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NCBC DAVISVILLE
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TECHNICAL MEMORANDUM DATA PACKAGE FOR THE 2013 FOCUSED FEASIBILITY STUDY SUPPORT FIELD INVESTIGATION AT THE CONSTRUCTION EQUIPMENT DEPARTMENT AREA SITES AND STUDY AREAS FORMER NCBC DAVISVILLE RI

04/01/2015

TETRA TECH

Technical Memorandum

Data Package

for

2013 Focused Feasibility Study Support Field Investigation at the CED Area Sites and Study Areas

Former Naval Construction Battalion Center Davisville

North Kingstown, Rhode Island

Naval Facilities Engineering Command Mid-Atlantic

Contract Number N62470-08-D-1001

Contract Task Order WE01

April 2015

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1.0 INTRODUCTION

This memorandum provides the results of environmental sampling conducted in September and October 2014 at the Former Construction Equipment Department (CED) Area at Former Naval Construction Battalion Center (NCBC) Davisville, North Kingstown, Rhode Island (Figure 1-1). The field investigation and data analysis were conducted per the specifications documented in Revision 1 of the Sampling and Analysis Plan (SAP) for Total Petroleum Hydrocarbon (TPH) Delineation at CED Area Site 03 and Additional Groundwater Sampling at Sites 02 and 03 and the Drum Removal Area (Tetra Tech, 2014a). A site location map for the CED Area is presented as Figure 1-2. Field and laboratory analytical data are summarized in tables and figures included as part of this memorandum and the following information is provided in appendices:

- Attachment B – Field Sampling Forms.
- Attachment C – Data Tables.
- Attachment D – Data Validation Memoranda.

The following narrative is organized per the following four problem statements presented in the SAP:

Problem No. 1: Delineation of TPH-Contaminated Soils at Site 03.
Problem No 2: Characterization of Groundwater at Sites 02/03 (in Support of the Evaluation of Leaching Potential).
Problem No. 3: Characterization of Vapor Intrusion Potential at Sites 02/03.
Problem No. 4: Characterization of Groundwater at CED Area Drum Removal Area.

Significant observations reported by the field crew and noteworthy analytical results are summarized in each section. Conclusions and/or recommendations are provided based on the analytical results.

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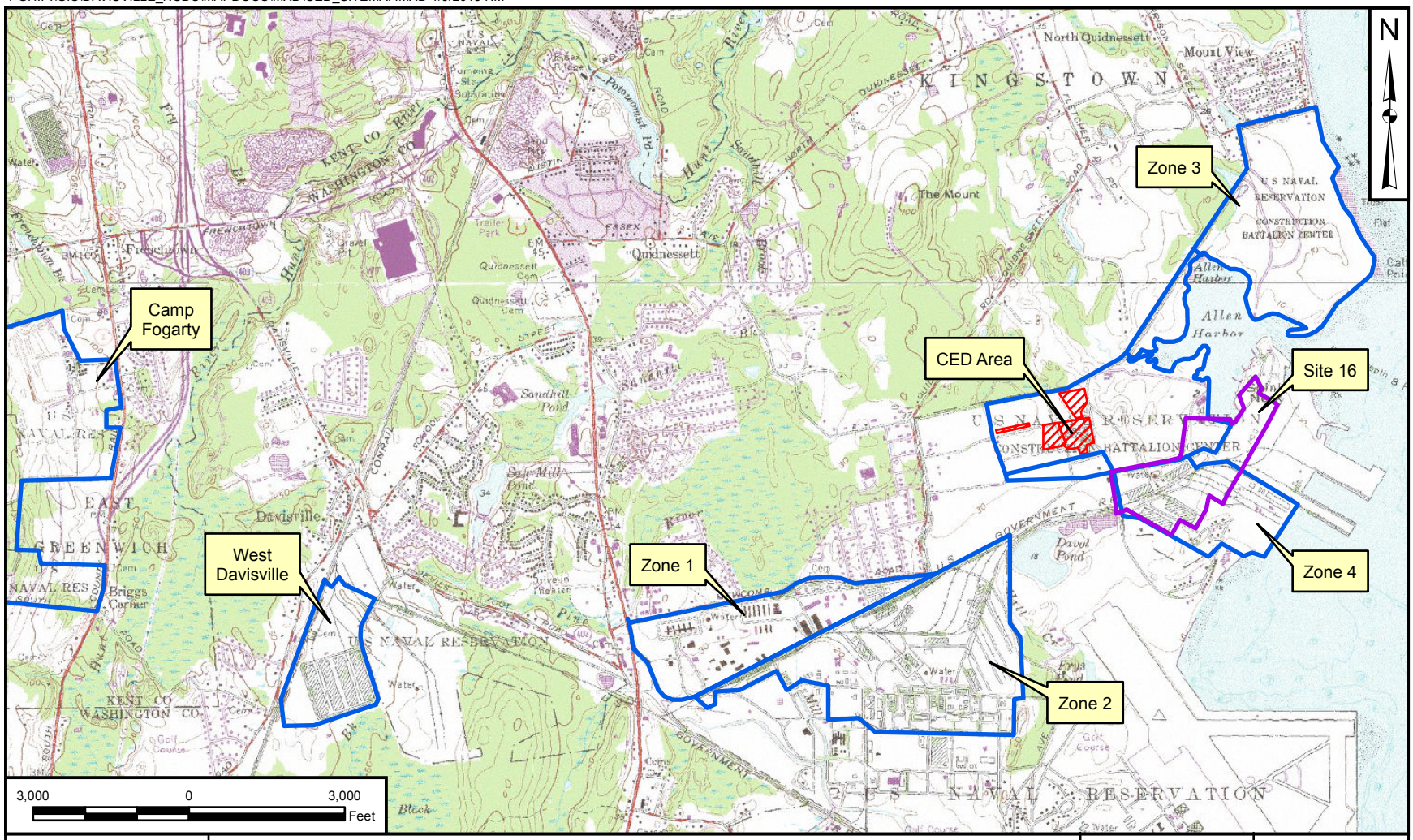

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REVISED BY: —	DATE: —		APPROVED BY: — / DATE: —
SCALE: AS NOTED			FIGURE NO.: 1-1 / REV: 0

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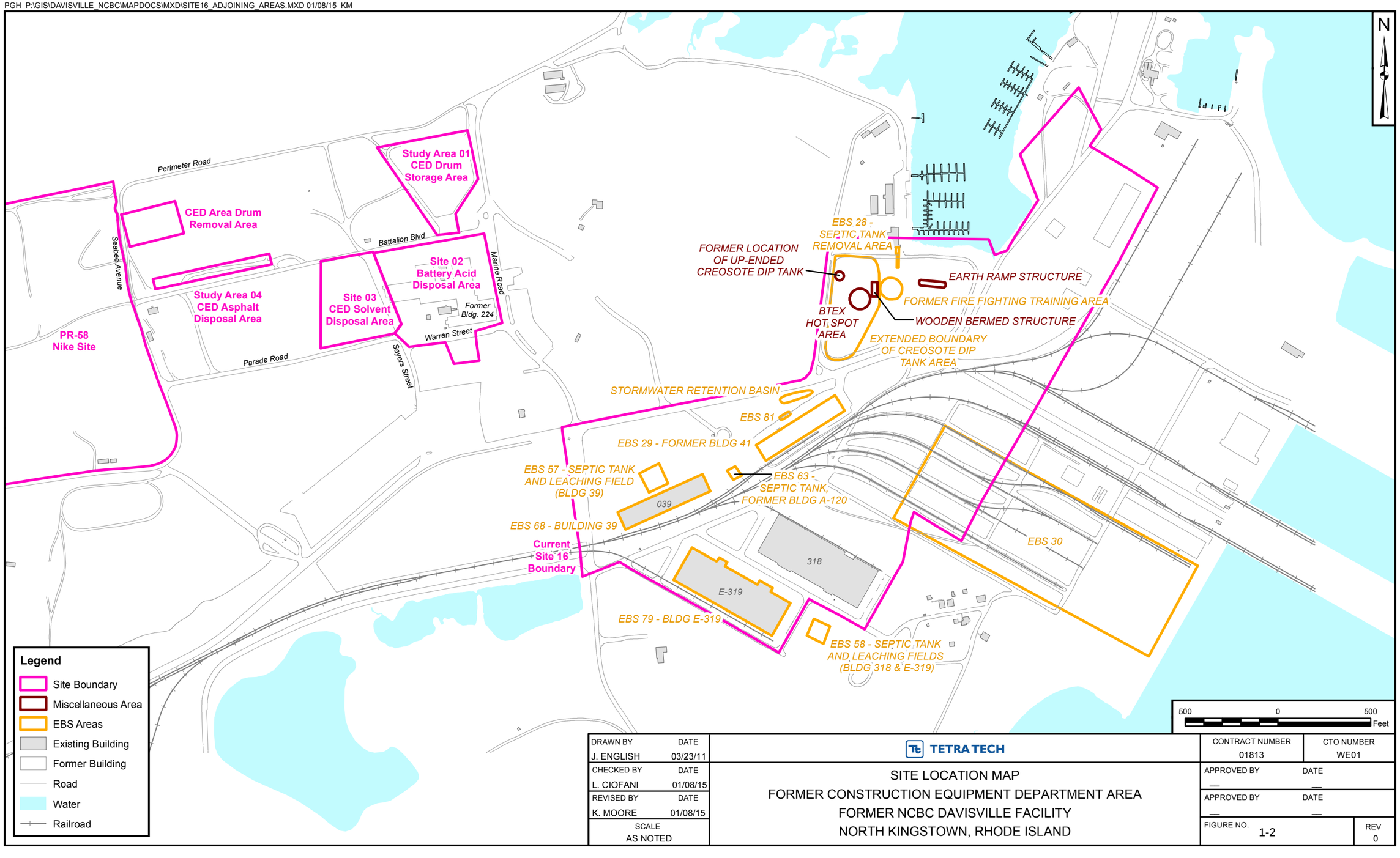

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REVISED BY K. MOORE	DATE 01/08/15		APPROVED BY — / DATE —
SCALE AS NOTED			FIGURE NO. 1-2 / REV 0

2.0 PROBLEM NO 1: DELINEATION OF TPH-CONTAMINATED SOILS AT SITE 03

The SAP provided the following background information and formal problem statement for Problem 1:

- **Background.** A Human Health Risk Assessment (HHRA) for Site 03 was conducted as part of a risk evaluation for the CED Area (Tetra Tech, 2014b). TPH was selected as a chemical of concern (COC) for direct contact with soil based on a comparison of concentrations to the Rhode Island Department of Environmental Management (RIDEM) residential and industrial/commercial soil criteria. TPH was also selected as a chemical of concern (COC) for groundwater protection based on a comparison of concentrations in soil at Site 03 to the RIDEM GA and GB leachability criterion. The available historical results indicate that TPH contamination is present in surface soil at Site 03. The source of TPH is expected to be historical contaminant disposal activities conducted at the site and/or potential releases from heavy equipment. The horizontal and vertical extent of contamination exceeding RIDEM criteria is currently unknown.

- **Problem Statement**. The extent of TPH contamination in soil at Site 03 of the CED Area is not sufficiently delineated to estimate volumes of soil that need to be evaluated for remedial alternatives under State of Rhode Island regulations. Therefore, additional data must be collected to refine the Navy's understanding of the nature and extent of TPH contamination at Site 03 and thus to understand the soil volumes potentially requiring remediation.

For soil sample location selection at Site 03 (Problem Statement 1), the SAP presented a grid (based on a 50-foot by 50-foot grid spacing) encompassing the areal extent of known TPH contamination. The SAP specified that soil borings would be advanced at selected grid nodes and at previous locations at which TPH concentrations exceeded RIDEM criteria, as shown on Figure 2-1. Therefore, both "biased samples" (i.e., samples from locations with previous TPH exceedances) and "grid samples" (i.e., samples collected from locations on the grid where no historical samples were collected) were proposed for collection to confirm historical sampling results and to delineate the horizontal and vertical extent of contamination.

A direct-push technology (DPT) rig was used to advance a shallow soil boring at each of the 35 locations depicted on Figure 2-1 (03SB001 through 03SB035). In addition, borings were advanced at two other locations, 03SB007A and 03SB009A, to compensate for the fact that the location markers (flags) originally placed by the Field Operations Leader (FOL) to identify grid sampling locations were accidentally dislodged/moved as a result of vehicular traffic (i.e., these additional borings were advanced to ensure that all locations specified in the SAP were actually sampled). Four soil samples were collected from each soil boring location, one surface soil [0 to 2 feet below ground surface (bgs)] and three subsurface soil (2 to 4, 4 to 6, and 6 to 10 feet bgs) samples. Samples from all depth intervals were

screened in the field using a photoionization detector (PID) (for the potential presence of volatile organic chemicals) and visually examined for the presence of staining or other indications of contamination. All samples were submitted to the subcontract analytical laboratory (Spectrum Analytical, Inc., North Kingstown, Rhode Island) for TPH–diesel-range organics (DRO) (C9-C40) and TPH–gasoline-range organics (GRO) [methyl tert-butyl ether (MTBE) through naphthalene] analysis.

The SAP stated that the analytical laboratory would analyze the top two depth intervals (0 to 2 and 2 to 4 feet bgs) from all boring locations for TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene) and submit the raw (unvalidated) data for the 0- to 2- and 2- to 4-foot depth intervals via e-mail to the Navy/Tetra Tech for review as soon as the raw data were available. Samples from the deeper depth intervals were to be placed on hold pending instructions from the Navy/Tetra Tech; however, the Navy/Tetra Tech decided, conservatively, to analyze all soil boring samples, including those from deeper depths (4 to 6 and 6 to 10 feet bgs), for the target TPH parameters because the TPH concentrations in 2 of 18 samples in the first group of samples received for review exceeded the RIDEM residential direct exposure criterion (DEC) for TPH.

The results of field observations and screening (i.e., PID readings) are documented on the boring logs included in Attachment B. The only positive PID reading was from the top of the 6- to 10-foot interval at 03SB014 [6.2 parts per million (ppm)]. However, there was no visual evidence of staining or olfactory evidence of contamination at this interval.

Table 2-1 presents TPH soil sample results, and Table 2-2 provides descriptive statistics (e.g., ranges of detections, frequencies of detection, mean concentrations) for the TPH data. The results of the data validation quality assurance review of the analytical results are presented in Attachment D and indicate that none of the data were qualified as rejected (not useable for risk management decision making). Figure 2-2 presents all TPH results (detects and non-detects) for all locations sampled during the 2014 sampling event, and Figure 2-3 shows TPH results for both 2014 and previous (1989 or 1993) samples with TPH concentrations exceeding either the RIDEM residential DEC/GA leachability criterion [500 milligrams per kilogram (mg/kg) for both criteria] or industrial DEC/GB leachability criterion (2,500 mg/kg for both criteria). Tables 2-1 and 2-2 and Figures 2-2 and 2-3 present results for total TPH as well as results for TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene). Total TPH results are the sum of detected TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene) results. For samples in which both TPH-DRO (C9-40) and TPH-GRO (MTBE through naphthalene) were non-detected, the detection limit for TPH-DRO (C9-C40) was used for total TPH.

As shown on Figure 2-2, only four 2014 TPH results exceed the residential DEC/GA leachability criterion; none of the 2014 TPH results exceed the RIDEM industrial DEC/GB leachability criterion. Concentrations exceeding the residential DEC/GA leachability criterion ranged from 530 mg/kg to 1,100 mg/kg. Most of

these exceedances were in surface soil (0 to 2 feet bgs) samples; however, the TPH result for the sample collected from 6 to 10 feet bgs at location 03SB014 (620 mg/kg) also exceeded the residential DEC/GA leachability criterion. As discussed above, this was the only sampling interval that had an elevated PID reading (6.2 ppm). The exceedances of the residential DEC were located in the eastern part of the sampling area. The extent of TPH contamination is addressed in the TPH Remediation Plan, which is included as an appendix to the Focused Feasibility Study (FFS).

In contrast, 11 historical TPH samples exceeded the RIDEM residential and/or industrial DEC (and GA and/or GB leachability criterion), and these exceedances were scattered across Site 03. The 2014 sampling event included resampling (as close as possible) of these locations. In most cases, the 2014 sampling results did not exceed the RIDEM criteria at locations where historical exceedances were noted. Exceptions included new sampling location 03SB022 and nearby historical location SS3C-1 and new sampling location 03SB009 and nearby historical location S-03-01-00-S. In the surface soil sample at 03SB022, TPH was detected at 1,100 and 740 mg/kg in the original and duplicate samples, respectively, and the TPH concentration in the surface soil sample at nearby location SS3C-1 was 3,110 mg/kg. The surface soil sample at 03SB009 had TPH at 530 mg/kg, and the surface soil sample at S-03-01-00-S had TPH at 550 mg/kg. According to the SAP (Tetra Tech, 2014a), there are no temporal bounds on the soil data; therefore, available historical data are included in Figure 2-3. However, because historical soil boring locations were resampled during the 2014 sampling event (Figure 2-3) and because the 2014 soil samples were analyzed per current analytical procedures (Tetra Tech, 2014a), it is recommended that risk management decisions be made based primarily on the 2014 data.

