10**	**16.8**	**10.2**	**6.6**	**11.8**	< 1 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.2**	**0.82**	< 0.17 U	**0.56**
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.1**	**0.79**	< 0.6 U	< 0.6 U
1634-04-4	Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10 U	< 10 U	< 10 U	< 10 U	**3.7**	**3.5**	< 0.28 U	**6.6**
91-20-3	Naphthalene	< 10 U	**20**	< 5 U	< 11 U	< 10 U	< 11 U	**9.9**	< 25 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	**0.58**
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.3 J**	**3.9**	< 3.6 U	< 3.6 U
108-88-3	Toluene	< 5 U	< 1 U	< 5 U	**3.8**	**6.2**	**54.3**	< 1 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U
1330-20-7	Xylenes, Total	< 10 U	< 2 U	< 10 U	**34.7**	**187**	**253**	< 2 U	< 1 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**6.8**	**251**	**79.4**	**45**	**150**	**250**	**15.4**	**24**	**2.2**	**5.1**	**2.4**	**1.3**	**2.5**	**2.2**	**1.5**	**1.9**	**14**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.14**	**0.067**	**0.05**	**0.064**	**0.039 J**	**0.055**	**0.13**	**0.11**

	Location ID	CSXT MW-06R															
	Sample Date	8/11/2008	2/26/2009	9/3/2009	3/9/2010	9/23/2010	2/15/2011	2/15/2011	8/10/2011	8/10/2011	3/26/2012	3/26/2012	9/26/2012	9/26/2012	1/16/2013	9/18/2013	3/13/2014
	Sample Type Code	N	N	N	N	N	FD	N	FD	N	FD	N	FD	N	N	N	N
CAS No	Chemical name																
	VOCs (ug/L)																
71-43-2	Benzene	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	**0.58**	**0.77 J**	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	**6.8**	**2.0**	< 5 U	**1.9 J**	< 5 U	< 5 U	< 5 U	**1.6**	< 1 U	< 1 U	< 1 U	**1.8**	**1.7**	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	**0.46**	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	**29**	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																
DROC10-C28	Diesel Range Organics	**2.4**	**4.0 J**	**3.9**	**4.2**	**2.4**	**11**	**11**	**3.5**	**4.8**	**11**	**13**	**2.0**	**2.0**	**7.7**	**16 B**	NA
PHC610GRO	Gasoline Range Organics	**0.10**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	**0.059**	**0.13**	**0.18**	**0.19 B**

	Location ID	CSXT MW-08																	
	Sample Date	8/29/1995	3/10/1997	3/12/1998	11/9/1999	4/11/2000	5/16/2001	5/7/2002	5/15/2003	5/7/2004	5/16/2005	6/6/2006	6/6/2006	12/15/2006	2/28/2007	5/24/2007	8/9/2007	11/30/2007	2/27/2008
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
CAS No	Chemical name																		
	VOCs (ug/L)																		
71-43-2	Benzene	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.0**	**1.5**
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.93 J**	**1.4**
1634-04-4	Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**38**	**17**	**21**	**37**	NA	**26**
91-20-3	Naphthalene	< 10 U	< 1 U	< 10 U	< 1 U	< 1 U	< 11 U	< 10 U	< 12 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.81 J**	**0.69**
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 20 U	< 3.6 U
108-88-3	Toluene	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U
1330-20-7	Xylenes, Total	< 10 U	< 1 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U
	TPH (mg/L)																		
DROC10-C28	Diesel Range Organics	< 0.6 U	< 0.1 U	< 0.1 U	**0.42**	< 0.1 U	< 0.1 U	< 0.11 U	< 0.12 U	< 0.1 U	**0.14**	< 0.1 U	< 0.098 U	**0.097**	**0.15**	< 0.097 U	**0.19**	< 0.097 U	**0.14**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	**0.026 J**	**0.027**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-08				CSXT MW-09													
	Sample Date	5/21/2008	8/7/2008	8/7/2008	1/15/2013	8/29/1995	3/10/1997	3/12/1998	11/9/1999	4/11/2000	5/16/2001	5/7/2002	5/15/2003	5/7/2004	5/16/2005	6/6/2006	12/18/2006	2/28/2007	5/24/2007
	Sample Type Code	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																		
	VOCs (ug/L)																		
71-43-2	Benzene	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	< 0.17 U	**1.8**	**1.4**	< 1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
637-92-3	Ethyl-t-butyl ether (ETBE)	**0.66**	**1.7**	**1.9**	< 1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1634-04-4	Methyl tert-butyl ether	**22**	**36**	**40**	**5.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10 U	< 10 U	< 10 U
91-20-3	Naphthalene	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 10 U	< 1 U	< 10 U	< 1 U	< 1 U	< 11 U	< 10 U	< 17 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 0.53 U	**0.80**	**1.5**	< 1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
75-65-0	Tert-Butyl Alcohol	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
108-88-3	Toluene	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 1 U	< 2 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1330-20-7	Xylenes, Total	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U	< 10 U	< 1 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
	TPH (mg/L)																		
DROC10-C28	Diesel Range Organics	< 0.041 U	< 0.04 U	< 0.04 U	**0.039 J**	< 0.6 U	< 0.1 U	< 0.1 U	**1.5**	**1.69**	< 0.1 U	< 0.1 U	< 0.12 U	< 0.11 U	**0.38**	**0.16**	**0.39**	**0.68**	**0.56**
PHC610GRO	Gasoline Range Organics	**0.020**	**0.025**	**0.026**	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U