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion/GA Leachability Criterion[1]	RIDEM Industrial Direct Exposure Criterion/GB Leachability Criterion[1]	03SS0010002	03SB0010204	03SB0010406	03SB0010610
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SS0010002	03SB0010204	03SB0010406	03SB0010610
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			0	2	4	6
BOTTOM DEPTH			2	4	6	10
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**8.7**	**170**	**10**	**12**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.93 U	0.71 U	0.64 U	0.77 U
Total TPH[2][3]	500	2500	**8.7**	**170**	**10**	**12**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**3.6**	**5.6**	**4.7**	**3.2**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SS0020002	03SB0020204	03SB0020406	03SB0020610
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SS0020002	03SB0020204	03SB0020406	03SB0020610
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			0	2	4	6
BOTTOM DEPTH			2	4	6	10
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**100**	**8.3**	**23**	**16**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.76 U	0.75 U	0.65 U	0.65 U
Total TPH[2][3]	500	2500	**100**	**8.3**	**23**	**16**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**4.6**	**4.6**	**4.4**	**4.4**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SS0030002	03SB0030204	03SB0030406	03SB0030610
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SS0030002	03SB0030204	03SB0030406	03SB0030610
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			0	2	4	6
BOTTOM DEPTH			2	4	6	10
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**190**	1.7 U	**15**	**13**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.73 U	0.58 U	0.82 U	0.64 U
Total TPH[2][3]	500	2500	**190**	1.7 U	**15**	**13**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**3.5**	**4**	**11**	**3.2**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SS0040002	03SB0040204	03SB0040204-D	03SB0040406
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SS0040002	03SB0040204	03SB0040204-D	03SB0040406
SAMPLE CODE			NORMAL	ORIG	DUP	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			0	2	2	4
BOTTOM DEPTH			2	4	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**160**	1.7 U	**8.8**	**8.8**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.65 U	0.69 U	0.68 U	0.72 U
Total TPH[2][3]	500	2500	**160**	1.7 U	**8.8**	**8.8**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**3**	**4**	**3.7**	**6.6**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0040610	03SS0050002	03SB0050204	03SB0050406
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SB0040610	03SS0050002	03SB0050204	03SB0050406
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	4
BOTTOM DEPTH			10	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**14**	9 U	**17**	**8.2**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.66 U	0.84 U	0.80 U	0.71 U
Total TPH[2][3]	500	2500	**14**	9 U	**17**	**8.2**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**4.1**	**6.4**	**6.3**	**6.1**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0050610	03SS0060002	03SB0060204	03SB0060406
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SB0050610	03SS0060002	03SB0060204	03SB0060406
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	4
BOTTOM DEPTH			10	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**11**	**15**	**21**	**12**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.69 U	0.86 U	0.81 U	0.65 U
Total TPH[2][3]	500	2500	**11**	**15**	**21**	**12**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**4.3**	**8.1**	**2.7**	**8.7**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0060610	03SS0070002	03SB0070204	03SB0070406
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SB0060610	03SS0070002	03SB0070204	03SB0070406
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	4
BOTTOM DEPTH			10	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	14	540	18	35
TPH-GRO (MTBE through Naphthalene)	500	2500	0.69 U	0.71 U	0.63 U	0.53 U
Total TPH[2][3]	500	2500	14	540	18	35
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	6.6	4.6	3.1	2.2

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0070610	03SS007A0002	03SS007A0204	03SS007A0406
SAMPLE DATE			20141010	20141013	20141013	20141013
SAMPLE ID			03SB0070610	03SS007A0002	03SS007A0204	03SS007A0406
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	4
BOTTOM DEPTH			10	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	34	16	8.7	89
TPH-GRO (MTBE through Naphthalene)	500	2500	0.71 U	0.69 U	0.64 U	0.73 U
Total TPH[2][3]	500	2500	34	16	8.7	89
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	5.3	5.6	5.2	4.9

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SS007A0610	03SS0080002	03SB0080204	03SB0080204-D
SAMPLE DATE			20141013	20141010	20141010	20141010
SAMPLE ID			03SS007A0610	03SS0080002	03SB0080204	03SB0080204-D
SAMPLE CODE			NORMAL	NORMAL	ORIG	DUP
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	2
BOTTOM DEPTH			10	2	4	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	11	290	14	12
TPH-GRO (MTBE through Naphthalene)	500	2500	0.64 U	0.68 U	0.68 U	0.68 U
Total TPH[2][3]	500	2500	11	290	14	12
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	6.6	3	3.6	3.5

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0080406	03SB0080610	03SS0090002	03SB0090204
SAMPLE DATE			20141010	20141010	20141010	20141010
SAMPLE ID			03SB0080406	03SB0080610	03SS0090002	03SB0090204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	12	13	530	15
TPH-GRO (MTBE through Naphthalene)	500	2500	0.62 U	0.99 U	0.79 U	0.70 U
Total TPH[2][3]	500	2500	12	13	530	15
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	4.2	8.5	6.5	4.2

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0090406	03SB0090610	03SS009A0002	03SB009A0204
SAMPLE DATE			20141010	20141010	20141013	20141013
SAMPLE ID			03SB0090406	03SB0090610	03SS009A0002	03SB009A0204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	25	10	63	47
TPH-GRO (MTBE through Naphthalene)	500	2500	0.67 U	0.71 U	0.71 U	0.64 U
Total TPH[2][3]	500	2500	25	10	63	47
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	2	8	4.7	5.6

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB009A0406	03SB009A0610	03SS0100002	03SB0100204
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB009A0406	03SB009A0610	03SS0100002	03SB0100204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	250	200	120	15
TPH-GRO (MTBE through Naphthalene)	500	2500	0.59 U	2.3	0.64 U	0.71 U
Total TPH[2][3]	500	2500	250	202	120	15
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	5.9	5.7	5.6	9.1

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0100406	03SB0100610	03SS0110002	03SB0110204
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0100406	03SB0100610	03SS0110002	03SB0110204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**300**	**120**	**120**	**11**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.74 U	0.71 U	0.71 U	0.69 U
Total TPH[2][3]	500	2500	**300**	**120**	**120**	**11**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**6.5**	**5.8**	**5.6**	**3.6**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0110406	03SB0110610	03SS0120002	03SB0120204
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0110406	03SB0110610	03SS0120002	03SB0120204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**9**	**55**	**240**	**16**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.58 U	0.7 U	0.64 U	0.60 U
Total TPH[2][3]	500	2500	**9**	**55**	**240**	**16**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**2.4**	**6.5**	**4.7**	**3.6**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0120406	03SB0120610	03SS0130002	03SB0130204
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0120406	03SB0120610	03SS0130002	03SB0130204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**47**	**16**	**78**	**36**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.68 U	0.72 U	0.72 U	0.66 U
Total TPH[2][3]	500	2500	**47**	**16**	**78**	**36**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**2.7**	**9.2**	**6.7**	**7**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0130406	03SB0130610	03SS0140002	03SB0140204
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0130406	03SB0130610	03SS0140002	03SB0140204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	81	390	1000	220
TPH-GRO (MTBE through Naphthalene)	500	2500	0.71 U	0.60 U	0.90 U	0.64 U
Total TPH[2][3]	500	2500	81	390	1000	220
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	8.4 J	4.6	6	3.9

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0140406	03SB0140610	03SS0150002	03SB0150204
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0140406	03SB0140610	03SS0150002	03SB0150204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	230	160	330	26
TPH-GRO (MTBE through Naphthalene)	500	2500	19	460	0.86 U	0.79 U
Total TPH[2][3]	500	2500	249	620	330	26
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	3.7	7.7	7.8	4.3

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0150406	03SB0150610	03SS0160002	03SB0160204
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0150406	03SB0150610	03SS0160002	03SB0160204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	84	79	49 J	17
TPH-GRO (MTBE through Naphthalene)	500	2500	0.57 U	0.76 U	0.69 U	0.86 U
Total TPH[2][3]	500	2500	84	79	49	17
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	3.9	5.9	4.3	6.1

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0160204-D	03SB0160406	03SB0160610	03SS0170002
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0160204-D	03SB0160406	03SB0160610	03SS0170002
SAMPLE CODE			DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**14**	**8.4**	**13**	**40**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.67 U	0.59 U	0.57 U	0.63 U
Total TPH[2][3]	500	2500	**14**	**8.4**	**13**	**40**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**6.5**	**6.3**	**7**	**5.3**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0170204	03SB0170406	03SB0170610	03SS0180002
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0170204	03SB0170406	03SB0170610	03SS0180002
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**7.7**	1.8 U	**200**	**210**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.62 U	0.59 U	0.69 U	0.74 U
Total TPH[2][3]	500	2500	**7.7**	1.8 U	**200**	**210**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**7.7**	**5.1**	**4.1**	**8.2**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SS0180204	03SB0180406	03SB0180610	03SS0190002
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SS0180204	03SB0180406	03SB0180610	03SS0190002
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	1.8 U	**62**	**20**	**100**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.61 U	0.70 U	0.71 U	0.78 U
Total TPH[2][3]	500	2500	1.8 U	**62**	**20**	**100**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**5**	**3.5**	**7.6**	**4.6**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0190204	03SB0190406	03SB0190610	03SS0200002
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0190204	03SB0190406	03SB0190610	03SS0200002
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**7.3**	**20**	**38**	**160 J**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.73 U	0.70 U	0.83 U	0.81 U
Total TPH[2][3]	500	2500	**7.3**	**20**	**38**	**160**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**3.5**	**4.9**	**5.9**	**5.4**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0200204	03SB0200406	03SB0200610	03SS0210002
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0200204	03SB0200406	03SB0200610	03SS0210002
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	1.7 U	1.8 U	**9.8**	**300**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.75 U	0.60 U	0.66 U	0.66 U
Total TPH[2][3]	500	2500	1.7 U	1.8 U	**9.8**	**300**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**3.5**	**5**	**4.7**	**3.2**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0210204	03SB0210406	03SB0210610	03SS0220002
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SB0210204	03SB0210406	03SB0210610	03SS0220002
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	1.9 U	**7.3**	1.8 U	**1100 J**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.73 U	0.58 U	0.73 U	0.70 U
Total TPH[2][3]	500	2500	1.9 U	**7.3**	1.8 U	**1100**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**8.4**	**3.9**	**7.1**	**3**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SS0220002-D	03SB0220204	03SB0220406	03SB0220610
SAMPLE DATE			20141013	20141013	20141013	20141013
SAMPLE ID			03SS0220002-D	03SB0220204	03SB0220406	03SB0220610
SAMPLE CODE			DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			0	2	4	6
BOTTOM DEPTH			2	4	6	10
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**740**	**7.7**	**49**	**110**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.67 U	0.77 U	0.69 U	0.62 U
Total TPH[2][3]	500	2500	**740**	**7.7**	**49**	**110**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**3.4**	**6.9**	**3.3**	**7.2**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SS0230002	03SS0230002-D	03SB0230204	03SB0230406
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SS0230002	03SS0230002-D	03SB0230204	03SB0230406
SAMPLE CODE			ORIG	DUP	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			0	0	2	4
BOTTOM DEPTH			2	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**9.5**	1.9 U	**9.7**	**12**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.78 U	0.79 U	1.5 U	0.71 U
Total TPH[2][3]	500	2500	**9.5**	1.9 U	**9.7**	**12**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**11**	**10**	**12**	**7.4**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0230610	03SS0240002	03SB0240204	03SB0240406
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0230610	03SS0240002	03SB0240204	03SB0240406
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	4
BOTTOM DEPTH			10	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**11**	**170**	1.8 U	**13**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.79 U	0.75 U	0.80 U	0.67 U
Total TPH[2][3]	500	2500	**11**	**170**	1.8 U	**13**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**10**	**9.1**	**3.5**	**11**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0240610	03SS0250002	03SB0250204	03SB0250406
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0240610	03SS0250002	03SB0250204	03SB0250406
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	4
BOTTOM DEPTH			10	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**40**	**85**	**8**	**11**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.72 U	0.71 U	0.92 U	0.69 U
Total TPH[2][3]	500	2500	**40**	**85**	**8**	**11**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**9.6**	**6.1**	**4.7**	**8.2**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0250610	03SS0260002	03SB0260204	03SB0260406
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0250610	03SS0260002	03SB0260204	03SB0260406
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	4
BOTTOM DEPTH			10	2	4	6
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**32**	**59**	**12**	**11**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.69 U	0.73 U	0.69 U	0.73 U
Total TPH[2][3]	500	2500	**32**	**59**	**12**	**11**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**7.6**	**4.3**	**9.9**	**3.5**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0260610	03SS0270002	03SB0270204	03SB0270204-D
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0260610	03SS0270002	03SB0270204	03SB0270204-D
SAMPLE CODE			NORMAL	NORMAL	ORIG	DUP
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			6	0	2	2
BOTTOM DEPTH			10	2	4	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**13**	**110**	**14**	**14**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.70 U	0.68 U	1.0 U	0.98 U
Total TPH[2][3]	500	2500	**13**	**110**	**14**	**14**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**7**	**5.1**	**6.1**	**5.2**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0270406	03SB0270610	03SS0280002	03SB0280204
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0270406	03SB0270610	03SS0280002	03SB0280204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	11	14	180	13
TPH-GRO (MTBE through Naphthalene)	500	2500	0.82 U	0.75 U	0.71 U	0.65 U
Total TPH[2][3]	500	2500	11	14	180	13
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	7.4	7.5	5.5	3.3

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0280406	03SB0280610	03SS0290002	03SB0290204
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0280406	03SB0280610	03SS0290002	03SB0290204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	15	35	170	16
TPH-GRO (MTBE through Naphthalene)	500	2500	0.62 U	0.74 U	0.70 U	0.76 U
Total TPH[2][3]	500	2500	15	35	170	16
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	6.8	6.7	4.5	5.7

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0290406	03SB0290610	03SS0300002	03SB0300204
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0290406	03SB0290610	03SS0300002	03SB0300204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	12	11	330	15
TPH-GRO (MTBE through Naphthalene)	500	2500	0.71 U	0.64 U	0.73 U	0.66 U
Total TPH[2][3]	500	2500	12	11	330	15
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	6.5	9.9	6.7	8.9

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0300406	03SB0300610	03SS0310002	03SB0310204
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0300406	03SB0300610	03SS0310002	03SB0310204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**28**	**27**	**26**	1.8 U
TPH-GRO (MTBE through Naphthalene)	500	2500	0.62 U	0.69 U	0.63 U	0.68 U
Total TPH[2][3]	500	2500	**28**	**27**	**26**	1.8 U
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**5.6**	**4.7**	**5.1**	**6.1**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0310406	03SB0310610	03SS0320002	03SB0320204
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0310406	03SB0310610	03SS0320002	03SB0320204
SAMPLE CODE			NORMAL	NORMAL	NORMAL	ORIG
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			4	6	0	2
BOTTOM DEPTH			6	10	2	4
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	1.8 U	1.9 U	**53**	**9.7**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.67 U	0.68 U	0.73 U	0.66 U
Total TPH[2][3]	500	2500	1.8 U	1.9 U	**53**	**9.7**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**5.2**	**8.7**	**7.2**	**5.4**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0320204-D	03SB0320406	03SB0320610	03SB0330002
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0320204-D	03SB0320406	03SB0320610	03SB0330002
SAMPLE CODE			DUP	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**7.8**	**13**	**10**	**22**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.66 U	0.68 U	0.79 U	0.58 U
Total TPH[2][3]	500	2500	**7.8**	**13**	**10**	**22**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**5.6**	**9.2**	**8.2**	**19**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0330204	03SB0330406	03SB0330610	03SS0340002
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0330204	03SB0330406	03SB0330610	03SS0340002
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	2.1 U	1.7 U	**10**	**130**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.92 U	0.66 U	0.89 U	0.66 U
Total TPH[2][3]	500	2500	2.1 U	1.7 U	**10**	**130**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**21**	**2.7**	**19**	**5.6**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0340204	03SB0340406	03SB0340610	03SS0350002
SAMPLE DATE			20141014	20141014	20141014	20141014
SAMPLE ID			03SB0340204	03SB0340406	03SB0340610	03SS0350002
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6	0
BOTTOM DEPTH			4	6	10	2
Petroleum Hydrocarbons (mg/kg)						
TPH-DRO (C9-C40)	500	2500	**7.4**	**13**	**11**	**17**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.60 U	0.67 U	0.71 U	0.59 U
Total TPH[2][3]	500	2500	**7.4**	**13**	**11**	**17**
Miscellaneous Parameters						
Percent Moisture (%)	NA	NA	**4**	**4.5**	**7.8**	**3.1**

LOCATION	RIDEM Residential Direct Exposure Criterion[1]	RIDEM Industrial Direct Exposure Criterion[1]	03SB0350204	03SB0350406	03SB0350610
SAMPLE DATE			20141014	20141014	20141014
SAMPLE ID			03SB0350204	03SB0350406	03SB0350610
SAMPLE CODE			NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL
TOP DEPTH			2	4	6
BOTTOM DEPTH			4	6	10
Petroleum Hydrocarbons (mg/kg)					
TPH-DRO (C9-C40)	500	2500	**8.9**	1.8 U	**110**
TPH-GRO (MTBE through Naphthalene)	500	2500	0.75 U	0.68 U	0.71 U
Total TPH[2][3]	500	2500	**8.9**	1.8 U	**110**
Miscellaneous Parameters					
Percent Moisture (%)	NA	NA	**1.9**	**6.9**	**7.5**

TABLE 2-1

PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Detected concentrations are presented in bold font.
Concentrations exceeding the RIDEM Residential direct exposure criteria (DEC) are highlighted yellow.
No detected concentrations exceed the RIDEM Industrial DEC.

Footnotes:
1 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
2 - Total TPH results are the sum of detected TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene) results.
3 - For samples in which both TPH-DRO (C9-40) and TPH-GRO (MTBE through naphthalene) were non-detected, the detection limit for TPH-DRO (C9-C40) was used for total TPH.