	Location ID	CSXT MW-09						CSXT MW-20					CSXT MW-21						
	Sample Date	8/10/2007	11/30/2007	2/27/2008	5/21/2008	8/7/2008	1/15/2013	12/7/2007	3/3/2008	5/27/2008	8/11/2008	1/16/2013	6/26/2007	8/8/2007	12/5/2007	2/26/2008	5/23/2008	8/6/2008	1/17/2013
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																		
	VOCs (ug/L)																		
71-43-2	Benzene	< 1 U	< 5 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U
108-20-3	Diisopropy Ether	NA	< 5 U	**1.5**	< 0.17 U	**0.99**	< 1 U	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	< 5 U	**1.1**	< 0.6 U	**0.85**	< 1 U	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 10 U	NA	**7.0**	**4.6**	**4.4**	**1.3**	**1.0**	**0.50**	< 0.28 U	< 0.28 U	< 1 U	< 10 U	< 10 U	< 1 U	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 1 U	< 0.43 U	< 0.43 U	**0.47**	< 1 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	< 5 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U
75-65-0	Tert-Butyl Alcohol	NA	< 100 U	**4.9 B**	< 3.6 U	< 3.6 U	< 5 U	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U
108-88-3	Toluene	< 1 U	< 5 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U
1330-20-7	Xylenes, Total	< 2 U	< 15 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U
	TPH (mg/L)																		
DROC10-C28	Diesel Range Organics	**0.48**	< 0.097 U	**0.15**	< 0.041 U	< 0.039 U	**0.15**	< 0.098 U	< 0.039 U	< 0.038 U	< 0.044 U	**0.036 J**	**2.2**		**5.0**	**0.57**	**1.8**	**1.7**	**0.6**
PHC610GRO	Gasoline Range Organics	< 0.05 U	**0.0073 J**	**0.0094**	**0.0079**	**0.0074**	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	**0.065**	< 0.05 U	< 0.05 U	**0.065**	< 0.0042 U	**0.0082**	**0.0082**	< 0.05 U

	Location ID	CSXT MW-22																	
	Sample Date	6/25/2007	8/9/2007	12/5/2007	2/26/2008	5/22/2008	8/7/2008	3/3/2009	9/4/2009	3/9/2010	9/23/2010	2/16/2011	8/11/2011	3/26/2012	9/25/2012	1/15/2013	9/17/2013	3/13/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 1 U	< 1 U	< 4 U	< 1.4 U	< 1.4 U	< 1.4 U	**0.22 J**	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	NA	NA	< 4 U	< 0.67 U	< 0.67 U	< 0.67 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	< 4 U	< 2.4 U	< 2.4 U	< 2.4 U	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 4 U	< 1.1 U	< 1.1 U	< 1.1 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	**16**	< 5 U	**3.0 J**	**2.6**	< 1.7 U	**4.0**	**2.5**	< 5 U	**1.2 J**	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	1.9	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	< 4 U	< 2.1 U	< 2.1 U	< 2.1 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	NA	NA	< 80 U	< 14 U	< 14 U	< 14 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	**4**	< 1 U	< 4 U	< 2 U	< 2 U	< 2 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 12 U	< 3.7 U	< 3.7 U	< 3.7 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**17**	**9.1**	**8.5**	**8.0**	**6.0**	**3.3**	**7.5**	**8.4**	**6.8**	**7.6**	**7.3**	**5.7**	**7.3**	**4.8**	**4.1**	**8.5 B**	**6.7 B**
PHC610GRO	Gasoline Range Organics	**0.2**	< 0.05 U	**0.027 J**	**0.026**	**0.019**	**0.017**	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	0.019 J	**0.087**	**0.034 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-23			CSXT MW-24													
	Sample Date	2/28/2008	5/27/2008	8/8/2008	6/25/2007	12/6/2007	2/28/2008	5/27/2008	8/11/2008	3/3/2009	9/8/2009	3/9/2010	2/16/2011	8/11/2011	3/27/2012	9/25/2012	9/17/2013	3/14/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 0.35 U	< 0.35 U	**1.1**	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	NA	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	< 0.17 U	< 0.17 U	< 0.17 U	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 5 U	< 5 U	< 5 U	< 1 U	NA	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U	< 1 U	NA	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 0.28 U	< 0.28 U	< 0.28 U	< 10 U	< 1 U	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U	< 5 U	< 5 U	< 5 U	< 1 U	NA	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	**7.0**	< 0.43 U	**61**	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 1 U	NA	< 1 U	< 1 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 0.53 U	< 0.53 U	< 0.53 U	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 1 U	NA	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 3.6 U	< 3.6 U	< 3.6 U	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	NA	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	< 0.51 U	< 0.51 U	< 0.51 U	**3.3**	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 1 U	NA	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**6.1**	**0.54**	NA	< 0	**2.0**	**0.26**	**0.26**	**0.31**	**0.58**	**0.63**	**0.25**	**0.62**	**2.3**	**2.1**	**1.3**	**0.37 B**	**0.34**
PHC610GRO	Gasoline Range Organics	**0.021**	< 0.0042 U	**0.054**	**0.056**	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	**0.047 JB**

	Location ID	CSXT MW-25																
	Sample Date	6/25/2007	8/8/2007	12/4/2007	2/26/2008	5/22/2008	8/8/2008	3/3/2009	9/8/2009	3/9/2010	9/23/2010	2/16/2011	8/10/2011	3/21/2012	9/25/2012	1/14/2013	9/17/2013	3/12/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1.4 U	< 1.4 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	NA	NA	< 1 U	< 0.67 U	< 0.67 U	< 0.17 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	< 1 U	< 2.4 U	< 2.4 U	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	NA	< 1.1 U	< 1.1 U	< 0.28 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 1 U	< 1.7 U	< 1.7 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	< 1 U	< 2.1 U	< 2.1 U	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	NA	NA	< 20 U	< 14 U	< 14 U	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 2 U	< 2 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 3 U	< 3.7 U	< 3.7 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**3.8**	**3**	**0.79**	**2.0**	**1.9**	**1.8**	**2.0**	**8.0**	**5.5**	**7.1**	**5.5**	**3.8**	**3.4**	**4.9**	**1.2**	**2.6 B**	**2.6**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	**0.0083**	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	**0.023 J**	**0.058**	**0.18 B**

	Location ID	CSXT MW-26				CSXT MW-27						CSXT MW-28	
	Sample Date	6/25/2007	8/9/2007	12/6/2007	3/4/2009	6/26/2007	12/7/2007	2/28/2008	2/28/2008	5/27/2008	8/7/2008	2/28/2008	8/8/2008
	Sample Type Code	N	N	N	N	N	N	FD	N	N	N	N	N
CAS No	Chemical name												
	VOCs (ug/L)												
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	**11**	**3.6**
108-20-3	Diisopropy Ether	NA	NA	< 1 U	< 1 U	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	< 1 U	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 1 U	< 1 U	< 10 U	< 1 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	**1.9**	< 0.28 U
91-20-3	Naphthalene	< 5 U	< 5 U	**0.58 J**	**1.4**	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	**79**	**61**
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	< 1 U	< 1 U	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 0.53 U	< 0.53 U	< 0.53 U
75-65-0	Tert-Butyl Alcohol	NA	NA	< 20 U	< 20 U	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U
108-88-3	Toluene	**1.1**	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 3 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 0.93 U	< 0.93 U	< 0.93 U
	TPH (mg/L)												
DROC10-C28	Diesel Range Organics	**5.4**	**13**	**15**	**1000 J**	**6.8**	**1.5**	**0.68**	**0.94**	**0.36**	**0.96**	**62**	**160**
PHC610GRO	Gasoline Range Organics	**0.13**	**1.1**	**0.16 J**	NA	< 0.05 U	**0.016 J**	**0.0082**	**0.0070**	< 0.0042 U	**0.0070**	**0.19**	**0.26**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-29														CSXT MW-30		
	Sample Date	12/5/2007	2/26/2008	5/23/2008	8/6/2008	3/3/2009	9/4/2009	9/22/2010	2/16/2011	8/10/2011	3/26/2012	9/25/2012	1/24/2013	9/17/2013	3/14/2014	12/6/2007	8/6/2008	3/3/2009
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 4 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 0.35 U	< 1 U
108-20-3	Diisopropy Ether	< 4 U	< 0.17 U	**0.39**	< 0.17 U	**0.82 J**	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	**1.2**	< 0.17 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 4 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 0.6 U	NA
1634-04-4	Methyl tert-butyl ether	**90**	**59**	**88**	**160 D**	**160 J**	**140**	**66**	**61**	**31**	**15**	**2.0**	**3.8**	**1.3**	**1.5**	**350 E**	**7.3**	**51**
91-20-3	Naphthalene	< 4 U	< 0.43 U	< 0.43 U	< 0.43 U	**1.9**	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 0.43 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	**4.4**	**3.4**	**2.7**	**5.1**	**3.9**	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	**15**	< 0.53 U	**1.1**
75-65-0	Tert-Butyl Alcohol	< 80 U	< 3.6 U	< 3.6 U	**4.5**	**18 J**	**12**	< 5 U	< 5 U	< 5 U	**20**	< 5 U	< 5 U	< 5 U	< 10 U	**45**	< 3.6 U	< 20 U
108-88-3	Toluene	< 4 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 0.51 U	< 1 U
1330-20-7	Xylenes, Total	< 12 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 3 U	< 0.93 U	< 2 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**7.1**	**4.1**	**5.7**	**5.9**	**18**	**2.8**	**5.9**	**23**	**2.1**	**2.0**	**2**	**29 B**	**4.8 B**	**4.7**	**2.7**	**4.7**	**1.9**
PHC610GRO	Gasoline Range Organics	**0.12**	**0.066**	**0.090**	**0.16**	NA	NA	NA	NA	NA	NA	< 0.05 U	**0.025 J**	**0.11**	**0.041 JB**	**0.28**	**0.0073**	NA

	Location ID	CSXT MW-31				CSXT MW-32			CSXT MW-33		CSXT MW-35					CSXT MW-37		
	Sample Date	12/6/2007	2/28/2008	5/27/2008	8/6/2008	12/5/2007	2/25/2008	5/27/2008	12/5/2007	2/27/2008	12/4/2007	2/26/2008	5/22/2008	8/8/2008	2/6/2013	12/4/2007	5/28/2008	5/28/2008
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	**2.3 J**	**18**	< 0.35 U	< 0.35 U	< 4 U	< 1.4 U	< 0.35 U	< 4 U	< 0.35 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U
108-20-3	Diisopropy Ether	< 4 U	< 0.17 U	< 0.17 U	< 0.17 U	< 4 U	< 0.67 U	< 0.17 U	< 4 U	< 0.17 U	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 1 U	< 0.17 U	< 0.17 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 4 U	< 0.6 U	< 0.6 U	< 0.6 U	< 4 U	< 2.4 U	< 0.6 U	< 4 U	< 0.6 U	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U	< 1 U	< 0.6 U	< 0.6 U
1634-04-4	Methyl tert-butyl ether	< 4 U	< 0.28 U	< 0.28 U	< 0.28 U	< 4 U	< 1.1 U	< 0.28 U	< 4 U	< 0.28 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U	NA	< 0.28 U	< 0.28 U
91-20-3	Naphthalene	**3.1 J**	**2.8**	< 0.43 U	< 0.43 U	< 4 U	< 1.7 U	**2.7**	**2.6 J**	< 0.43 U	**7.2**	**0.70**	**2.5**	**0.54**	< 1 U	**2.1**	**3.0**	< 0.43 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 4 U	< 0.53 U	< 0.53 U	< 0.53 U	< 4 U	< 2.1 U	< 0.53 U	< 4 U	< 0.53 U	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 1 U	< 0.53 U	< 0.53 U
75-65-0	Tert-Butyl Alcohol	< 80 U	< 3.6 U	< 3.6 U	< 3.6 U	< 80 U	**37**	< 3.6 U	< 80 U	< 3.6 U	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U	< 20 U	< 3.6 U	< 3.6 U
108-88-3	Toluene	< 4 U	< 0.51 U	< 0.51 U	< 0.51 U	< 4 U	< 2 U	< 0.51 U	< 4 U	< 0.51 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	**0.61 J**	< 0.51 U	< 0.51 U
1330-20-7	Xylenes, Total	< 12 U	< 0.93 U	< 0.93 U	< 0.93 U	< 12 U	< 3.7 U	< 0.93 U	< 12 U	< 0.93 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U	< 3 U	< 0.93 U	< 0.93 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**2.2**	**1.4**	**0.38**	**1.0**	**190**	**14**	**7.1**	**12**	**9.7**	**0.50**	**0.57**	**0.40**	**0.28**	**0.69**	**31**	**8.3**	**23**
PHC610GRO	Gasoline Range Organics	**0.10**	**0.20**	< 0.0042 U	**0.023**	**0.23 J**	**0.047**	**0.026**	**0.064 J**	**0.017**	**0.013 J**	**0.0084**	**0.0076**	**0.0082**	< 0.05 U	**0.077**	**0.062**	**0.056**