Definitions:
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
MTBE = Methyl tert-butyl ether
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:
J = Estimated value.
U = Non-detected value.

TABLE 2-2

SUMMARY OF DESCRIPTIVE STATISTICS - PETROLEUM HYDROCARBON RESULTS
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	Minimum Detection[1]	Maximum Detection[1]	Sample With Maximum Detection	Frequency of Detection[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	RIDEM Residential DEC[5]	# Exceeding RIDEM Residential DEC[2]	RIDEM Industrial DEC[5]	# Exceeding RIDEM Industrial DEC[2]	RIDEM GA Leachability[5]	# Exceeding RIDEM GA Leachability[2]	RIDEM GB Leachability[5]	# Exceeding RIDEM GB Leachability[2]
TPH-DRO (C9-C40)	7.3	1100 J	03SS0220002	133/148	1.7 - 9	83.8	75.4	143	500	4	2500	0	500	4	2500	0
TPH-GRO (MTBE through naphthalene)	2.3	460	03SB0140610	3/148	0.53 - 1.5	160	3.6	37.8	500	0	2500	0	500	0	2500	0
Total TPH[3][4]	7.3	1100	03SS0220002	133/148	1.7 - 9	78.7	87.4	150	500	5	2500	0	500	5	2500	0

Footnotes:

1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and number of exceedances.
3 - Total TPH are the sum of detected TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene) results.
4 - For samples in which both TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene) were non-detected, the detection limit for TPH-DRO (C9-C40) was used for total TPH.
5 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

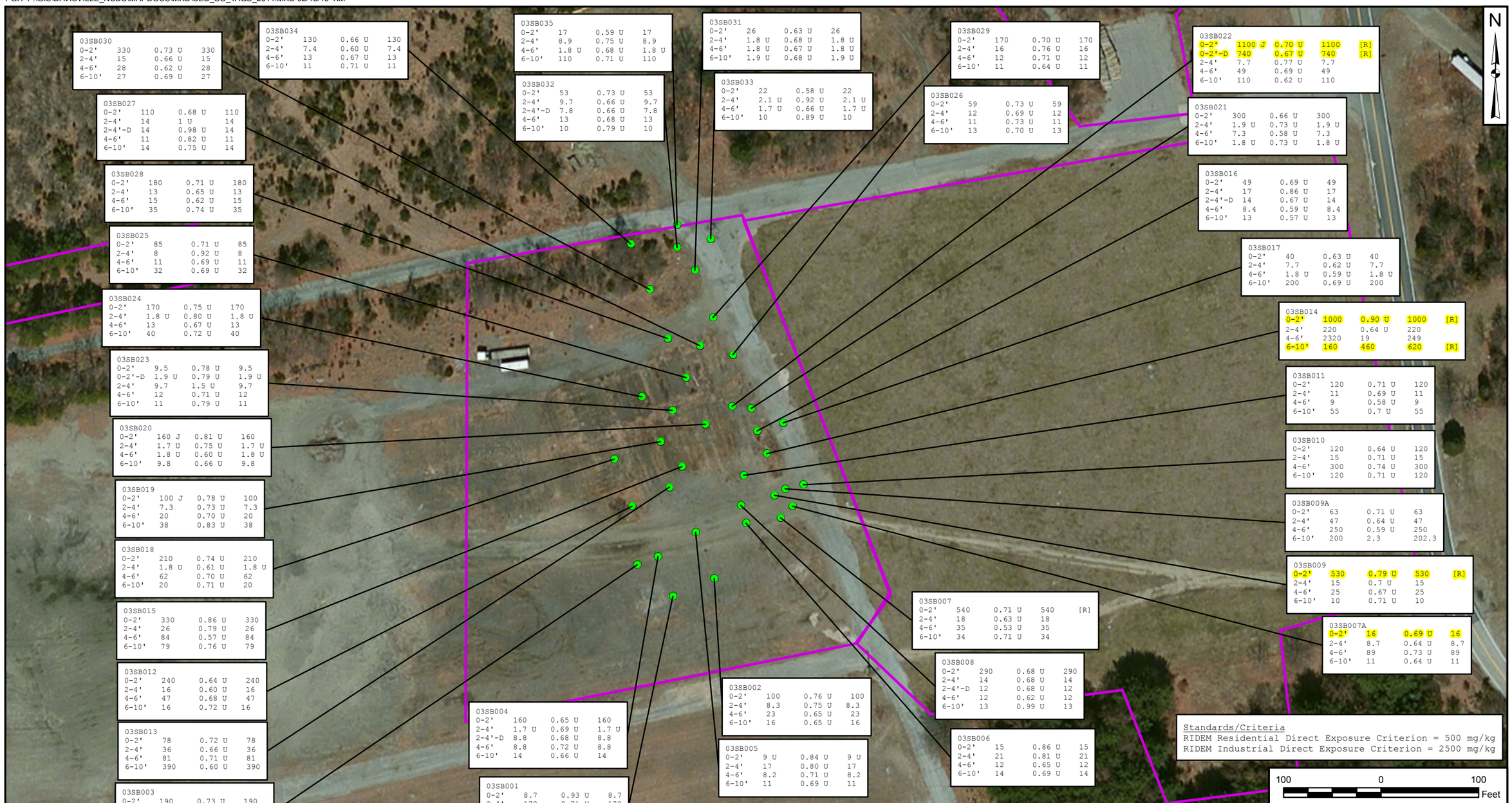
Definitions:

DEC = Direct Exposure Criterion
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
J = Estimated Value
MTBE = Methyl tert-butyl ether
TPH = Total Petroleum Hydrocarbons

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\SITE3_TPH_PROPSAMPLOC_R1.MXD 02/17/15 KM

DRAWN BY: J. NOVAK	DATE: 03/05/13	TETRA TECH	CONTRACT NUMBER: ___ / CTO NUMBER: WE01
CHECKED BY: L. CIOFANI	DATE: 02/17/15	HISTORICAL AND NEW TPH SAMPLING LOCATIONS AT SITE 03 FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA FORMER NCBC DAVISVILLE NORTH KINGSTOWN, RHODE ISLAND	APPROVED BY: ___ / DATE: ___
REVISED BY: K. MOORE	DATE: 02/17/15		APPROVED BY: ___ / DATE: ___
SCALE: AS NOTED			FIGURE NO.: 2-1 / REV: 0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_SO_TAGS_2014.MXD 02/18/15 KM



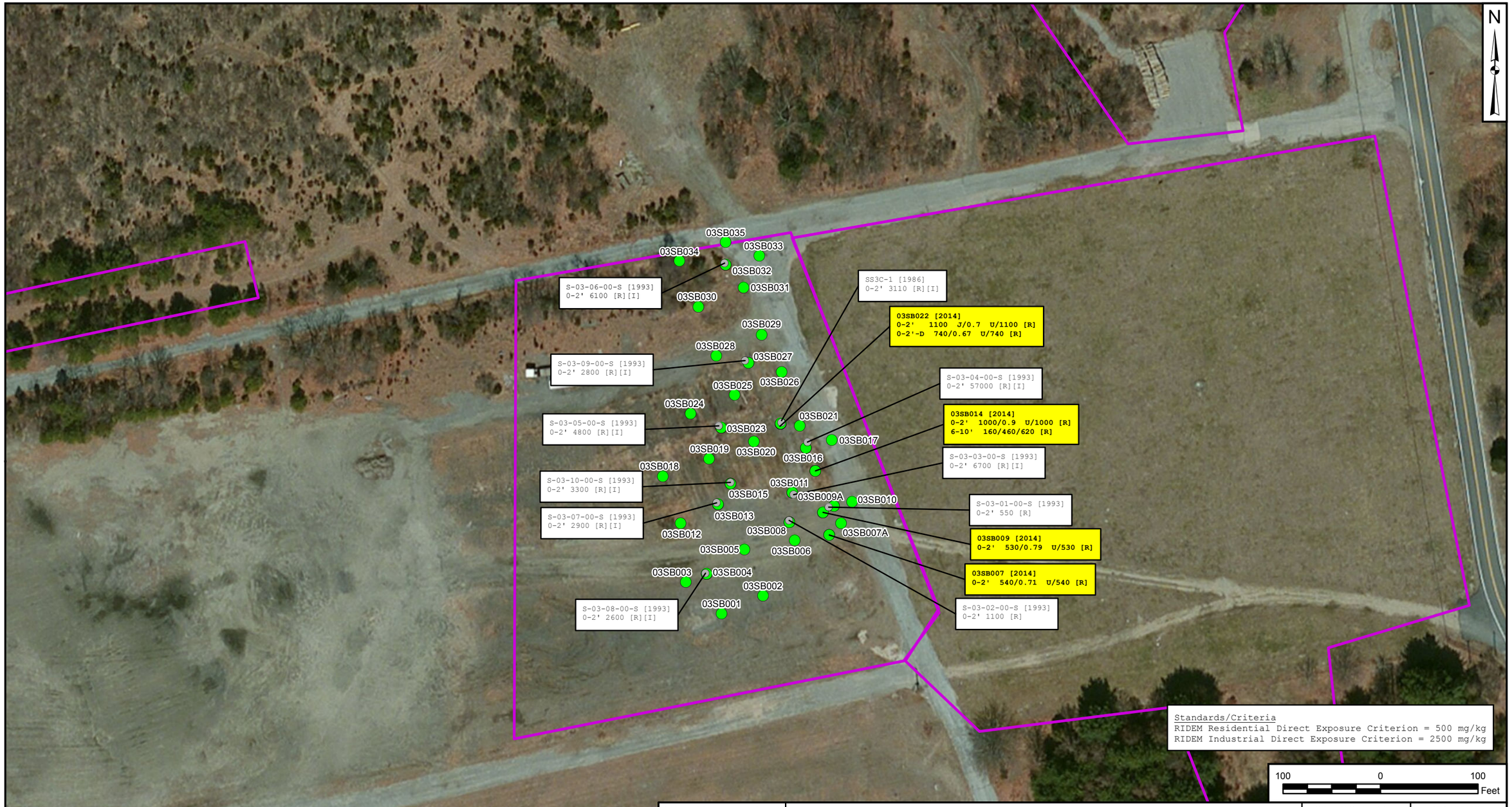
DRAWN BY	DATE
K. MOORE	1/8/15
CHECKED BY	DATE
L. CIOFANI	02/18/15
REVISED BY	DATE
—	—
SCALE	
AS NOTED	

TETRA TECH

PETROLEUM HYDROCARBONS RESULTS IN SITE 03 SOIL
OCTOBER 2014 EVENT
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CONTRACT NUMBER	CTO NUMBER
—	—
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
FIGURE NO.	REV
2-2	0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_SO_HIST_TAGS_2014.MXD 02/18/15 KM



Legend

- Historical Soil Samples
- Soil Sample
- Site Boundary

NOTES:
1. Concentrations presented (from left to right) are: TPH-DRO (C9-C40), TPH-GRO, and Total Petroleum Hydrocarbons (for 2014 data only). Highlighted data are from 2014.
2. -D = Duplicate
3. [R] = Exceeds RIDEM Residential Direct Exposure Criterion
4. [I] = Exceeds RIDEM Industrial Direct Exposure Criterion
5. All units are mg/kg
6. Untagged locations were sampled, but no detected concentration exceeded standards/criteria.

DRAWN BY	DATE
K. MOORE	1/8/15
CHECKED BY	DATE
L. CIOFANI	02/18/15
REVISED BY	DATE
—	—
SCALE	
AS NOTED	

TETRA TECH

PETROLEUM HYDROCARBONS EXCEEDANCES IN SITE 03 SOIL
(OCTOBER 2014 AND HISTORICAL)
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CONTRACT NUMBER	CTO NUMBER
—	—
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
FIGURE NO.	REV
2-3	0

3.0 PROBLEM NO. 2: CHARACTERIZATION OF GROUNDWATER AT SITES 02/03 (IN SUPPORT OF THE EVALUATION OF LEACHING POTENTIAL)

The SAP provided the following background information and formal problem statement for Problem 2:

- **Background.** The HHRA for Site 02 soil, included as part of a risk evaluation for the CED Area (Tetra Tech, 2014b), evaluated exposures to surface and subsurface soil for potential receptors including construction workers, industrial workers, recreational users, and hypothetical future residents. No COCs were identified for direct contact based on soil data for Site 02; however, a qualitative evaluation for chemical migration from soil to groundwater was also conducted and concluded that naphthalene in subsurface soil was a potential COC for migration to groundwater.

  As stated in Section 2, an HHRA for Site 03 was conducted as part of a risk evaluation for the CED Area (Tetra Tech, 2014b). In addition to being selected as a COC for direct contact with soil, TPH was selected as a potential COC for migration from soil to groundwater based on exceedances of RIDEM GA leachability (500 mg/kg) and GB leachability (2,500 mg/kg) criteria. The available historical results indicate that TPH contamination is present in surface soil at Site 03. The source of TPH is expected to be historical contaminant disposal activities conducted at the site and/or potential releases from heavy equipment. The horizontal and vertical extent of soil contamination exceeding RIDEM leachability criteria is currently unknown.

- **Problem Statement**. The Final Human Health Risk Evaluation for the Construction Equipment Department (Tetra Tech, 2014b) identified possible soil COCs for groundwater protection (TPH, naphthalene, and possibly select metals). Specifically, the report concluded that there is limited evidence of the potential for contaminant migration from soil to groundwater at the CED Area. Historical shallow groundwater data are available, and such data allow for an understanding of potential chemical migration from soil to groundwater, but the data are relatively old and incomplete for some possible COCs. Therefore, additional data must be collected from select upgradient and CED Area wells to better evaluate the potential for leachability of COCs from soil to groundwater.

Figure 3-1 presents the groundwater monitoring well sampling locations at the CED Area. The SAP provides the primary rationale for the selection of monitoring wells sampled to address Problem Statement No. 2. For example, for Site 02, wells downgradient of locations where naphthalene was previously detected in subsurface soil (MW02-04S and MW02-10S) were selected for sampling. Figure 3-2 shows detections of naphthalene in soil at Site 02. For Site 03, wells downgradient of Site 03 (MW03-04S and MW03-05S) were selected for sampling primarily because TPH soil contamination was detected at locations scattered across Site 03. Additional wells across Sites 02 and 03 (specified in the

SAP) were also recommended for sampling to obtain adequate spatial coverage of the sites and to provide data needed to address concerns regarding the potential for migration of metals from soil to groundwater. Regardless of the primary reason for sampling at a particular Site 02/03 well, samples from all of the selected wells were analyzed for the same target analyte list (presented below). However, as documented in the Base Realignment and Closure (BRAC) Clean-Up Team (BCT) notes for September 9, 2014, three wells specified in the SAP could not be located, 25-MW-01S, MW03-01S, and MW02-06S. Based on BCT discussions, MW01-12S was sampled as a substitute well for 25-MW-01S, and replacement wells were installed and sampled at locations MW03-01S, and MW02-06S. Newly installed shallow wells MW01-12S and MW03-01S were screened at 14 to 24 feet bgs, and MW02-06 was screened from 16 to 26 feet bgs. The selected screened intervals were determined in consultation with Navy and United States Environmental Protection Agency (USEPA) hydrogeologists.

The SAP also selected three wells (MW01-10S, MW01-13S, and MW01-14S) for sampling to provide data regarding CED Area-specific upgradient conditions, particularly for metals. These wells were selected as potentially unimpacted wells because they are located upgradient of and/or distal from the CED source areas and, based on historical data, contained very low-level volatile organic compound (VOC) and metals contamination. These wells were sampled for the same analyte list as the other CED Area wells (specified below).

Water quality parameters were measured and recorded in the field for all existing and newly installed wells sampled. These parameters included dissolved oxygen (DO), specific conductance, temperature, pH, oxidation-reduction potential (ORP), and turbidity. Water level measurements were collected from each well at the time of sample collection.

A total of 17 existing shallow wells at Sites 02/03 (including the two newly installed wells) were sampled. Fourteen of the shallow wells are associated with Sites 02 and 03 and were sampled to characterize groundwater at these sites and to support the FFS for CED Area soils. Three additional wells, upgradient of and/or distal from these sites, were sampled to provide CED Area-specific upgradient data. All groundwater samples from these wells were analyzed for Target Compound List (TCL) VOCs, naphthalene, Target Analyte List (TAL) metals (total and dissolved), and TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene).

The results of field observations and screening (i.e., PID readings) are documented on the boring and sampling logs included in Attachment B. The PID readings did not suggest the presence of benzene or other aromatic compounds in the soil borings for the newly installed wells. There was also no visual evidence of staining or olfactory evidence of contamination.

The analytical results for the groundwater samples collected in 2014 to address Problem No. 2 are presented on a well-by-well basis in Table 3-1, and descriptive statistics for all chemicals detected at least once are provided in Table 3-2. The following items summarize the results:

- No chlorinated VOCs (CVOCs) were detected in shallow groundwater at Sites 02/03. CVOCs have been detected historically in deeper groundwater zones. However, groundwater underlying the CED Area has been impacted by groundwater contamination migrating into the area from the upgradient Nike PR-58 site. CVOCs are the primary contaminants in the groundwater plume extending from the Nike PR-58 site. An interpretation of the analytical data (Tetra Tech, 2015) concluded that any residual CVOC contamination present at Sites 02/03 is not contributing significantly to the CVOCs detected in deep groundwater at these Sites.