	Location ID	CSXT MW-38	CSXT MW-39				CSXT MW-43												
	Sample Date	12/5/2007	12/4/2007	2/26/2008	5/21/2008	8/7/2008	12/7/2007	12/7/2007	2/29/2008	5/23/2008	8/11/2008	3/4/2009	9/3/2009	3/9/2010	9/22/2010	2/15/2011	8/9/2011	3/23/2012	9/17/2013
	Sample Type Code	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																		
	VOCs (ug/L)																		
71-43-2	Benzene	< 4 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	< 4 U	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 1 U	< 0.17 U	< 0.17 U	**0.26**	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 4 U	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 4 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	**58**	**57**	**34**	**56**	**85 D**	**40**	**62**	**17**	**17**	< 5 U	**2.0**	< 1 U	< 1 U
91-20-3	Naphthalene	< 4 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 4 U	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 1 U	**0.57**	**0.95**	**1.3**	**0.53 J**	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U
75-65-0	Tert-Butyl Alcohol	< 80 U	**3.6 J**	**6.6**	< 3.6 U	< 3.6 U	< 20 U	< 20 U	< 3.6 U	**4.6**	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
108-88-3	Toluene	< 4 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U
1330-20-7	Xylenes, Total	< 12 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 3 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																		
DROC10-C28	Diesel Range Organics	**8.5**	**0.92**	**0.33**	**0.15**	< 0.043 U	**3.3**	**2.6**	**0.93**	**0.83**	**0.84**	**0.55 B**	**1.4**	**1.1**	**1.1**	**3.9**	**0.89**	**1.5**	**0.53 B**
PHC610GRO	Gasoline Range Organics	**0.061 J**	**0.010 J**	**0.0054**	< 0.0042 U	< 0.0042 U	**0.052 J**	**0.071 J**	**0.029**	**0.053**	**0.069**	NA	NA	NA	NA	NA	NA	NA	< 0.05 U

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-43				CSXT MW-49	CSXT MW-50				CSXT MW-51						
	Sample Date	9/26/2012	1/16/2013	9/18/2013	3/13/2014	12/5/2007	12/4/2007	2/25/2008	5/21/2008	8/11/2008	12/6/2007	2/25/2008	5/28/2008	8/8/2008	3/4/2009	9/8/2009	3/9/2010
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																
	VOCs (ug/L)																
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 0.35 U	**1.0**	**10**	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	**3.6**	**6.8**	**2.8**	**4.7**	**3.2**	< 5 U	< 5 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	**1.2**	**2.8**	**1.3**	**4.2**	NA	< 5 U	< 5 U*
1634-04-4	Methyl tert-butyl ether	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	**790 E**	< 0.28 U	**1200 D**	**1400 D**	**1100 J**	**69**	**9.6**
91-20-3	Naphthalene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	**0.72 J**	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	**32**	**56**	**24**	**44**	**22**	< 5 U	< 5 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 5 U	< 5 U	< 10 U	< 100 U	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	**75**	< 3.6 U	**54**	**88**	**110**	**410**	< 5 U*
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 15 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U
	TPH (mg/L)																
DROC10-C28	Diesel Range Organics	**2.6**	**0.98**	**0.53 B**	**1.6 B**	**7.9**	**5.4**	**0.27**	< 0.041 U	**0.29**	**0.64**	**0.37**	**0.38**	< 0.045 U	**0.17 J, B**	**0.49**	**0.22**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	**0.018 JB**	**0.16 J**	**0.031 J**	< 0.0042 U	< 0.0042 U	< 0.0042 U	**0.70**	**1.5**	**0.84**	**0.47**	NA	NA	NA

	Location ID	CSXT MW-51								CSXT MW-52				CSXT MW-59				
	Sample Date	9/23/2010	2/16/2011	8/10/2011	3/26/2012	9/25/2012	1/14/2013	9/17/2013	3/14/2014	12/6/2007	2/25/2008	5/28/2008	8/8/2008	1/14/2013	5/21/2013	9/19/2013	12/26/2013	3/12/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	**1.0**	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 2 U	**61**	< 1.0 U	< 1.0 U
108-20-3	Diisopropy Ether	< 5 U	< 5 U	**1.8**	**1.8**	**1.0**	**1.1**	**0.62 J**	< 1.0 U	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 2 U	< 1 U	< 1.0 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 5 U	< 5 U	**1.2**	**1.4**	< 1 U	**1.2**	< 1 U	< 1.0 U	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U	< 2 U	< 1 U	< 1.0 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	**30**	**26**	**34**	**27**	**18**	**12**	**7.5**	**3.4**	**0.85 J**	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U	< 2 U	< 1 U	< 1.0 U	< 1.0 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 2 U	**6.4**	< 1.0 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 5 U	< 5 U	**1.1**	**1.0**	< 1 U	**0.65 J**	< 1 U	< 1.0 U	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 2 U	< 1 U	< 1.0 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	**6.9**	< 5 U	**120**	**110**	**26**	**53**	**11**	**21**	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U	< 10 U	< 5 U	< 5.0 U	< 10 U
108-88-3	Toluene	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 2 U	< 1 U	< 1.0 U	< 1.0 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U	< 20 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**0.61**	**0.48**	**0.30**	**0.31**	**0.56**	**0.12**	**0.18 B**	**0.085 J**	**0.90**	**1.2**	**1.1**	**0.34**	**150**	**140**	**470 B**	**93**	**110**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	< 0.05 U	**0.029 J**	**0.083**	**0.022 JB**	< 0.05 U	**0.0058**	< 0.0042 U	< 0.0042 U	**0.16**	**0.16**	**1.5 B**	**0.62 JB**	**0.16 B**

	Location ID	CSXT MW-61							CSXT MW-62		CSXT MW-64						
	Sample Date	6/14/2012	9/26/2012	1/14/2013	5/21/2013	9/19/2013	12/26/2013	3/12/2014	12/26/2013	3/12/2014	4/3/2012	6/14/2012	9/26/2012	5/21/2013	9/19/2013	12/27/2013	3/12/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																
	VOCs (ug/L)																
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
108-20-3	Diisopropy Ether	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
91-20-3	Naphthalene	< 1 U	**6.3**	< 1 U	< 1 U	**2.9**	< 1.0 U	< 1.0 U	**71**	**21**	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5.0 U	< 10 U	< 5.0 U	< 10 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5.0 U	< 10 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	**4.9 J**	**< 10 U**	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																
DROC10-C28	Diesel Range Organics	**18**	**18**	**100**	**44**	**44 B**	**30**	**160**	**120**	**150**	**15**	**7.6**	**13**	**6.5**	**8.4 B**	**0.79**	**1.9**
PHC610GRO	Gasoline Range Organics	**0.12**	**0.12**	**0.16**	**0.13**	**0.089 B**	**0.19 B**	**0.31 B**	**0.67 B**	**0.44 B**	**0.11**	< 0.05 U	< 0.05 U	< 0.050 U	**0.042 JB**	**0.063 B**	**0.028 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	CSXT MW-65										CSXT MW-67				
	Sample Date	4/3/2012	4/3/2012	6/14/2012	6/14/2012	9/26/2012	1/17/2013	5/21/2013	9/19/2013	12/27/2013	3/12/2014	1/15/2013	5/21/2013	9/18/2013	12/26/2013	3/12/2014
	Sample Type Code	FD	N	FD	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name															
	VOCs (ug/L)															
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
108-20-3	Diisopropy Ether	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	**2.1**	**1.1**	< 1 U	**0.84 J**	**< 1.0 U**
91-20-3	Naphthalene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5.0 U	< 10 U	< 5 U	< 5 U	< 5 U	< 5.0 U	< 10 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)															
DROC10-C28	Diesel Range Organics	**13**	**14**	**9.2**	**9.6**	**8.0**	**4**	**6.8**	**12 B**	**2.6**	**13**	**5.6**	**7.4**	**14 B**	**15**	**32**
PHC610GRO	Gasoline Range Organics	**0.10**	**0.14**	**0.12**	**0.11**	**0.085**	**0.092**	**0.057**	**0.072 B**	**0.082 B**	**0.083 B**	**0.086**	**0.061**	**0.2**	**0.11 B**	**0.15 B**

	Location ID	CSXT MW-68					CSXT MW-69					CSXT MW-70			
	Sample Date	1/17/2013	5/21/2013	9/19/2013	12/27/2013	3/12/2014	1/17/2013	5/21/2013	9/19/2013	12/27/2013	3/12/2014	1/17/2013	5/21/2013	12/26/2013	3/12/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name														
	VOCs (ug/L)														
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	**0.53 J**	< 1 U	< 1.0 U	< 1.0 U
108-20-3	Diisopropy Ether	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
91-20-3	Naphthalene	6.8	< 1 U	< 1 U	**1.1**	**< 1.0 U**	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	1.6	< 1 U	**2.3**	**1.1**
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 5 U	< 5 U	< 5.0 U	< 10 U	< 5 U	< 5 U	< 5 U	< 5.0 U	< 10 U	< 5 U	< 5 U	< 5.0 U	< 10 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U	**1.0**	< 1 U	< 1.0 U	< 1.0 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	**13**	< 10 U	**3.9 J**	**2.9 J**
	TPH (mg/L)														
DROC10-C28	Diesel Range Organics	**6**	**20**	**17 B**	**2.1**	**3.5**	**2.3**	**3.3**	**6.2 B**	**1.3**	**5**	**0.46**	**1.7**	**1.5**	**4.7**
PHC610GRO	Gasoline Range Organics	**0.05**	**0.088**	**0.085 B**	**0.031 JB**	**0.05 B**	**0.063**	**0.03 J**	**0.068 B**	**0.25 B**	**0.21 B**	**0.091**	**0.03 J**	**0.19 B**	**0.15 B**