- No chemical concentrations in shallow groundwater samples exceeded available Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs) or RIDEM groundwater objectives.

- As depicted on Figure 3-3, chemical concentrations reported for one shallow well (MW02-10S) exceeded USEPA Regional Screening Levels (RSLs) for tapwater. The naphthalene concentration exceeded the USEPA cancer-based RSL, and the dissolved manganese concentration exceeded the USEPA non-cancer-based RSL based on an HI of 1.

    - MW02-10S, downgradient of a subsurface soil sample location with a naphthalene detection, was the only well with a naphthalene detection (see Figure 3-2). The concentration detected (2.8 µg/L) is less than the concentration reported for the sample collected in 2007 from MW02-10S (32.4 µg/L).
    - VOCs were detected in samples from MW02-10S in 2007, and several VOCs were detected in MW02-10S during the 2014 sampling event (e.g., cyclohexane); however, benzene, toluene, ethylbenzene, and xylenes (BTEX), typically found in petroleum products and detected in samples collected historically from this well, were not. A review of current and historical data suggests that fuel-related contaminants detected at this location are attenuating over time.
    - Although the dissolved manganese concentration exceeded the RSL, the total manganese concentration was less than the RSL.

- TPH-DRO (C9-C40) and TPH-GRO (MTBE through naphthalene) were only detected in samples from MW02-10S. TPH-DRO (C9-C40) concentrations were 0.64 to 0.68 mg/L, and TPH-GRO (MTBE through naphthalene) concentrations were 1.3 to 1.4 mg/L for the original and duplicate sample collected at MW02-10S. The presence of TPH-DRO (C9-C40) and TPH-GRO (MTBE through

naphthalene) suggests the well may have been impacted by a petroleum-related source of contamination.

- The maximum total and dissolved cobalt concentrations exceed the USEPA non-cancer-based RSL based on a HI of 0.1 but not the RSL based on an HI of 1. Similarly, the maximum dissolved concentrations reported for cadmium and iron exceed the USEPA RSL based on a HI of 0.1 but not the RSL based on a HI of 1.

- Although few concentrations detected in Site 02/03 wells exceed USEPA or RIDEM screening criteria (see Table 3-2), the concentrations from Sites 02/03 wells generally do exceed those reported the three upgradient wells (MW01-10S, MW01-13S, and MW01-14S). Only metals were detected in the upgradient wells.

- A synoptic round of water levels was collected across the CED Area and CED Area Drum Removal Area on October 15, 2014. Groundwater data from the synoptic water level event were used to construct potentiometric maps for the shallow and deep overburden and bedrock zones. Figures 3-4 to 3-6 present the October 2014 data for the shallow and deep overburden and bedrock zones. Based on these figures, groundwater flow between the CED Drum Removal Area (MW03-15 through MW03-17) and CED Area is approximately southeast for both the shallow and deep groundwater monitoring zones. This overall flow pathway is consistent with previous synoptic events that present the results of more comprehensive site-wide evaluations (conducted in 2007 and 2009). Further, analysis of CED Drum Removal Area wells shows that at a minimum, there is also a northeasterly component of groundwater flow between MW03-16 to MW03-15.

In overview, the groundwater data for the Sites 02/03 wells sampled in 2014 do not suggest significant chemical migration from soils to groundwater. However, naphthalene present in Site 02 soil may be contributing to the naphthalene concentration detected in groundwater at MW02-10S (see Figure 3-2). Chemical concentrations detected in samples collected from MW02-10S suggest the presence of potential (albeit low) fuel-related contamination.

SUMMARY OF HHRA

An HHRA was conducted for the CED Area Sites 02/03 to evaluate potential risks and hazards for exposures to shallow-zone groundwater (see Attachment A-1). The groundwater samples collected in September/October 2014 were used in the HHRA and were compared to conservative screening levels for direct contact exposures. Vapor intrusion exposures for groundwater were evaluated separately (see Attachment A-2). Additionally, groundwater data from the most recent sampling round were used to update the qualitative evaluation for migration from soil to groundwater originally presented in the 2014

risk evaluation (Tetra Tech, 2014b). Screening criteria for trivalent chromium were used to evaluate total chromium data in the HHRA because historical site activities for the CED Area do not suggest that hexavalent chromium would be a significant contaminant at any sites in the investigation area.

The chemicals of potential concern (COPCs) for Sites 02/03 selected based on comparisons to USEPA RSLs for tap water (USEPA, 2015), DWA MCLs (USEPA, 2012), and RIDEM GA and GB Groundwater Objectives (RIDEM, 2011) include naphthalene, cobalt, and manganese for direct contact with shallow groundwater.

Receptors evaluated in the HHRA were current and future construction workers and hypothetical residents (child, adult, and lifelong). Future industrial workers and future recreational users are potential receptors at the CED Area but are not expected to have direct contact exposure to groundwater. The receptors were evaluated for exposure to groundwater via incidental ingestion, dermal contact, and inhalation of volatiles. Residential exposures were evaluated using current USEPA RSLs (2015), and construction worker exposures were evaluated using risk-based concentrations (RBCs) representing $1x10^{-6}$ cancer risk levels and hazard quotients (HQs) of 1 (i.e., no-adverse-effect concentrations) developed using applicable site-specific exposure assumptions and methodology similar to that used by USEPA to develop the RSLs.

Summary of Cancer and Non-Cancer Risk Estimates and Risk Contributors(1) for Receptor Direct Contact with Groundwater

Data Set Evaluated	Receptor	Risk Estimates(2)(3)	
		Cancer Risk Estimate	Hazard Index
Shallow Groundwater	Construction Worker	$5x10^{-10}$	0.02
	Hypothetical Resident	*$2x10^{-5}$* (naphthalene)	0.6

1 A non-carcinogenic risk contributor is a chemical that contributes substantially (i.e., greater than an HQ of 0.1) to a target organ-specific hazard index (HI) that exceeds 1. A carcinogenic risk contributor is a chemical with a calculated cancer risk estimate exceeding $1x10^{-6}$ when the medium-specific total cancer risk for the receptor exceeds $1x10^{-5}$.

2 Italicized carcinogenic risk estimates exceed the State of Rhode Island cancer risk limit of $1x10^{-5}$. A chemical name presented in parentheses indicates the primary chemical driving risk.

3 The cancer risk and HI presented for the hypothetical resident are for the lifelong resident and child resident (i.e., the most conservative receptors), respectively.

As shown in the summary table, all HIs for groundwater are less than the target level of 1. Therefore, no adverse non-carcinogenic effects are expected for exposures to subsurface soil or shallow groundwater based on medium-specific HIs.

Cancer risk estimates for all groundwater evaluations are less than the USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$. The cancer risk estimate for hypothetical residents exceeds and the State of Rhode Island cancer risk benchmark of $1x10^{-5}$ due to naphthalene. Uncertainty associated with the exposure point concentration (EPC) for naphthalene is discussed below.

Conclusions regarding possible COCs for migration to groundwater identified during the 2014 risk evaluation (Tetra Tech, 2014b) were re-evaluated using groundwater data from the most recent sampling event (September/October 2014). Based on the qualitative evaluation, residual soil chemical concentrations do not appear to be negatively impacting groundwater quality at Sites 02/03.

The following sources of uncertainty should be considered when interpreting the results of the HHRA for Sites 02/03:

- Maximum concentrations were used as EPCs for naphthalene and cobalt in groundwater instead of 95-percent upper confidence limits (UCLs) because of the small number of detections (i.e., only one detection of naphthalene and two detections of cobalt for the shallow groundwater data set). Using maximum concentrations for EPCs is conservative and likely results in an overestimation of risk. Naphthalene was the sole contributor to cancer risks exceeding the State of Rhode Island cancer risk benchmark; therefore, considerable uncertainty is associated with the EPC for naphthalene. Naphthalene was detected in only 1 of 14 groundwater samples.

- Although the future land use of the sites/study areas is anticipated to be industrial/commercial or recreational, the residential land use scenario was evaluated in this HHRA primarily to support risk-management decisions.

- Cobalt was selected as a COPC in groundwater based on an exceedance of the USEPA RSL based on an HQ of 0.1. Uncertainty is associated with selecting cobalt as a COPC because cobalt is a naturally occurring metal and because the conservative screening levels (based on USEPA criteria) are likely to be less than background levels of cobalt expected at some sites. For example, the Maryland Department of the Environment (MDE) selected revised criteria for cobalt of 50 mg/kg for soil and 100 µg/L for groundwater based on Agency for Toxic Substances and Disease Registry (ATSDR) toxicity values (MDE, 2013). The MDE value for cobalt in groundwater is considerably greater than the current USEPA cobalt RSL for tap water (6 µg/L based on an HQ of 1). Cobalt would not have been selected as a COPC for groundwater at Sites 02/03 if the MDE value for cobalt was used for COPC selection instead of the USEPA RSL.

Naphthalene was identified as a risk driver for hypothetical resident exposure to groundwater based on the HHRA. However, unacceptable Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) risks were not predicted for receptor exposure to groundwater, and naphthalene was only detected in 1 of 14 groundwater samples. Also, the maximum concentration was used as the EPC, which likely overestimates risks. Additionally, naphthalene was detected at well MW02-10S, where historical concentrations of fuel-related contaminants were greater than current concentrations, indicating that contaminant concentrations may be attenuating over time. Therefore, naphthalene is not selected as a COC for groundwater at Sites 02/03. However, future monitoring is recommended to ensure that concentrations continue to attenuate over time.

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW01-10S MW01-10S-NWG-100214 20141002 NORMAL (UPGRADIENT) 13 23**	**MW01-12S MW01-12S-NWG-100214 20141002 NORMAL 14 24**	**MW01-13S MW01-13Sa-NWG-102714 20141027 NORMAL (UPGRADIENT) 13 23**
VOLATILES (UG/L)								
CYCLOHEXANE	NA	NA	13000	N	NA	1 U	1 U	1 U
ISOPROPYLBENZENE	NA	NA	450	N	NA	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	NA	NA		NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	NA	NA	1100	N	NA	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	100	NA	0.17	C	NA	0.1 U	0.1 U	0.1 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	11.7 U	8.5 U	**22**
ANTIMONY	6	NA	7.8	N	NA	0.2 U	0.2 U	**0.28 J**
BARIUM	2000	NA	3800	N	2000	**5.1 J**	**5.6 J**	**5.6 J**
CADMIUM	5	NA	9.2	N	5	0.15 U	**0.09 J**	0.15 U
CALCIUM	NA	NA	NA		NA	**4380**	**10600**	**5710**
CHROMIUM	100	NA	22000	C[4]	100	**0.91 J**	**0.72 J**	**1.1 J**
COBALT	NA	NA	6	N	NA	0.033 U	0.24 U	**0.56**
COPPER	NA	NA	800	N	1300	0.38 U	**0.39 J**	**0.51 J**
IRON	NA	NA	14000	N	NA	20 U	20 U	**32.5 J**
MAGNESIUM	NA	NA	NA		NA	**1430**	**1700**	**1620**
MANGANESE	NA	NA	430	N	NA	**3.9**	**1.4 J**	**24.1**
NICKEL	100	NA	390	N	NA	0.25 U	**0.74 J**	**4.1**
POTASSIUM	NA	NA	NA		NA	**822**	**1340**	**1320**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U	0.25 U
SODIUM	NA	NA	NA		NA	**6420**	**4090**	**8590**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	1 U
ZINC	NA	NA	6000	N	NA	1 U	**1.4 J**	9.3 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW01-10S MW01-10S-NWG-100214 20141002 NORMAL (UPGRADIENT) 13 23**	**MW01-12S MW01-12S-NWG-100214 20141002 NORMAL 14 24**	**MW01-13S MW01-13Sa-NWG-102714 20141027 NORMAL (UPGRADIENT) 13 23**
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	11.2 U	6.7 U	**22.1**
ANTIMONY	6	NA	7.8	N	NA	0.2 U	0.2 U	**0.4 J**
BARIUM	2000	NA	3800	N	2000	**5 J**	**5.6 J**	**5.4 J**
CADMIUM	5	NA	9.2	N	5	0.15 U	0.15 U	0.15 U
CALCIUM	NA	NA	NA		NA	**4330**	**10200**	**5520**
CHROMIUM	100	NA	22000	C[4]	100	**0.83 J**	**0.88 J**	**0.85 J**
COBALT	NA	NA	6	N	NA	0.048 U	0.23 U	**0.52**
COPPER	NA	NA	800	N	1300	**0.72 J**	**1.1 J**	**1.2 J**
IRON	NA	NA	14000	N	NA	20 U	20 U	**16.6 J**
LEAD	15	NA	15		15	0.15 U	0.15 U	0.19 U
MAGNESIUM	NA	NA	NA		NA	**1400**	**1640**	**1560**
MANGANESE	NA	NA	430	N	NA	**4.2**	**2.6**	**22.5**
NICKEL	100	NA	390	N	NA	**0.83 J**	**1.3**	**4.4**
POTASSIUM	NA	NA	NA		NA	**831**	**1330**	**1280**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U	0.25 U
SODIUM	NA	NA	NA		NA	**6330**	**4000**	**8320**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	1 U
ZINC	NA	NA	6000	N	NA	**1.6 J**	**2 J**	**22.4 J**
PETROLEUM HYDROCARBONS (MG/L)								
TPH-DRO (C9-C40)	NA	NA	NA		NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	20 U	20 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW01-14S	MW02-03S	
SAMPLE ID						MW01-14S-NWG-100914	MW02-03S-NWG-100314	MW02-03S-NWG-111914
SAMPLE DATE	RIDEM GA	RIDEM GB	EPA RSL		EPA MCL	20141009	20141003	20141119
SAMPLE TYPE	(ug/L)[1]	(ug/L)[1]	(ug/L)[2]		(ug/L)[3]	NORMAL (UPGRADIENT)	NORMAL	ORIGINAL
TOP DEPTH (FEET)						15	20	20
BOTTOM DEPTH (FEET)						25	30	30
VOLATILES (UG/L)								
CYCLOHEXANE	NA	NA	13000	N	NA	1 U	--	1 U
ISOPROPYLBENZENE	NA	NA	450	N	NA	0.5 U	--	0.5 U
METHYL CYCLOHEXANE	NA	NA	NA		NA	1 U	--	1 U
TRICHLOROFLUOROMETHANE	NA	NA	1100	N	NA	1 UJ	--	**0.67 J**
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	100	NA	0.17	C	NA	0.1 U	0.1 U	--
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	17.8 U	**202**	--
ANTIMONY	6	NA	7.8	N	NA	0.2 U	0.2 U	--
BARIUM	2000	NA	3800	N	2000	**10.5**	**16.2**	--
CADMIUM	5	NA	9.2	N	5	**0.091 J**	**0.19 J**	--
CALCIUM	NA	NA	NA		NA	**7810**	**34300**	--
CHROMIUM	100	NA	22000	C[4]	100	**1.2 J**	**1 J**	--
COBALT	NA	NA	6	N	NA	0.098 U	**0.56 J**	--
COPPER	NA	NA	800	N	1300	0.38 U	**0.72 J**	--
IRON	NA	NA	14000	N	NA	20 U	20 U	--
MAGNESIUM	NA	NA	NA		NA	**2110**	**5850**	--
MANGANESE	NA	NA	430	N	NA	**4.4**	**18.3**	--
NICKEL	100	NA	390	N	NA	**1.6**	**0.9 J**	--
POTASSIUM	NA	NA	NA		NA	**1590**	**2020**	--
SELENIUM	50	NA	100	N	50	**0.37 J**	**0.41 J**	--
SODIUM	NA	NA	NA		NA	**27000**	**11800**	--
VANADIUM	NA	NA	86	N	NA	1 U	1 U	--
ZINC	NA	NA	6000	N	NA	**1.5 J**	**5.6**	--