	Location ID	NPS MW-01																	
	Sample Date	12/18/2006	2/28/2007	5/24/2007	8/9/2007	11/29/2007	3/3/2008	5/21/2008	8/7/2008	2/26/2009	9/4/2009	3/10/2010	9/22/2010	2/15/2011	8/9/2011	3/23/2012	9/25/2012	1/15/2013	9/18/2013
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																		
	VOCs (ug/L)																		
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	**1.6**	**0.86**	< 0.17 U	**1.6**	**0.91 J**	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	**1.2**	**0.88**	**0.74**	**1.8**	NA	< 5 U	**1.0 J***	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 10 U	< 10 U	NA	**2.7**	**2.8**	**2.8**	**2.3**	< 5 U	**1.7 J**	< 5 U	< 5 U	< 1 U	**1.2**	**1.5**	**1.9**	**1.2**
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 20 U	< 5 U	< 5 U*	**8.4**	**5.4**	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																		
DROC10-C28	Diesel Range Organics	**0.18**	**0.45**	**0.25**	**0.24**	< 0.098 U	**1.8**	**0.16**	< 0.039 U	< 0.52 U	**0.57**	**0.62**	**0.42**	**1.1**	**0.34**	**1.0**	**0.38**	**0.13**	**0.24 B**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	**0.0073 J**	**0.0064**	**0.0056**	**0.0054**	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	NPS MW-01	NPS MW-02														
	Sample Date	3/13/2014	12/14/2006	3/1/2007	5/25/2007	8/10/2007	12/3/2007	2/27/2008	5/22/2008	8/12/2008	3/4/2009	3/4/2009	9/3/2009	9/3/2009	3/9/2010	9/22/2010	2/15/2011
	Sample Type Code	N	N	N	N	N	N	N	N	N	FD	N	FD	N	N	N	N
CAS No	Chemical name																
	VOCs (ug/L)																
71-43-2	Benzene	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 4 J	< 4 J	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 4 J	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	NA	< 5 U	< 5 U	< 5 U*	< 5 U	< 5 U
1634-04-4	Methyl tert-butyl ether	< 1.0 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 4 J	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
91-20-3	Naphthalene	< 1.0 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 4 J	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 4 J	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
75-65-0	Tert-Butyl Alcohol	< 10 U	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 80 J	< 80 J	< 5 U	< 5 U	< 5 U*	< 5 U	< 5 U
108-88-3	Toluene	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 4 J	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1330-20-7	Xylenes, Total	< 10 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 8 J	< 8 J	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																
DROC10-C28	Diesel Range Organics	**0.24 B**	**0.93**	**1.4**	**0.81**	**0.67**	< 0.096 U	**0.30**	**0.64**	**0.46**	**0.49 B**	**0.42 J, B**	**1.3**	**1.4**	**1.5**	**1.3**	**1.2**
PHC610GRO	Gasoline Range Organics	**0.015 JB**	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	NA	NA	NA	NA	NA	NA	NA

	Location ID	NPS MW-02						NPS MW-03								
	Sample Date	8/9/2011	3/23/2012	9/26/2012	1/16/2013	9/18/2013	3/13/2014	12/15/2006	2/27/2007	5/23/2007	8/8/2007	11/30/2007	2/29/2008	5/20/2008	8/11/2008	1/15/2013
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name															
	VOCs (ug/L)															
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U
108-20-3	Diisopropy Ether	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U
91-20-3	Naphthalene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U
	TPH (mg/L)															
DROC10-C28	Diesel Range Organics	**0.94**	**1.2**	**1.1**	**0.28**	**0.58 B**	**0.55 B**	**0.19**	**0.34**	**0.17**	**0.29**	< 0.097 U	< 0.038 U	< 0.04 U	< 0.043 U	**0.071 J**
PHC610GRO	Gasoline Range Organics	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U	**0.016 JB**	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	< 0.05 U

	Location ID	NPS MW-04							
	Sample Date	5/16/2005	6/6/2006	12/18/2006	3/2/2007	5/23/2007	3/3/2008	5/27/2008	8/12/2008
	Sample Type Code	N	N	N	N	N	N	N	N
CAS No	Chemical name								
	VOCs (ug/L)								
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	**6.1**	**16**	**12**
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	< 0.67 U	< 0.17 U	< 0.17 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	< 2.4 U	< 0.6 U	< 0.6 U
1634-04-4	Methyl tert-butyl ether	NA	NA	< 10 U	< 10 U	< 10 U	< 1.1 U	< 0.28 U	< 0.28 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1.7 U	< 0.43 U	**0.89**
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	< 2.1 U	< 0.53 U	< 0.53 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	< 14 U	< 3.6 U	< 3.6 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 2 U	< 0.51 U	< 0.51 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3.7 U	< 0.93 U	< 0.93 U
	TPH (mg/L)								
DROC10-C28	Diesel Range Organics	**30**	**21**	**10**	**33**	**3.2**	**9.6**	**11**	**2.0**
PHC610GRO	Gasoline Range Organics	NA	NA	**0.17**	**0.092**	< 0.05 U	**0.058**	**0.11**	**0.11**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	NPS MW-04										
	Sample Date	3/4/2009	9/3/2009	3/9/2010	9/23/2010	2/15/2011	8/10/2011	3/23/2012	9/26/2012	1/16/2013	9/18/2013	3/13/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name											
	VOCs (ug/L)											
71-43-2	Benzene	< 4 J	**2.1**	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 80 J	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	< 4 J	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 8 J	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)											
DROC10-C28	Diesel Range Organics	**6.1 B**	**4.5**	**5.4**	**3.0**	**12**	**3.2**	**2.9**	**5.4**	**17**	**31 B**	**7.8 B**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	**0.050**	**0.088**	**0.085**	**0.069 B**