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW01-14S	MW02-03S	
SAMPLE ID						MW01-14S-NWG-100914	MW02-03S-NWG-100314	MW02-03S-NWG-111914
SAMPLE DATE	RIDEM GA	RIDEM GB	EPA RSL		EPA MCL	20141009	20141003	20141119
SAMPLE TYPE	(ug/L)[1]	(ug/L)[1]	(ug/L)[2]		(ug/L)[3]	NORMAL (UPGRADIENT)	NORMAL	ORIGINAL
TOP DEPTH (FEET)						15	20	20
BOTTOM DEPTH (FEET)						25	30	30
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	19.3 U	**184**	--
ANTIMONY	6	NA	7.8	N	NA	0.2 U	0.2 U	--
BARIUM	2000	NA	3800	N	2000	**10.1**	**15.6**	--
CADMIUM	5	NA	9.2	N	5	**0.088 J**	**0.19 J**	--
CALCIUM	NA	NA	NA		NA	**7480**	**32800**	--
CHROMIUM	100	NA	22000	C[4]	100	**0.89 J**	**1 J**	--
COBALT	NA	NA	6	N	NA	0.078 U	0.51 U	--
COPPER	NA	NA	800	N	1300	**0.58 J**	**1.7 J**	--
IRON	NA	NA	14000	N	NA	**150 J**	20 U	--
LEAD	15	NA	15		15	0.22 U	0.17 U	--
MAGNESIUM	NA	NA	NA		NA	**2030**	**5650**	--
MANGANESE	NA	NA	430	N	NA	**14.4**	**17.5**	--
NICKEL	100	NA	390	N	NA	**1.4**	**1.4**	--
POTASSIUM	NA	NA	NA		NA	**1540**	**1970**	--
SELENIUM	50	NA	100	N	50	**0.36 J**	**0.34 J**	--
SODIUM	NA	NA	NA		NA	**25900**	**11200**	--
VANADIUM	NA	NA	86	N	NA	1 U	1 U	--
ZINC	NA	NA	6000	N	NA	**1.4 J**	**6**	--
PETROLEUM HYDROCARBONS (MG/L)								
TPH-DRO (C9-C40)	NA	NA	NA		NA	0.05 U	0.05 U	**--**
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	**--**	20 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW02-03S MW02-03S-NWG-111914-D 20141119 DUPLICATE 20 30**	**MW02-04S MW02-04Sa-NWG-100614 20141006 NORMAL 16 26**	**MW02-05S MW02-05S-NWG-100214 20141002 NORMAL 16.5 26.5**
VOLATILES (UG/L)								
CYCLOHEXANE	NA	NA	13000	N	NA	1 U	1 U	1 U
ISOPROPYLBENZENE	NA	NA	450	N	NA	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	NA	NA		NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	NA	NA	1100	N	NA	**0.88 J**	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	100	NA	0.17	C	NA	--	0.1 U	0.1 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	--	16.5 U	**38.2**
ANTIMONY	6	NA	7.8	N	NA	--	0.2 U	**0.41 J**
BARIUM	2000	NA	3800	N	2000	--	**2 J**	**8 J**
CADMIUM	5	NA	9.2	N	5	--	**0.1 J**	**0.16 J**
CALCIUM	NA	NA	NA		NA	--	**5770**	**7940**
CHROMIUM	100	NA	22000	C[4]	100	--	**1.6 J**	**1.3 J**
COBALT	NA	NA	6	N	NA	--	0.042 U	0.19 U
COPPER	NA	NA	800	N	1300	--	0.38 U	**0.28 J**
IRON	NA	NA	14000	N	NA	--	**14.5 J**	20 U
MAGNESIUM	NA	NA	NA		NA	--	**1420**	**1830**
MANGANESE	NA	NA	430	N	NA	--	**4.1**	**10.8**
NICKEL	100	NA	390	N	NA	--	**0.59 J**	**0.57 J**
POTASSIUM	NA	NA	NA		NA	--	**711**	**776**
SELENIUM	50	NA	100	N	50	--	**0.15 J**	**0.2 J**
SODIUM	NA	NA	NA		NA	--	**5900**	**6470**
VANADIUM	NA	NA	86	N	NA	--	**1.3 J**	1 U
ZINC	NA	NA	6000	N	NA	--	1 U	**1.2 J**

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW02-03S MW02-03S-NWG-111914-D 20141119 DUPLICATE 20 30**	**MW02-04S MW02-04Sa-NWG-100614 20141006 NORMAL 16 26**	**MW02-05S MW02-05S-NWG-100214 20141002 NORMAL 16.5 26.5**
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	--	6 U	**34**
ANTIMONY	6	NA	7.8	N	NA	--	0.2 U	**0.28 J**
BARIUM	2000	NA	3800	N	2000	--	**2 J**	**5.2 J**
CADMIUM	5	NA	9.2	N	5	--	**0.088 J**	**0.18 J**
CALCIUM	NA	NA	NA		NA	--	**5650**	**7920**
CHROMIUM	100	NA	22000	C[4]	100	--	**1.4 J**	**1.3 J**
COBALT	NA	NA	6	N	NA	--	0.049 U	0.17 U
COPPER	NA	NA	800	N	1300	--	**0.87 J**	**1.6 J**
IRON	NA	NA	14000	N	NA	--	20 U	20 U
LEAD	15	NA	15		15	--	0.15 U	0.23 U
MAGNESIUM	NA	NA	NA		NA	--	**1380**	**1830**
MANGANESE	NA	NA	430	N	NA	--	**3.9**	**12.1**
NICKEL	100	NA	390	N	NA	--	**1**	**5.3**
POTASSIUM	NA	NA	NA		NA	--	**716**	**801**
SELENIUM	50	NA	100	N	50	--	0.25 U	0.25 U
SODIUM	NA	NA	NA		NA	--	**5780**	**6570**
VANADIUM	NA	NA	86	N	NA	--	**0.64 J**	1 U
ZINC	NA	NA	6000	N	NA	--	**1.5 J**	**8**
PETROLEUM HYDROCARBONS (MG/L)								
TPH-DRO (C9-C40)	NA	NA	NA		NA	--	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	20 U	20 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW02-06S MW02-06Sa-NWG-102914 20141029 NORMAL 16 26**	**MW02-08S MW02-08Sa-NWG-100114 20141001 NORMAL 11.8 26.8**	**MW02-09S MW02-09S-NWG-100814 20141008 NORMAL 12 27**
VOLATILES (UG/L)								
CYCLOHEXANE	NA	NA	13000	N	NA	1 U	1 U	1 U
ISOPROPYLBENZENE	NA	NA	450	N	NA	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	NA	NA		NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	NA	NA	1100	N	NA	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	100	NA	0.17	C	NA	0.1 U	0.1 U	0.1 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	12.8 U	17 U	13.7 U
ANTIMONY	6	NA	7.8	N	NA	**0.36 J**	0.2 U	0.2 U
BARIUM	2000	NA	3800	N	2000	**8.2 J**	**12.6**	**2.9 J**
CADMIUM	5	NA	9.2	N	5	0.15 U	**0.13 J**	0.15 U
CALCIUM	NA	NA	NA		NA	**12100**	**27300**	**3230**
CHROMIUM	100	NA	22000	C[4]	100	0.25 U	**1.2 J**	**0.93 J**
COBALT	NA	NA	6	N	NA	0.15 U	1.2 U	0.05 U
COPPER	NA	NA	800	N	1300	**0.55 J**	0.71 U	0.38 U
IRON	NA	NA	14000	N	NA	20 U	40.3 U	20 U
MAGNESIUM	NA	NA	NA		NA	**1800**	**2470**	**814**
MANGANESE	NA	NA	430	N	NA	**13.8**	**6.5**	**3.5**
NICKEL	100	NA	390	N	NA	**0.39 J**	**2.6**	0.25 U
POTASSIUM	NA	NA	NA		NA	**1290**	**2410**	**697**
SELENIUM	50	NA	100	N	50	0.25 U	**0.27 J**	0.25 U
SODIUM	NA	NA	NA		NA	**5710**	**5960**	**5830**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	1 U
ZINC	NA	NA	6000	N	NA	7.2 U	**2.7**	1 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW02-06S MW02-06Sa-NWG-102914 20141029 NORMAL 16 26**	**MW02-08S MW02-08Sa-NWG-100114 20141001 NORMAL 11.8 26.8**	**MW02-09S MW02-09S-NWG-100814 20141008 NORMAL 12 27**
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	15.6 U	4.4 U	14.2 U
ANTIMONY	6	NA	7.8	N	NA	**0.3 J**	0.2 U	0.2 U
BARIUM	2000	NA	3800	N	2000	**8.1 J**	**11**	**3 J**
CADMIUM	5	NA	9.2	N	5	0.15 U	**0.13 J**	**0.54 J**
CALCIUM	NA	NA	NA		NA	**11800**	**28300**	**3100**
CHROMIUM	100	NA	22000	C[4]	100	0.25 U	**1 J**	**1.1 J**
COBALT	NA	NA	6	N	NA	0.19 U	1.3 U	0.027 U
COPPER	NA	NA	800	N	1300	**1.7 J**	**2.2**	**1.2 J**
IRON	NA	NA	14000	N	NA	**37.6 J**	20 U	20 U
LEAD	15	NA	15		15	0.17 U	0.15 U	**2.7**
MAGNESIUM	NA	NA	NA		NA	**1780**	**2570**	**784**
MANGANESE	NA	NA	430	N	NA	**13.9**	**6.8**	**3.3**
NICKEL	100	NA	390	N	NA	**1.4**	**3.3**	**3.6**
POTASSIUM	NA	NA	NA		NA	**1310**	**2530**	**708**
SELENIUM	50	NA	100	N	50	0.25 U	**0.29 J**	0.25 U
SODIUM	NA	NA	NA		NA	**5650**	**6260**	**5650**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	1 U
ZINC	NA	NA	6000	N	NA	**11.8 J**	**5.1**	**6.9**
PETROLEUM HYDROCARBONS (MG/L)								
TPH-DRO (C9-C40)	NA	NA	NA		NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	20 U	20 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW02-10S		MW02-11S
SAMPLE ID						MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	RIDEM GA (ug/L)[1]	RIDEM GB (ug/L)[1]	EPA RSL (ug/L)[2]		EPA MCL (ug/L)[3]	20141010	20141010	20141008
SAMPLE TYPE						ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH (FEET)						13	13	13
BOTTOM DEPTH (FEET)						28	28	28
VOLATILES (UG/L)								
CYCLOHEXANE	NA	NA	13000	N	NA	**10**	**10**	1 U
ISOPROPYLBENZENE	NA	NA	450	N	NA	**14**	**14**	0.5 U
METHYL CYCLOHEXANE	NA	NA	NA		NA	**8**	**8**	1 U
TRICHLOROFLUOROMETHANE	NA	NA	1100	N	NA	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	100	NA	0.17	C	NA	**2.6**	**2.8**	0.1 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	**49.1**	**37**	**80.1**
ANTIMONY	6	NA	7.8	N	NA	**0.23 J**	**0.2 J**	0.2 U
BARIUM	2000	NA	3800	N	2000	**3.5 J**	**3.5 J**	**2.1 J**
CADMIUM	5	NA	9.2	N	5	**0.2 J**	**0.12 J**	**0.1 J**
CALCIUM	NA	NA	NA		NA	**11900**	**12300**	**3610**
CHROMIUM	100	NA	22000	C[4]	100	**2.9**	**2.8**	**1.8 J**
COBALT	NA	NA	6	N	NA	0.54 U	0.55 U	0.12 U
COPPER	NA	NA	800	N	1300	**0.81 J**	**0.7 J**	**0.49 J**
IRON	NA	NA	14000	N	NA	**1010**	**1050**	**163 J**
MAGNESIUM	NA	NA	NA		NA	**1370**	**1410**	**1050**
MANGANESE	NA	NA	430	N	NA	**332**	**357**	**8**
NICKEL	100	NA	390	N	NA	**0.93 J**	**0.91 J**	**0.77 J**
POTASSIUM	NA	NA	NA		NA	**1400**	**1460**	**614**
SELENIUM	50	NA	100	N	50	**0.31 J**	**0.22 J**	0.25 U
SODIUM	NA	NA	NA		NA	**7370**	**7620**	**5580**
VANADIUM	NA	NA	86	N	NA	**1.1 J**	1 U	1 U
ZINC	NA	NA	6000	N	NA	**46.6**	**58.8**	1 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW02-10S		MW02-11S
SAMPLE ID						MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	RIDEM GA (ug/L)[1]	RIDEM GB (ug/L)[1]	EPA RSL (ug/L)[2]		EPA MCL (ug/L)[3]	20141010	20141010	20141008
SAMPLE TYPE						ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH (FEET)						13	13	13
BOTTOM DEPTH (FEET)						28	28	28
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	3.6 U	3.3 U	13.4 U
ANTIMONY	6	NA	7.8	N	NA	0.2 U	0.2 U	0.2 U
BARIUM	2000	NA	3800	N	2000	**3.6 J**	**3.6 J**	**2 J**
CADMIUM	5	NA	9.2	N	5	**0.13 J**	**0.12 J**	**0.14 J**
CALCIUM	NA	NA	NA		NA	**11200**	**11200**	**3620**
CHROMIUM	100	NA	22000	C[4]	100	**0.87 J**	**0.82 J**	**1.3 J**
COBALT	NA	NA	6	N	NA	0.63 U	0.64 U	0.038 U
COPPER	NA	NA	800	N	1300	**0.27 J**	**0.58 J**	**0.93 J**
IRON	NA	NA	14000	N	NA	**1580**	**1530**	**180 J**
LEAD	15	NA	15		15	0.15 U	0.15 U	**0.55 J**
MAGNESIUM	NA	NA	NA		NA	**1500**	**1500**	**1030**
MANGANESE	NA	NA	430	N	NA	**501**	**491**	**5.2**
NICKEL	100	NA	390	N	NA	**1.2**	**1.8**	**1.3**
POTASSIUM	NA	NA	NA		NA	**1520**	**1530**	**626**
SELENIUM	50	NA	100	N	50	**0.31 J**	**0.26 J**	**0.27 J**
SODIUM	NA	NA	NA		NA	**7870**	**7870**	**5570**
VANADIUM	NA	NA	86	N	NA	**0.78 J**	1 U	**0.94 J**
ZINC	NA	NA	6000	N	NA	**51.7**	**49.7**	**2.5**
PETROLEUM HYDROCARBONS (MG/L)								
TPH-DRO (C9-C40)	NA	NA	NA		NA	**0.68**	**0.64**	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	**1300**	**1400**	20 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW03-01S		MW03-02S
SAMPLE ID						MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914
SAMPLE DATE	RIDEM GA	RIDEM GB	EPA RSL		EPA MCL	20141029	20141029	20140929
SAMPLE TYPE	(ug/L)[1]	(ug/L)[1]	(ug/L)[2]		(ug/L)[3]	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH (FEET)						14	14	8.5
BOTTOM DEPTH (FEET)						24	24	23.5
VOLATILES (UG/L)								
CYCLOHEXANE	NA	NA	13000	N	NA	1 U	1 U	1 U
ISOPROPYLBENZENE	NA	NA	450	N	NA	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	NA	NA		NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	NA	NA	1100	N	NA	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	100	NA	0.17	C	NA	0.1 U	0.1 U	0.1 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	**57**	**50.6**	9.8 U
ANTIMONY	6	NA	7.8	N	NA	**0.29 J**	**0.26 J**	**0.37 J**
BARIUM	2000	NA	3800	N	2000	**76.8**	**73.7**	8.5 U
CADMIUM	5	NA	9.2	N	5	0.32 U	0.29 U	0.15 U
CALCIUM	NA	NA	NA		NA	**25000**	**24700**	**4840**
CHROMIUM	100	NA	22000	C[4]	100	**0.24 J**	**0.35 J**	**1.4 J**
COBALT	NA	NA	6	N	NA	**0.93**	**0.9**	0.029 U
COPPER	NA	NA	800	N	1300	**1.1 J**	**0.88 J**	0.24 U
IRON	NA	NA	14000	N	NA	**76.3 J**	**15.3 J**	20 U
MAGNESIUM	NA	NA	NA		NA	**6110**	**6070**	**771**
MANGANESE	NA	NA	430	N	NA	**159**	**157**	**4.5**
NICKEL	100	NA	390	N	NA	**2.3**	**2.4**	0.2 U
POTASSIUM	NA	NA	NA		NA	**2730**	**2730**	**1990**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U	**0.21 J**
SODIUM	NA	NA	NA		NA	**61800**	**61600**	**4020**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	**0.65 J**
ZINC	NA	NA	6000	N	NA	6 U	**14.7 J**	**0.82 J**

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW03-01S		MW03-02S
SAMPLE ID						MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914
SAMPLE DATE	RIDEM GA (ug/L)[1]	RIDEM GB (ug/L)[1]	EPA RSL (ug/L)[2]		EPA MCL (ug/L)[3]	20141029	20141029	20140929
SAMPLE TYPE						ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH (FEET)						14	14	8.5
BOTTOM DEPTH (FEET)						24	24	23.5
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	**41.9**	**48.9**	8.6 U
ANTIMONY	6	NA	7.8	N	NA	**0.28 J**	**0.28 J**	**0.29 J**
BARIUM	2000	NA	3800	N	2000	**75.1**	**76.9**	8.4 U
CADMIUM	5	NA	9.2	N	5	0.27 U	0.27 U	0.15 U
CALCIUM	NA	NA	NA		NA	**25900**	**26900**	**4670**
CHROMIUM	100	NA	22000	C[4]	100	**0.33 J**	**0.55 J**	**0.94 J**
COBALT	NA	NA	6	N	NA	**0.65**	**0.64**	0.033 U
COPPER	NA	NA	800	N	1300	**1.6 J**	**1 J**	1.1 U
IRON	NA	NA	14000	N	NA	20 U	**240**	20 U
LEAD	15	NA	15		15	0.18 U	0.3 U	0.15 U
MAGNESIUM	NA	NA	NA		NA	**6370**	**6580**	**745**
MANGANESE	NA	NA	430	N	NA	**172**	**180**	**3.7**
NICKEL	100	NA	390	N	NA	**3**	**2.4**	0.9 U
POTASSIUM	NA	NA	NA		NA	**2780**	**2900**	**1940**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U	**0.23 J**
SODIUM	NA	NA	NA		NA	**60900**	**63200**	**3940**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	1 U
ZINC	NA	NA	6000	N	NA	**13.4 J**	**47.4 J**	**1.4 J**
PETROLEUM HYDROCARBONS (MG/L)								
TPH-DRO (C9-C40)	NA	NA	NA		NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	20 U	20 U

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW03-03S MW03-03Sa-NWG-103014 20141030 NORMAL 15 25**	**MW03-04S MW03-04S-NWG-093014 20140930 NORMAL 10 25**	**MW03-05S MW03-05S-NWG-100114 20141001 NORMAL 11 26**
VOLATILES (UG/L)								
CYCLOHEXANE	NA	NA	13000	N	NA	1 U	1 U	1 U
ISOPROPYLBENZENE	NA	NA	450	N	NA	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	NA	NA		NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	NA	NA	1100	N	NA	1 U	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	100	NA	0.17	C	NA	0.1 U	0.1 U	0.1 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	**57.4**	**79**	**24.2**
ANTIMONY	6	NA	7.8	N	NA	**0.27 J**	0.2 U	0.2 U
BARIUM	2000	NA	3800	N	2000	**9.4 J**	9 U	7.1 U
CADMIUM	5	NA	9.2	N	5	0.3 U	**0.1 J**	**0.49 J**
CALCIUM	NA	NA	NA		NA	**11500**	**3870**	**3710**
CHROMIUM	100	NA	22000	C[4]	100	**0.61 J**	**1.4 J**	**0.9 J**
COBALT	NA	NA	6	N	NA	0.2 U	0.065 U	0.03 U
COPPER	NA	NA	800	N	1300	**1.2 J**	0.33 U	0.24 U
IRON	NA	NA	14000	N	NA	**61.6 J**	98.3 U	31.6 U
MAGNESIUM	NA	NA	NA		NA	**2380**	**886**	**760**
MANGANESE	NA	NA	430	N	NA	**49.1**	**15.5**	**6.2**
NICKEL	100	NA	390	N	NA	**2.7**	0.27 U	**12.5**
POTASSIUM	NA	NA	NA		NA	**1590**	**1530**	**747**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U	0.25 U
SODIUM	NA	NA	NA		NA	**12200**	**5460**	**4250**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	1 U
ZINC	NA	NA	6000	N	NA	**16.9 J**	**1.2 J**	**3.9**

TABLE 3-1
SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE TYPE TOP DEPTH (FEET) BOTTOM DEPTH (FEET)	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW03-03S MW03-03Sa-NWG-103014 20141030 NORMAL 15 25**	**MW03-04S MW03-04S-NWG-093014 20140930 NORMAL 10 25**	**MW03-05S MW03-05S-NWG-100114 20141001 NORMAL 11 26**
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	**28.2**	16.7 U	11.5 U
ANTIMONY	6	NA	7.8	N	NA	**0.21 J**	**0.22 J**	0.2 U
BARIUM	2000	NA	3800	N	2000	**9.7 J**	8.7 U	6.2 U
CADMIUM	5	NA	9.2	N	5	0.15 U	**2.3**	**0.43 J**
CALCIUM	NA	NA	NA		NA	**11600**	**3850**	**3440**
CHROMIUM	100	NA	22000	C[4]	100	**0.85 J**	**1.1 J**	**0.94 J**
COBALT	NA	NA	6	N	NA	0.18 U	0.051 U	0.025 U
COPPER	NA	NA	800	N	1300	**1.4 J**	0.99 U	0.74 U
IRON	NA	NA	14000	N	NA	20 U	20 U	20 U
LEAD	15	NA	15		15	0.18 U	0.098 U	0.077 U
MAGNESIUM	NA	NA	NA		NA	**2380**	**869**	**706**
MANGANESE	NA	NA	430	N	NA	**46.8**	**14.5**	**5.4**
NICKEL	100	NA	390	N	NA	**1.7**	0.94 U	**10.6**
POTASSIUM	NA	NA	NA		NA	**1600**	**1540**	**697**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U	0.25 U
SODIUM	NA	NA	NA		NA	**12200**	**5470**	**3990**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	**0.64 J**
ZINC	NA	NA	6000	N	NA	**11.3 J**	**1.8 J**	**5**
PETROLEUM HYDROCARBONS (MG/L)								
TPH-DRO (C9-C40)	NA	NA	NA		NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	20 U	20 U

Detected concentrations are presented in bold font. Concentrations exceeding the lower of USEPA RSLs and RIDEM residential criteria are shaded yellow. Concentrations exceeding MCLs are presented in bold red font and shaded yellow.

Footnotes:

1 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.

3 - Federal Maximum Contaminant Levels (MCLs), 2012 Edition of the Drinking Water Standards and Health Advisories. Office of Water, Washington, D.C. EPA 822-S-12-001. April.

4 - The screening value is for trivalent chromium.

Definitions:

DRO = Diesel Range Organics
GRO = Gasoline Range Organics
MTBE = Methyl tert-butyl ether
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:

J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 3-2

SUMMARY OF DESCRIPTIVE STATISTICS - EXISTING WELLS
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	Minimum Detection[1]	Maximum Detection[1]	Sample With Maximum Detection	Frequency of Detection[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	RIDEM GA Objective[3]	# Exceeding RIDEM GA Objective[2]	RIDEM GB Objective[3]	# Exceeding RIDEM GB Objective[2]	EPA Tap Water RSL[4]		# Exceeding EPA Tap Water RSL[2]	EPA MCL[5]	# Exceeding EPA MCL[2]	EPA VISL[6]	# Exceeding EPA VISL[2]
VOLATILES (UG/L)																			
CYCLOHEXANE	10	10	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/17	1 - 1	10.0	1.1	2	NA	NA	NA	NA	13000	N	0	NA	NA	1000 N	0
ISOPROPYLBENZENE	14	14	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/17	0.5 - 0.5	14	1.1	3.3	NA	NA	NA	NA	450	N	0	NA	NA	890 N	0
METHYL CYCLOHEXANE	8	8	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/17	1 - 1	8.0	0.9	2	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	0.67 J	0.88 J	MW02-03S-NWG-111914-D	1/17	1 - 1	0.8	0.5	0	NA	NA	NA	NA	1100	N	0	NA	NA	180 N	0
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)																			
NAPHTHALENE	2.6	2.8	MW02-10S-NWG-101014-D	1/17	0.1 - 0.1	2.7	0.2	1	100	0	NA	NA	**0.17**	**C**	1	NA	NA	4.6 C	0
METALS (UG/L)																			
ALUMINUM	22	202	MW02-03S-NWG-100314	9/17	8.5 - 17.8	66.6	38.5	50	NA	NA	NA	NA	20000	N	0	NA	NA	NA	NA
ANTIMONY	0.2 J	0.41 J	MW02-05S-NWG-100214	7/17	0.2 - 0.2	0.3	0.2	0	6	0	NA	NA	7.8	N	0	NA	NA	NA	NA
BARIUM	2 J	76.8	MW03-01SA-NWG-102914	14/17	7.1 - 9	11.9	10.5	17	2000	0	NA	NA	3800	N	0	2000	0	NA	NA
CADMIUM	0.09 J	0.49 J	MW03-05S-NWG-100114	10/17	0.15 - 0.32	0.2	0.1	0	5	0	NA	NA	9.2	N	0	5	0	NA	NA
CALCIUM	3230	34300	MW02-03S-NWG-100314	17/17	-	10801.2	10801.2	9281	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
CHROMIUM	0.24 J	2.9	MW02-10S-NWG-101014	16/17	0.25 - 0.25	1.2	1.1	1	100	0	NA	NA	22000	C[7]	0	100	0	NA	NA
COBALT	0.56	0.93	MW03-01SA-NWG-102914	3/17	0.029 - 1.2	0.7	0.2	0	NA	NA	NA	NA	6	N	0	NA	NA	NA	NA
COPPER	0.28 J	1.2 J	MW03-03Sa-NWG-103014	9/17	0.24 - 0.71	0.7	0.4	0	NA	NA	NA	NA	800	N	0	1300	0	NA	NA
IRON	14.5 J	1050	MW02-10S-NWG-101014-D	6/17	20 - 98.3	224.6	89	245	NA	NA	NA	NA	14000	N	0	NA	NA	NA	NA
MAGNESIUM	760	6110	MW03-01SA-NWG-102914	17/17	-	2022	2022	1578	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
MANGANESE	1.4 J	357	MW02-10S-NWG-101014-D	17/17	-	39.8	39.8	87	NA	NA	NA	NA	430	N	0	NA	NA	NA	NA
NICKEL	0.39 J	12.5	MW03-05S-NWG-100114	13/17	0.2 - 0.27	2.4	1.8	3	100	0	NA	NA	390	N	0	NA	NA	NA	NA
POTASSIUM	614	2730	MW03-01SA-NWG-102914, MW03-01SA-NWG-102914-D	17/17	-	1388.6	1388.6	631	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
SELENIUM	0.15 J	0.41 J	MW02-03S-NWG-100314	7/17	0.25 - 0.25	0.3	0.2	0	50	0	NA	NA	100	N	0	50	0	NA	NA
SODIUM	4020	61800	MW03-01SA-NWG-102914	17/17	-	11086.8	11086.8	14134	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
VANADIUM	0.65 J	1.3 J	MW02-04Sa-NWG-100614	3/17	1 - 1	0.9	0.6	0	NA	NA	NA	NA	86	N	0	NA	NA	NA	NA
ZINC	0.82 J	58.8	MW02-10S-NWG-101014-D	11/17	1 - 9.3	8.8	6.3	13	NA	NA	NA	NA	6000	N	0	NA	NA	NA	NA
DISSOLVED METALS (UG/L)																			
ALUMINUM	22.1	184	MW02-03S-NWG-100314	5/17	3.3 - 19.3	62.7	22.3	44	NA	NA	NA	NA	20000	N	0	NA	NA	NA	NA
ANTIMONY	0.21 J	0.4 J	MW01-13Sa-NWG-102714	7/17	0.2 - 0.2	0.3	0.2	0	6	0	NA	NA	7.8	N	0	NA	NA	NA	NA
BARIUM	2 J	76.9	MW03-01SA-NWG-102914-D	14/17	6.2 - 8.7	11.6	10.2	17	2000	0	NA	NA	3800	N	0	2000	0	NA	NA
CADMIUM	0.088 J	2.3	MW03-04S-NWG-093014	10/17	0.15 - 0.27	0.4	0.3	1	5	0	NA	NA	9.2	N	0	5	0	NA	NA
CALCIUM	3100	32800	MW02-03S-NWG-100314	17/17	-	10698.8	10698.8	9361	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
CHROMIUM	0.33 J	1.4 J	MW02-04Sa-NWG-100614	16/17	0.25 - 0.25	1.0	0.9	0	100	0	NA	NA	22000	C[7]	0	100	0	NA	NA
COBALT	0.52	0.65	MW03-01SA-NWG-102914	2/17	0.025 - 1.3	0.6	0.2	0	NA	NA	NA	NA	6	N	0	NA	NA	NA	NA
COPPER	0.27 J	2.2	MW02-08Sa-NWG-100114	14/17	0.74 - 1.1	1.2	1.1	1	NA	NA	NA	NA	800	N	0	1300	0	NA	NA
IRON	16.6 J	1580	MW02-10S-NWG-101014	6/17	20 - 20	344.0	127.9	372	NA	NA	NA	NA	14000	N	0	NA	NA	NA	NA
LEAD	0.55 J	2.7	MW02-09S-NWG-100814	2/17	0.077 - 0.3	1.6	0.3	1	15	0	NA	NA	15		0	15	0	NA	NA
MAGNESIUM	706	6580	MW03-01SA-NWG-102914-D	17/17	-	2019.4	2019.4	1623	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
MANGANESE	2.6	501	MW02-10S-NWG-101014	17/17	-	49.9	49.9	122	NA	NA	NA	NA	**430**	**N**	1	NA	NA	NA	NA
NICKEL	0.83 J	10.6	MW03-05S-NWG-100114	15/17	0.9 - 0.94	2.8	2.5	3	100	0	NA	NA	390	N	0	NA	NA	NA	NA
POTASSIUM	626	2900	MW03-01SA-NWG-102914-D	17/17	-	1399.1	1399.1	652	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
SELENIUM	0.23 J	0.36 J	MW01-14S-NWG-100914	6/17	0.25 - 0.25	0.3	0.2	0	50	0	NA	NA	100	N	0	NA	NA	NA	NA
SODIUM	3940	63200	MW03-01SA-NWG-102914-D	17/17	-	10985	10985	14149	NA	NA	NA	NA	NA		0	NA	NA	NA	NA
VANADIUM	0.64 J	0.94 J	MW02-11S-NWG-100814	4/17	1 - 1	0.8	0.6	0	NA	NA	NA	NA	86	N	0	NA	NA	NA	NA
ZINC	1.4 J	51.7	MW02-10S-NWG-101014	17/17	-	10.0	10.0	13	NA	NA	NA	NA	6000	N	0	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/L)																			
TPH-DRO (C9-C40)	0.64	0.68	MW02-10S-NWG-101014	1/17	0.05 - 0.05	0.7	0.1	0	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (UG/L)																			
TPH-GRO (MTBE THROUGH NAPHTHALENE)	1300	1400	MW02-10S-NWG-101014-D	1/17	20 20	1350.0	88.8	325	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA

Footnotes:

1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.

2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and number of exceedances.

3 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.

5 - Federal Maximum Contaminant Levels (MCLs), 2012 Edition of the Drinking Water Standards and Health Advisories.
Office of Water, Washington, D.C. EPA 822-S-12-001. April.

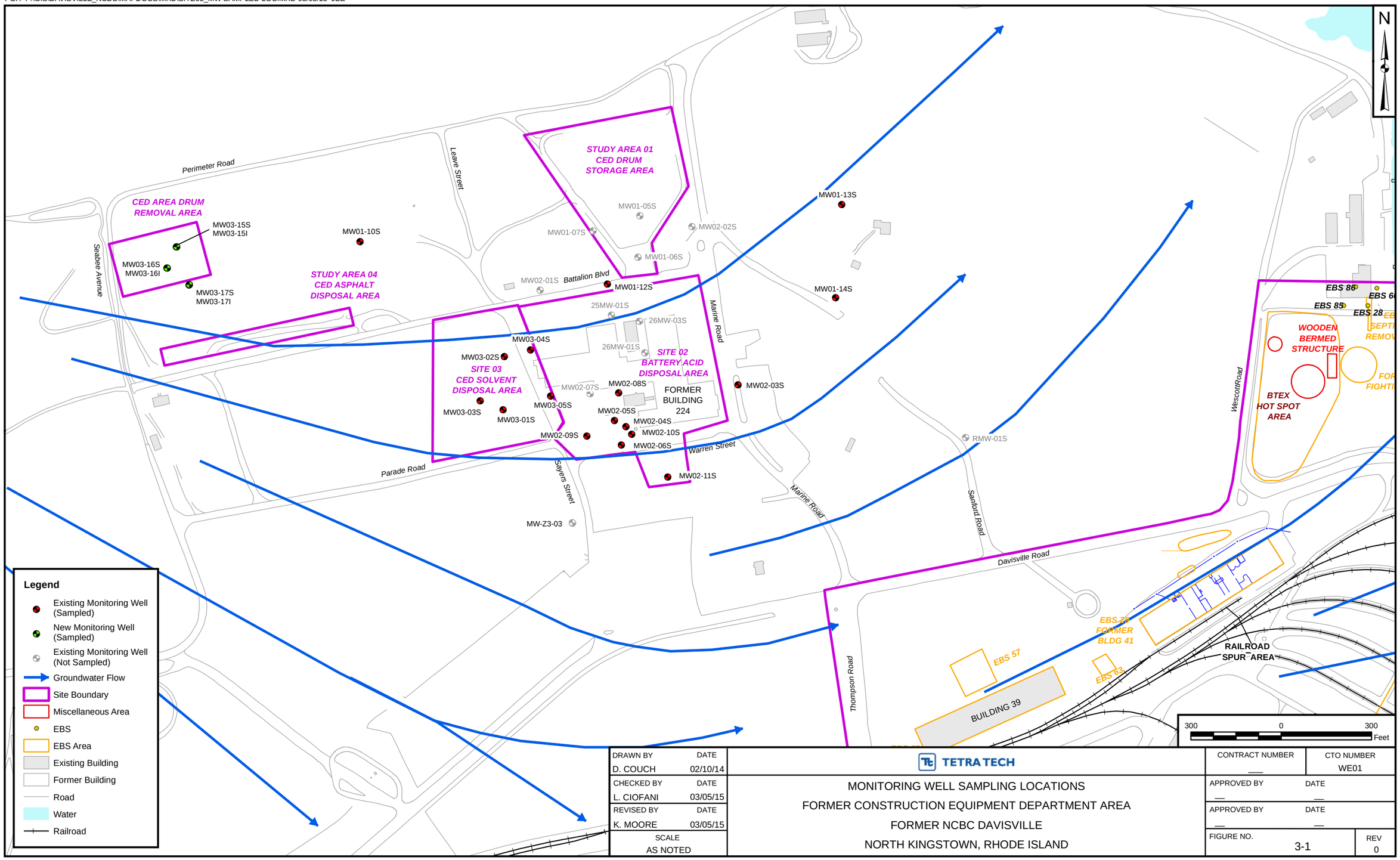
6 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 1 for noncarcinogens (N) and an attenuation factor of 0.001.

7 - The screening value is for trivalent chromium.