	Location ID	NPS MW-05																	
	Sample Date	12/15/2006	2/28/2007	2/28/2007	5/23/2007	8/9/2007	11/29/2007	3/3/2008	3/3/2008	5/20/2008	5/20/2008	8/7/2008	2/26/2009	9/4/2009	3/10/2010	9/22/2010	2/15/2011	8/9/2011	9/17/2013
	Sample Type Code	N	FD	N	N	N	N	FD	N	FD	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																		
	VOCs (ug/L)																		
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 5 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	< 5 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	< 5 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	**1.8**	**1.8**	< 0.28 U	**6.9**	**7.0**	**3.2**	**6.6**	**4.2 J**	< 5 U	< 5 U	**1.1**	< 1 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	< 5 U	< 0.53 U	< 0.53 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	< 100 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 5 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 15 U	< 0.93 U	< 0.93 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																		
DROC10-C28	Diesel Range Organics	**0.9**	**1.3**	**1.1**	**0.83**	**0.91**	< 0.094 U	**0.42**	**0.26**	< 0.039 U	**0.25**	< 0.044 U	< 0.51 U	**1.2**	**0.82**	**1.1**	**0.89**	**0.70**	**0.34 B**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	**0.0066**	**0.0054**	NA	NA	NA	NA	NA	NA	< 0.50 U

	Location ID	NPS MW-05				NPS MW-10								
	Sample Date	3/23/2012	9/25/2012	1/15/2013	3/13/2014	12/15/2006	3/1/2007	5/22/2007	8/10/2007	12/3/2007	2/29/2008	5/22/2008	8/12/2008	1/16/2013
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name													
	VOCs (ug/L)													
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U
108-20-3	Diisopropy Ether	< 1 U	< 1 U	< 1 U	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 1 U	< 1 U	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 1 U	< 1 U	< 1 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U
91-20-3	Naphthalene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 1 U	< 1 U	< 1.0 U	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 5 U	< 5 U	< 10 U	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U
	TPH (mg/L)													
DROC10-C28	Diesel Range Organics	**0.62**	**0.82**	**0.16**	**0.31 B**	**0.41**	**0.7**	**0.51**	**0.66**	< 0.098 U	**0.50**	**0.28**	< 0.047 U	**0.32**
PHC610GRO	Gasoline Range Organics	NA	< 0.05 U	< 0.05 U	**0.017 JB**	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	< 0.05 U

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	NPS MW-11								NPS MW-12								
	Sample Date	12/15/2006	3/1/2007	5/22/2007	8/10/2007	12/3/2007	2/27/2008	5/27/2008	8/12/2008	12/14/2006	3/1/2007	5/25/2007	8/10/2007	11/30/2007	2/27/2008	5/22/2008	8/12/2008	1/16/2013
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**0.43**	**0.77**	**0.37**	**0.41**	< 0.095 U	< 0.04 U	< 0.038 U	< 0.048 U	**0.59**	**0.93**	**0.61**	**0.56**	< 0.097 U	**0.38**	**0.25**	**0.43**	**0.26**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	< 0.05 U

	Location ID	NPS MW-13								
	Sample Date	12/21/2006	2/27/2007	5/23/2007	8/9/2007	11/29/2007	2/29/2008	5/20/2008	8/12/2008	2/26/2009
	Sample Type Code	N	N	N	N	N	N	N	N	N
CAS No	Chemical name									
	VOCs (ug/L)									
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	NA
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 20 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U
	TPH (mg/L)									
DROC10-C28	Diesel Range Organics	**0.53**	**0.65**	**0.42**	**0.56**	< 0.099 U	**0.26**	**0.30**	< 0.042 U	**0.28 J, B**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.0042 U	NA

	Location ID	NPS MW-13									
	Sample Date	9/4/2009	3/10/2010	9/22/2010	2/15/2011	8/9/2011	3/22/2012	9/25/2012	1/15/2013	9/17/2013	3/13/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name										
	VOCs (ug/L)										
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)										
DROC10-C28	Diesel Range Organics	**0.74**	**0.57**	**0.71**	**0.79**	**0.45**	**0.53**	**0.65**	**0.21**	**0.26 B**	**0.34 B**
PHC610GRO	Gasoline Range Organics	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U	**0.02 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	NPS MW-14																	
	Sample Date	12/14/2006	12/14/2006	3/2/2007	5/23/2007	8/9/2007	11/29/2007	2/29/2008	5/27/2008	8/11/2008	2/26/2009	9/4/2009	3/10/2010	9/22/2010	2/15/2011	8/9/2011	3/22/2012	9/25/2012	1/15/2013
	Sample Type Code	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																		
	VOCs (ug/L)																		
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	**0.54**	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	**0.61**	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)																		
DROC10-C28	Diesel Range Organics	**2.3**	**1.7**	**2.4**	**1.8**	**1**	< 0.096 U	**0.90**	**0.88**	**0.71**	**0.64 B**	**2.5**	**2.0**	**1.2**	**3.4**	**1.0**	**1.7**	**2.4**	**0.7**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	**0.012**	**0.020**	**0.0082**	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	**0.03 J**