Definitions:

C = Carcinogen
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
J = Estimated Value
MTBE = Methyl tert-butyl ether
N = Noncarcinogen
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\SITE03_MW SAMPLED LOC.MXD 03/05/15 JEE



Legend

- Existing Monitoring Well (Sampled)
- New Monitoring Well (Sampled)
- Existing Monitoring Well (Not Sampled)
- Groundwater Flow
- Site Boundary
- Miscellaneous Area
- EBS
- EBS Area
- Existing Building
- Former Building
- Road
- Water
- Railroad

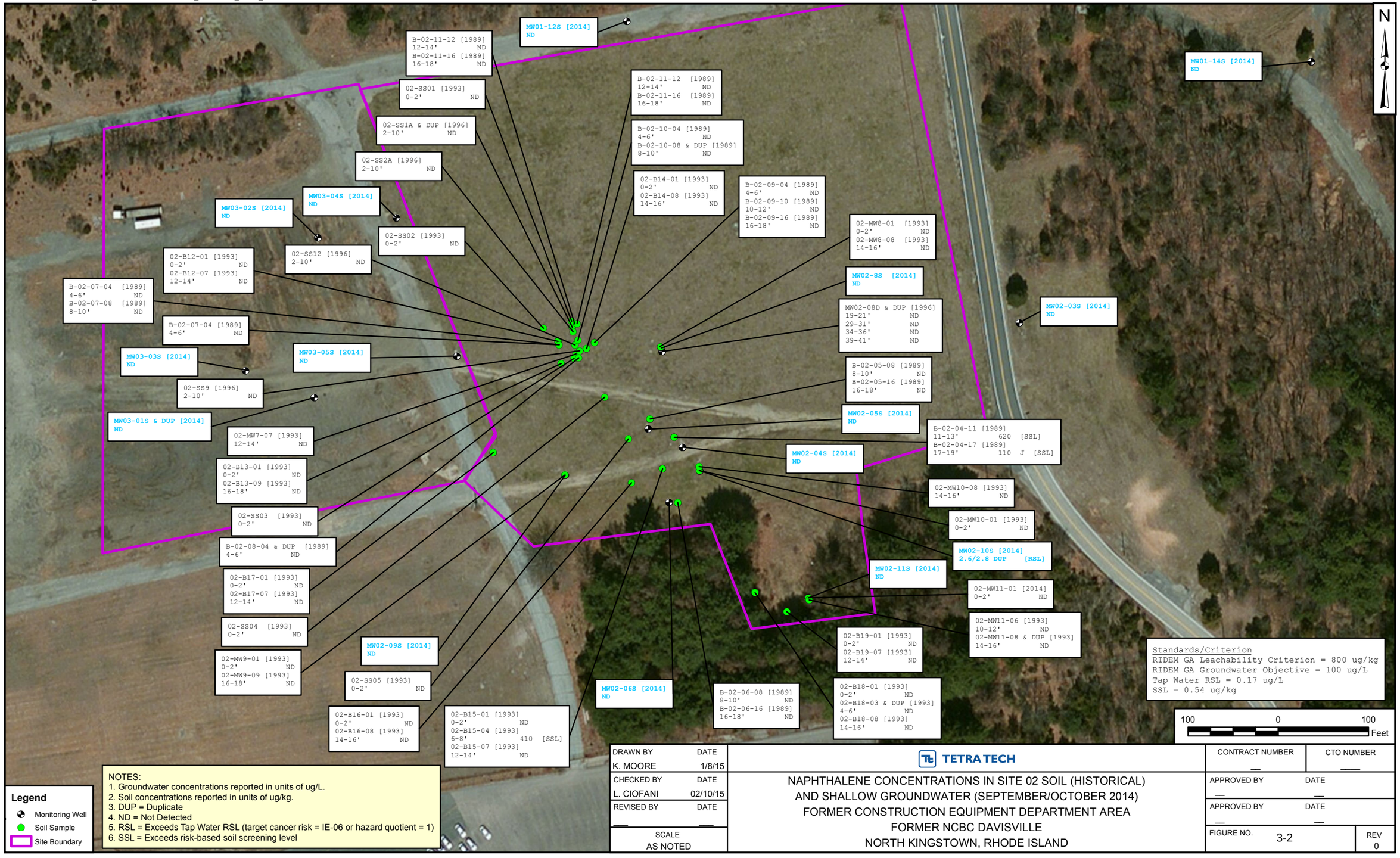
DRAWN BY / DATE	D. COUCH 02/10/14
CHECKED BY / DATE	L. CIOFANI 03/05/15
REVISED BY / DATE	K. MOORE 03/05/15
SCALE	AS NOTED

TETRA TECH

MONITORING WELL SAMPLING LOCATIONS
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CONTRACT NUMBER	—
CTO NUMBER	WE01
APPROVED BY / DATE	— / —
APPROVED BY / DATE	— / —
FIGURE NO.	3-1
REV	0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_GW-NAPH_TAGS_2014.MXD 02/10/15 KM



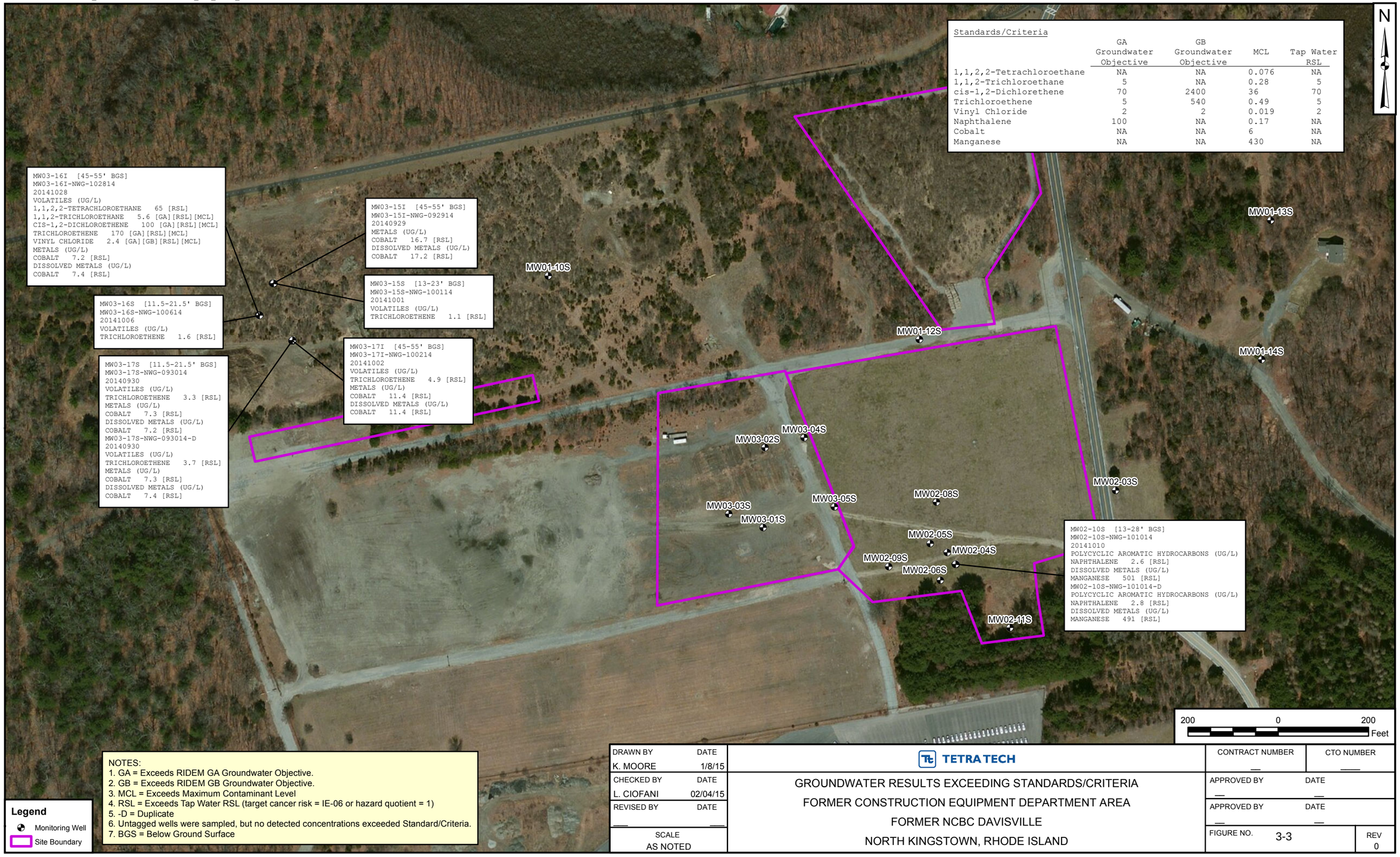
DRAWN BY / DATE	K. MOORE / 1/8/15
CHECKED BY / DATE	L. CIOFANI / 02/10/15
REVISED BY / DATE	___ / ___
SCALE	AS NOTED

TETRA TECH

NAPHTHALENE CONCENTRATIONS IN SITE 02 SOIL (HISTORICAL)
AND SHALLOW GROUNDWATER (SEPTEMBER/OCTOBER 2014)
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CONTRACT NUMBER	CTO NUMBER
__	____
APPROVED BY / DATE	__ / __
APPROVED BY / DATE	__ / __
FIGURE NO.	3-2
REV	0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_GW_TAGS_2014.MXD 02/04/15 KM



NOTES:
1. GA = Exceeds RIDEM GA Groundwater Objective.
2. GB = Exceeds RIDEM GB Groundwater Objective.
3. MCL = Exceeds Maximum Contaminant Level
4. RSL = Exceeds Tap Water RSL (target cancer risk = IE-06 or hazard quotient = 1)
5. -D = Duplicate
6. Untagged wells were sampled, but no detected concentrations exceeded Standard/Criteria.
7. BGS = Below Ground Surface

Legend
- Monitoring Well
- Site Boundary

DRAWN BY / DATE	K. MOORE 1/8/15
CHECKED BY / DATE	L. CIOFANI 02/04/15
REVISED BY / DATE	— —
SCALE	AS NOTED

TETRA TECH

GROUNDWATER RESULTS EXCEEDING STANDARDS/CRITERIA
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CONTRACT NUMBER	CTO NUMBER
—	——
APPROVED BY / DATE	— —
APPROVED BY / DATE	— —
FIGURE NO.	3-3
REV	0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_OCT2014_SHALLOW.MXD 03/09/15 KM

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N

STUDY AREA 01
CED DRUM
STORAGE AREA

CED AREA DRUM
REMOVAL AREA

STUDY AREA 04
CED ASPHALT
DISPOSAL AREA

SITE 02
BATTERY ACID
DISPOSAL AREA

SITE 03
CED SOLVENT
DISPOSAL AREA

Seabee Avenue

Battalion Blvd

MW-Z3-01
MW-Z3-01D
MW03-15S
19.50
MW03-16S
19.79
MW03-17S
19.34
EA-104R
EA-104D
EA-104
MW03-09D
ME-2
MW03-12D
MW03-12R
MW03-13D
MW03-13R
MW03-08D
MW03-08R
MW03-10D
MW03-11S
MW03-11R
EA-111D
EA-111R
PGU-Z3-02S
MW01-10S
18.82
MW03-04S
17.97
MW03-02S
18.20
MW03-03S
18.27
MW03-05S
17.88
MW03-06D
MW03-07D
MW-03-01S
16.44
MW-Z3-02
MW-Z3-02D
QDC-MW01S
13.16
MW01-05S
MW01-07S
MW02-01S
17.72
MW01-15R
MW01-15D
MW01-06S
MW01-12S
15.74
25MW-01S
26MW-03S
MW01-11D
MW01-08D
26MW-01S
MW01-09D
MW02-07S
MW02-07D
MW02-08S
17.18
MW02-05S
17.18
MW02-04S
17.87
MW02-09S
18.00
MW02-10S
19.52
MW02-06S
15.80
MW02-11S
19.49
MW02-03S
14.88
MW01-13S
8.29
MW02-02S
MW01-14S
12.07
RMW-01I
RMW-01S
RMW-01D
PGU-Z3-08D
MW-Z3-03
MW-Z3-03D
MW16-55I
MW16-55D
MW16-55R
MW16-55R2
EA-110D
EA-110R
PGU-Z3-07D

Legend

- Monitoring Well
- Monitoring Well with Anomalous Data
- Potentiometric Contour (ft, msl)
- Site Boundary
- EBS Area

250 0 250 Feet

NOTE:
1. Anomalous data at MW03-01S, MW02-10S, MW-02-06S, and MW02-11S due to changes in measuring point due to conversion of stickup to flush mount wells.

DRAWN BY / DATE	K. MOORE / 3/6/15
CHECKED BY / DATE	S. ANDERSON / 03/09/15
REVISED BY / DATE	— / —
SCALE	AS NOTED

TETRA TECH

POTENTIOMETRIC SURFACE MAP - SHALLOW OVERBURDEN
OCTOBER 15, 2014
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CONTRACT NUMBER	1813
CTO NUMBER	WE01
APPROVED BY / DATE	— / —
APPROVED BY / DATE	— / —
FIGURE NO.	3-4
REV	0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_OCT2014_DEEP.MXD 03/09/15 KM

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N

MW-Z3-02
MW-Z3-02D
QDC-MW01I
13.09
PGU-Z3-02S
STUDY AREA 01
CED DRUM
STORAGE AREA
MW01-13D
9.71
MW01-05S
MW02-02S
MW01-07S
MW01-15R
MW01-15D
MW01-06S
MW-Z3-01
MW-Z3-01D
MW03-15I
19.45
MW03-16I
19.89
MW03-17I
19.09
CED AREA DRUM
REMOVAL AREA
MW01-10D
18.46
Seabee Avenue
MW01-12S
MW01-12D
MW02-01S
EA-104R
EA-104D
EA-104
Battalion Blvd
MW01-14D
12.32
25MW-01S
26MW-03S
MW01-11D
14.75
MW01-08D
17.59
MW03-09D
STUDY AREA 04
CED ASPHALT
DISPOSAL AREA
MW03-04S
SITE 02
BATTERY ACID
DISPOSAL AREA
MW01-09D
16.40
MW03-02D
18.17
ME-2
MW03-12D
MW03-12R
MW02-07S
MW02-07D
MW03-03D
18.16
MW03-05S
17.80
MW02-08D
17.09
MW02-03D
14.83
MW03-06D
MW-03-01S
MW02-05S
MW02-04S
SITE 03
CED SOLVENT
DISPOSAL AREA
MW03-07D
16.53
MW02-09S
MW02-10D
18.86
RMW-01I
RMW-01S
RMW-01D
MW03-13D
MW03-13R
MW02-06S
MW03-08D
MW03-08R
MW02-11D
19.65
MW03-10D
21.28
PGU-Z3-08D
MW-Z3-03
MW-Z3-03D
MW16-55I
MW16-55D
MW16-55R
MW16-55R2
MW03-11S
MW03-11R
EA-110D
EA-110R
EA-111D
EA-111R
PGU-Z3-07D

Legend

- Monitoring Well
- Intermediate Monitoring Well
- Monitoring Well with Anomalous Data
- Potentiometric Contour (ft, msl)
- Site Boundary
- EBS Area

250 0 250 Feet

NOTES:
1. Anomalous data at MW-03-07D and MW03-10D.
2. Intermediate wells presented at MW03-15I, MW03-16I, and MW03-17I.

DRAWN BY / DATE	K. MOORE / 3/6/15
CHECKED BY / DATE	S. ANDERSON / 03/09/15
REVISED BY / DATE	— / —
SCALE	AS NOTED

TETRA TECH

POTENTIOMETRIC SURFACE MAP - DEEP OVERBURDEN
OCTOBER 15, 2014
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

CONTRACT NUMBER	1813
CTO NUMBER	WE01
APPROVED BY / DATE	— / —
APPROVED BY / DATE	— / —
FIGURE NO.	3-5
REV	0

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_OCT2014_BEDROCK.MXD 03/09/15 KM

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N

STUDY AREA 01
CED DRUM
STORAGE AREA

CED AREA DRUM
REMOVAL AREA

STUDY AREA 04
CED ASPHALT
DISPOSAL AREA

SITE 02
BATTERY ACID
DISPOSAL AREA

SITE 03
CED SOLVENT
DISPOSAL AREA

Seabee Avenue

Battalion Blvd

MW-Z3-02
MW-Z3-02D
QDC-MW01S
QDC-MW01I
PGU-Z3-02S
MW01-13R
9.80
MW01-05S
MW02-02S
MW01-07S
MW01-15R
MW01-15D
MW01-06S
MW01-12S
MW01-12D
MW02-01S
MW01-14S
MW01-14D
25MW-01S
26MW-03S
MW01-11D
MW01-08D
MW03-04S
26MW-01S
MW01-09D
MW03-02S
MW03-02D
MW02-07S
MW02-07D
MW03-05S
MW03-05D
MW02-08S
MW02-08D
MW02-03R
14.67
MW03-03R
18.19
MW03-01S
MW02-05S
MW02-04S
MW02-10S
MW02-10D
MW02-09S
MW02-06S
MW02-11D
MW02-11S
RMW-01I
RMW-01S
RMW-01D
PGU-Z3-08D
MW16-55I
MW16-55D
MW16-55R
MW16-55R2
MW-Z3-03
MW-Z3-03D
MW03-10D
MW03-06D
MW03-07D
MW03-15S
MW-03-15S
MW03-15I
MW-03-15I
MW-Z3-01
MW-Z3-01D
MW01-10R
18.35
MW03-16S
MW-03-16S
MW03-16I
MW-03-16I
MW03-17S
MW-03-17S
MW03-17I
MW-03-17I
EA-104R
EA-104D
EA-104
MW03-09D
ME-2
MW03-12D
MW03-12R
MW03-13D
MW03-13R
MW03-08D
MW03-08R
MW03-11S
MW03-11R
EA-110D
EA-110R
EA-111D
EA-111R
PGU-Z3-07D

Legend

- Monitoring Well
- Potentiometric Contour (ft, msl) (dashed where inferred)
- Site Boundary
- EBS Area

250 0 250 Feet

DRAWN BY	DATE	TETRA TECH	CONTRACT NUMBER 1813 / CTO NUMBER WE01
K. MOORE	3/6/15		
CHECKED BY	DATE	POTENTIOMETRIC SURFACE MAP - BEDROCK OVERBURDEN OCTOBER 15, 2014 FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA FORMER NCBC DAVISVILLE NORTH KINGSTOWN, RHODE ISLAND	APPROVED BY / DATE
S. ANDERSON	03/09/15		
REVISED BY	DATE		APPROVED BY / DATE
SCALE: AS NOTED			FIGURE NO. 3-6 / REV 0

4.0 PROBLEM NO. 3: CHARACTERIZATION OF VAPOR INTRUSION POTENTIAL AT SITES 02/03

The SAP provided the following background information and formal problem statement for Problem No. 3:

- **Background.** Because a VOC groundwater plume underlies soil at the CED Area, it is necessary to understand if the FFS for the CED Area soils needs to address vapor intrusion. VOC contamination in groundwater, if present, could potentially migrate from groundwater through soil and into the indoor air of a building hypothetically constructed atop Sites 02/03.