	Location ID	NPS MW-14		NPS MW-15									NPS MW-16					
	Sample Date	9/17/2013	3/13/2014	12/18/2006	3/2/2007	5/23/2007	8/9/2007	11/30/2007	2/27/2008	5/20/2008	8/7/2008	1/15/2013	12/15/2006	3/2/2007	5/25/2007	8/10/2007	11/30/2007	2/29/2008
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name																	
	VOCs (ug/L)																	
71-43-2	Benzene	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 5 U	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U
108-20-3	Diisopropy Ether	< 1 U	< 1.0 U	NA	NA	NA	NA	< 5 U	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	NA	NA	NA	NA	< 1 U	< 0.17 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 1 U	< 1.0 U	NA	NA	NA	NA	< 5 U	< 0.6 U	< 0.6 U	< 0.6 U	< 1 U	NA	NA	NA	NA	< 1 U	< 0.6 U
1634-04-4	Methyl tert-butyl ether	< 1 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 0.28 U	< 1 U	< 10 U	< 10 U	< 10 U	< 10 U	NA	**0.57**
91-20-3	Naphthalene	< 1 U	< 1.0 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 1 U	< 1.0 U	NA	NA	NA	NA	< 5 U	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	NA	NA	NA	NA	< 1 U	< 0.53 U
75-65-0	Tert-Butyl Alcohol	< 5 U	< 10 U	NA	NA	NA	NA	< 100 U	< 3.6 U	< 3.6 U	< 3.6 U	< 5 U	NA	NA	NA	NA	< 20 U	< 3.6 U
108-88-3	Toluene	< 1 U	< 1.0 U	< 1 U	< 1 U	< 1 U	< 1 U	< 5 U	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U
1330-20-7	Xylenes, Total	< 10 U	< 10 U	< 2 U	< 2 U	< 2 U	< 2 U	< 15 U	< 0.93 U	< 0.93 U	< 0.93 U	< 10 U	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U
	TPH (mg/L)																	
DROC10-C28	Diesel Range Organics	**1 B**	**1.2 B**	**1.8**	**1.8**	**1**	**1.5**	**1.0**	**0.76**	**1.1**	**0.59**	**0.49**	**1.3**	**1.4**	**1.4**	**1.3**	< 0.097 U	**0.28**
PHC610GRO	Gasoline Range Organics	**0.067**	**0.054 B**	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	**0.029 J**	**0.028**	**0.021**	**0.027**	**0.053**	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	**0.0043**

	Location ID	NPS MW-16													
	Sample Date	5/22/2008	5/23/2008	8/12/2008	3/4/2009	9/3/2009	3/9/2010	9/22/2010	2/15/2011	8/9/2011	3/23/2012	9/26/2012	1/16/2013	9/18/2013	3/13/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name														
	VOCs (ug/L)														
71-43-2	Benzene	< 0.35 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
108-20-3	Diisopropy Ether	< 0.17 U	< 0.17 U	< 0.17 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	< 0.6 U	< 0.6 U	< 0.6 U	NA	< 5 U	< 5 U*	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 0.28 U	**0.50**	**0.69**	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
91-20-3	Naphthalene	< 0.43 U	< 0.43 U	< 0.43 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	< 0.53 U	< 0.53 U	< 0.53 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	< 3.6 U	< 3.6 U	< 3.6 U	< 20 U	< 5 U	< 5 U*	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 10 U
108-88-3	Toluene	< 0.51 U	< 0.51 U	< 0.51 U	< 1 U	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1.0 U
1330-20-7	Xylenes, Total	< 0.93 U	< 0.93 U	< 0.93 U	< 2 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)														
DROC10-C28	Diesel Range Organics	**0.12**	**0.57**	**0.46**	**0.58 B**	**0.88**	**1.9**	**1.5**	**0.53**	**0.91**	**0.96**	**0.56**	**0.28**	**0.67 B**	**0.8 B**
PHC610GRO	Gasoline Range Organics	< 0.0042 U	< 0.0042 U	< 0.0042 U	NA	NA	NA	NA	NA	NA	NA	< 0.05 U	< 0.05 U	< 0.05 U	**0.015 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank

Attachment 4
Historical Groundwater and Analytical Data
CSXT Brunswick Yard, Brunswick, Maryland

	Location ID	NPS MW-17								NPS MW-18		
	Sample Date	12/14/2006	3/1/2007	5/24/2007	8/10/2007	11/30/2007	2/27/2008	8/12/2008	1/16/2013	9/18/2013	12/26/2013	3/13/2014
	Sample Type Code	N	N	N	N	N	N	N	N	N	N	N
CAS No	Chemical name											
	VOCs (ug/L)											
71-43-2	Benzene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.35 U	< 0.35 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
108-20-3	Diisopropy Ether	NA	NA	NA	NA	< 1 U	< 0.17 U	< 0.17 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
637-92-3	Ethyl-t-butyl ether (ETBE)	NA	NA	NA	NA	< 1 U	< 0.6 U	< 0.6 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
1634-04-4	Methyl tert-butyl ether	< 10 U	< 10 U	< 10 U	< 10 U	NA	< 0.28 U	< 0.28 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
91-20-3	Naphthalene	< 5 U	< 5 U	< 5 U	< 5 U	< 1 U	< 0.43 U	< 0.43 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
994-05-8	tert-Amyl Methyl Ether (TAME)	NA	NA	NA	NA	< 1 U	< 0.53 U	< 0.53 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
75-65-0	Tert-Butyl Alcohol	NA	NA	NA	NA	< 20 U	< 3.6 U	< 3.6 U	< 5 U	< 5 U	< 5.0 U	< 10 U
108-88-3	Toluene	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 0.51 U	< 0.51 U	< 1 U	< 1 U	< 1.0 U	< 1.0 U
1330-20-7	Xylenes, Total	< 2 U	< 2 U	< 2 U	< 2 U	< 3 U	< 0.93 U	< 0.93 U	< 10 U	< 10 U	< 10 U	< 10 U
	TPH (mg/L)											
DROC10-C28	Diesel Range Organics	**0.12**	**0.21**	**0.13**	**0.17**	< 0.097 U	< 0.038 U	< 0.044 U	**0.1**	**0.24 B**	**0.082 J**	**0.26 B**
PHC610GRO	Gasoline Range Organics	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.0042 U	< 0.0042 U	< 0.05 U	< 0.05 U	**0.025 JB**	**0.017 JB**

Notes:
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
<1U - concentration is less than the reporting limit
mg/L - miligrams per liter
ug/L - micrograms per liter
NA - Not Analyzed
J* - Concentration is estimated
B - Constituent was detected in a laboratory method blank