- **Problem Statement.** The Navy is preparing an FFS for the CED Area soils. A VOC groundwater plume emanating primarily from an upgradient United States Army Corps of Engineers (USACE) source area underlies soil at the CED Area (Tetra Tech, 2015). The FFS is for CED Area soils and does require an understanding of the potential for vapor intrusion (i.e., whether VOCs can migrate from the groundwater plume to the indoor air of a future building constructed atop the CED Area). Land use controls may be necessary to mitigate the potential for vapor intrusion. Historical VOC data are available for the shallow groundwater zone, but most of the available data are dated. A current round of VOC data for this zone would allow a comprehensive understanding of the potential for vapor intrusion and would support the FFS. Therefore, data must be collected from select CED Area shallow-zone wells to support an evaluation of the potential for vapor intrusion.

The SAP provides the primary rationale for the selection of shallow monitoring wells sampled to address Problem Statement No. 3. For example, VOC contamination was detected at MW02-10S (Site 02) in samples collected in 2007. 25MW-01S (Site 02) was also selected for sampling primarily because of historical VOC contamination. However, well 25MW-01S was not found during the 2014 sampling event and was replaced with well MW01-12S (located and redeveloped), as agreed to during the September 9, 2014, BCT teleconference. Additional wells across Sites 02 and 03 (as specified in the SAP) were also recommended for sampling to obtain adequate spatial coverage of the sites and to provide data needed to address remaining concerns regarding the potential for migration of metals from soil to groundwater. Two wells (MW03-01S and MW02-06) selected for sampling in the SAP were not located during the 2014 sampling event, and replacement wells were installed as discussed in Section 3. Regardless of the primary reason for sampling at a particular Site 02/03 well, VOC samples were collected from 17 shallow wells (as described in Section 2) during the 2014 sampling event. Water quality parameters were also measured and recorded in the field for all existing and newly installed wells sampled. These parameters included DO, specific conductance, temperature, pH, ORP, and turbidity. Water level measurements were collected from each well at the time of sample collection.

The VOC results for the 2014 groundwater samples collected from Sites 02/03 to address Problem No. 3 are presented on a well-by-well basis in Table 4-1. The following items summarize the results:

- No VOCs were detected in the upgradient wells. Trichlorofluoromethane at MW02-03S and cyclohexane, isopropyl benzene, and methyl cyclohexane at MW02-10S were the only VOCs detected in Site 02/03 shallow wells.

- The maximum detected VOC concentrations in Sites 02/03 shallow groundwater did not exceed vapor intrusion criteria derived using the USEPA Vapor Intrusion Screening Level (VISL) calculator (as described in Attachment A-2) to identify chemical concentrations in groundwater that may adversely affect the indoor air quality of a building overlying subsurface VOC contamination.

- VOC concentrations have declined over time. Sites 02/03 groundwater samples from 1995 and 2007 had sporadic detections of several VOCs, including CVOCs. During the 2014 sampling event, VOCs were only detected in two wells at Sites 02/03, and CVOCs were not detected in any of the wells sampled.

- Although VOC concentrations in the intermediate and deeper groundwater underlying Sites 02/03 exceed vapor intrusion criteria developed using the VISL calculator, as noted previously, groundwater in these zones underlying the CED Area has been impacted by groundwater contamination migrating into the area from the upgradient Nike PR-58 site.

SUMMARY OF HHRA

Risk estimates associated with vapor intrusion into hypothetical future buildings within the study area were developed for VOC concentrations detected in 2014 from shallow-depth groundwater wells at Sites 02/03 as well as shallow- and intermediate-depth groundwater wells at the Drum Removal Area (Attachment A-2). However, VOC results for the intermediate-depth wells do not represent water-table concentrations, the most appropriate concentrations to evaluate in a vapor intrusion analysis. Only the results of the vapor intrusion analysis for Sites 02/03 shallow groundwater are discussed in this section. The results of the vapor intrusion analysis for the Drum Removal Area are discussed in Section 5.

Four VOCs, one semivolatile organic compound (SVOC) (naphthalene), metals, and petroleum hydrocarbons were detected in the Sites 02/03 groundwater samples. Detected concentrations VOCs detected in Sites 02/03 shallow groundwater were compared to screening criteria for vapor intrusion based on an HI of 0.1 or an incremental lifetime cancer risk (ILCR) of $1x10^{-6}$. No detected concentrations in Sites 02/03 groundwater exceeded the conservative vapor intrusion screening levels. Therefore, no chemicals

were selected as vapor intrusion COPCs for the CED Area shallow groundwater data set; further vapor intrusion risk evaluation of this data set was not conducted.

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION			MW01-10S	MW01-12S	MW01-13S
SAMPLE ID			MW01-10S-NWG-100214	MW01-12S-NWG-100214	MW01-13Sa-NWG-102714
SAMPLE DATE	EPA VISL		20141002	20141002	20141027
SAMPLE TYPE	(ug/L)[1]		NORMAL (UPGRADIENT)	NORMAL	NORMAL (UPGRADIENT)
TOP DEPTH (FEET)			13	14	13
BOTTOM DEPTH (FEET)			23	24	23
VOLATILES (UG/L)					
CYCLOHEXANE	1000	N	1 U	1 U	1 U
ISOPROPYLBENZENE	890	N	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA		1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	180	C	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	4.6	C	0.1 U	0.1 U	0.1 U
METALS (UG/L)					
ALUMINUM	NA		11.7 U	8.5 U	**22**
ANTIMONY	NA		0.2 U	0.2 U	**0.28 J**
BARIUM	NA		**5.1 J**	**5.6 J**	**5.6 J**
CADMIUM	NA		0.15 U	**0.09 J**	0.15 U
CALCIUM	NA		**4380**	**10600**	**5710**
CHROMIUM	NA		**0.91 J**	**0.72 J**	**1.1 J**
COBALT	NA		0.033 U	0.24 U	**0.56**
COPPER	NA		0.38 U	**0.39 J**	**0.51 J**
IRON	NA		20 U	20 U	**32.5 J**
MAGNESIUM	NA		**1430**	**1700**	**1620**
MANGANESE	NA		**3.9**	**1.4 J**	**24.1**
NICKEL	NA		0.25 U	**0.74 J**	**4.1**
POTASSIUM	NA		**822**	**1340**	**1320**
SELENIUM	NA		0.25 U	0.25 U	0.25 U
SODIUM	NA		**6420**	**4090**	**8590**
VANADIUM	NA		1 U	1 U	1 U
ZINC	NA		1 U	**1.4 J**	9.3 U

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW01-10S	MW01-12S	MW01-13S
SAMPLE ID		MW01-10S-NWG-100214	MW01-12S-NWG-100214	MW01-13Sa-NWG-102714
SAMPLE DATE	EPA VISL	20141002	20141002	20141027
SAMPLE TYPE	(ug/L)[1]	NORMAL (UPGRADIENT)	NORMAL	NORMAL (UPGRADIENT)
TOP DEPTH (FEET)		13	14	13
BOTTOM DEPTH (FEET)		23	24	23
VOLATILES (UG/L)				
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	11.2 U	6.7 U	**22.1**
ANTIMONY	NA	0.2 U	0.2 U	**0.4 J**
BARIUM	NA	**5 J**	**5.6 J**	**5.4 J**
CADMIUM	NA	0.15 U	0.15 U	0.15 U
CALCIUM	NA	**4330**	**10200**	**5520**
CHROMIUM	NA	**0.83 J**	**0.88 J**	**0.85 J**
COBALT	NA	0.048 U	0.23 U	**0.52**
COPPER	NA	**0.72 J**	**1.1 J**	**1.2 J**
IRON	NA	20 U	20 U	**16.6 J**
LEAD	NA	0.15 U	0.15 U	0.19 U
MAGNESIUM	NA	**1400**	**1640**	**1560**
MANGANESE	NA	**4.2**	**2.6**	**22.5**
NICKEL	NA	**0.83 J**	**1.3**	**4.4**
POTASSIUM	NA	**831**	**1330**	**1280**
SELENIUM	NA	0.25 U	0.25 U	0.25 U
SODIUM	NA	**6330**	**4000**	**8320**
VANADIUM	NA	1 U	1 U	1 U
ZINC	NA	**1.6 J**	**2 J**	**22.4 J**
PETROLEUM HYDROCARBONS (MG/L)				
TPH-DRO (C9-C40)	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	20 U	20 U

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW01-14S	MW02-03S		
SAMPLE ID		MW01-14S-NWG-100914	MW02-03S-NWG-100314	MW02-03S-NWG-111914	MW02-03S-NWG-111914-D
SAMPLE DATE	EPA VISL	20141009	20141003	20141119	20141119
SAMPLE TYPE	(ug/L)[1]	NORMAL (UPGRADIENT)	NORMAL	ORIGINAL	DUPLICATE
TOP DEPTH (FEET)		15	20	20	20
BOTTOM DEPTH (FEET)		25	30	30	30
VOLATILES (UG/L)					
CYCLOHEXANE	1000	1 U	--	1 U	1 U
ISOPROPYLBENZENE	890	0.5 U	--	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	--	1 U	1 U
TRICHLOROFLUOROMETHANE	180	1 UJ	--	**0.67 J**	**0.88 J**
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	4.6	0.1 U	0.1 U	--	--
METALS (UG/L)					
ALUMINUM	NA	17.8 U	**202**	**--**	**--**
ANTIMONY	NA	0.2 U	0.2 U	**--**	**--**
BARIUM	NA	**10.5**	**16.2**	**--**	**--**
CADMIUM	NA	**0.091 J**	**0.19 J**	**--**	**--**
CALCIUM	NA	**7810**	**34300**	**--**	**--**
CHROMIUM	NA	**1.2 J**	**1 J**	**--**	**--**
COBALT	NA	0.098 U	**0.56 J**	**--**	**--**
COPPER	NA	0.38 U	**0.72 J**	**--**	**--**
IRON	NA	20 U	20 U	**--**	**--**
MAGNESIUM	NA	**2110**	**5850**	**--**	**--**
MANGANESE	NA	**4.4**	**18.3**	**--**	**--**
NICKEL	NA	**1.6**	**0.9 J**	**--**	**--**
POTASSIUM	NA	**1590**	**2020**	**--**	**--**
SELENIUM	NA	**0.37 J**	**0.41 J**	**--**	**--**
SODIUM	NA	**27000**	**11800**	**--**	**--**
VANADIUM	NA	1 U	1 U	**--**	**--**
ZINC	NA	**1.5 J**	**5.6**	**--**	**--**

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW01-14S	MW02-03S		
SAMPLE ID		MW01-14S-NWG-100914	MW02-03S-NWG-100314	MW02-03S-NWG-111914	MW02-03S-NWG-111914-D
SAMPLE DATE	EPA VISL	20141009	20141003	20141119	20141119
SAMPLE TYPE	(ug/L)[1]	NORMAL (UPGRADIENT)	NORMAL	ORIGINAL	DUPLICATE
TOP DEPTH (FEET)		15	20	20	20
BOTTOM DEPTH (FEET)		25	30	30	30
VOLATILES (UG/L)					
DISSOLVED METALS (UG/L)					
ALUMINUM	NA	19.3 U	**184**	--	--
ANTIMONY	NA	0.2 U	0.2 U	--	--
BARIUM	NA	**10.1**	**15.6**	--	--
CADMIUM	NA	**0.088 J**	**0.19 J**	--	--
CALCIUM	NA	**7480**	**32800**	--	--
CHROMIUM	NA	**0.89 J**	**1 J**	--	--
COBALT	NA	0.078 U	0.51 U	--	--
COPPER	NA	**0.58 J**	**1.7 J**	--	--
IRON	NA	**150 J**	20 U	--	--
LEAD	NA	0.22 U	0.17 U	--	--
MAGNESIUM	NA	**2030**	**5650**	--	--
MANGANESE	NA	**14.4**	**17.5**	--	--
NICKEL	NA	**1.4**	**1.4**	--	--
POTASSIUM	NA	**1540**	**1970**	--	--
SELENIUM	NA	**0.36 J**	**0.34 J**	--	--
SODIUM	NA	**25900**	**11200**	--	--
VANADIUM	NA	1 U	1 U	--	--
ZINC	NA	**1.4 J**	**6**	--	--
PETROLEUM HYDROCARBONS (MG/L)					
TPH-DRO (C9-C40)	NA	0.05 U	0.05 U	--	--
PETROLEUM HYDROCARBONS (UG/L)					
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	--	20 U	20 U

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-05S	MW02-06S	MW02-08S
SAMPLE ID		MW02-04Sa-NWG-100614	MW02-05S-NWG-100214	MW02-06Sa-NWG-102914	MW02-08Sa-NWG-100114
SAMPLE DATE	EPA VISL	20141006	20141002	20141029	20141001
SAMPLE TYPE	(ug/L)[1]	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH (FEET)		16	16.5	16	11.8
BOTTOM DEPTH (FEET)		26	26.5	26	26.8
VOLATILES (UG/L)					
CYCLOHEXANE	1000	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	890	0.5 U	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	180	1 UJ	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	4.6	0.1 U	0.1 U	0.1 U	0.1 U
METALS (UG/L)					
ALUMINUM	NA	16.5 U	**38.2**	12.8 U	17 U
ANTIMONY	NA	0.2 U	**0.41 J**	**0.36 J**	0.2 U
BARIUM	NA	**2 J**	**8 J**	**8.2 J**	**12.6**
CADMIUM	NA	**0.1 J**	**0.16 J**	0.15 U	**0.13 J**
CALCIUM	NA	**5770**	**7940**	**12100**	**27300**
CHROMIUM	NA	**1.6 J**	**1.3 J**	0.25 U	**1.2 J**
COBALT	NA	0.042 U	0.19 U	0.15 U	1.2 U
COPPER	NA	0.38 U	**0.28 J**	**0.55 J**	0.71 U
IRON	NA	**14.5 J**	20 U	20 U	40.3 U
MAGNESIUM	NA	**1420**	**1830**	**1800**	**2470**
MANGANESE	NA	**4.1**	**10.8**	**13.8**	**6.5**
NICKEL	NA	**0.59 J**	**0.57 J**	**0.39 J**	**2.6**
POTASSIUM	NA	**711**	**776**	**1290**	**2410**
SELENIUM	NA	**0.15 J**	**0.2 J**	0.25 U	**0.27 J**
SODIUM	NA	**5900**	**6470**	**5710**	**5960**
VANADIUM	NA	**1.3 J**	1 U	1 U	1 U
ZINC	NA	1 U	**1.2 J**	7.2 U	**2.7**

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-04S	MW02-05S	MW02-06S	MW02-08S
SAMPLE ID		MW02-04Sa-NWG-100614	MW02-05S-NWG-100214	MW02-06Sa-NWG-102914	MW02-08Sa-NWG-100114
SAMPLE DATE	EPA VISL	20141006	20141002	20141029	20141001
SAMPLE TYPE	(ug/L)[1]	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH (FEET)		16	16.5	16	11.8
BOTTOM DEPTH (FEET)		26	26.5	26	26.8
VOLATILES (UG/L)					
DISSOLVED METALS (UG/L)					
ALUMINUM	NA	6 U	**34**	15.6 U	4.4 U
ANTIMONY	NA	0.2 U	**0.28 J**	**0.3 J**	0.2 U
BARIUM	NA	**2 J**	**5.2 J**	**8.1 J**	**11**
CADMIUM	NA	**0.088 J**	**0.18 J**	0.15 U	**0.13 J**
CALCIUM	NA	**5650**	**7920**	**11800**	**28300**
CHROMIUM	NA	**1.4 J**	**1.3 J**	0.25 U	**1 J**
COBALT	NA	0.049 U	0.17 U	0.19 U	1.3 U
COPPER	NA	**0.87 J**	**1.6 J**	**1.7 J**	**2.2**
IRON	NA	20 U	20 U	**37.6 J**	20 U
LEAD	NA	0.15 U	0.23 U	0.17 U	0.15 U
MAGNESIUM	NA	**1380**	**1830**	**1780**	**2570**
MANGANESE	NA	**3.9**	**12.1**	**13.9**	**6.8**
NICKEL	NA	**1**	**5.3**	**1.4**	**3.3**
POTASSIUM	NA	**716**	**801**	**1310**	**2530**
SELENIUM	NA	0.25 U	0.25 U	0.25 U	**0.29 J**
SODIUM	NA	**5780**	**6570**	**5650**	**6260**
VANADIUM	NA	**0.64 J**	1 U	1 U	1 U
ZINC	NA	**1.5 J**	**8**	**11.8 J**	**5.1**
PETROLEUM HYDROCARBONS (MG/L)					
TPH-DRO (C9-C40)	NA	0.05 U	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)					
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	20 U	20 U	20 U

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-09S	MW02-10S		MW02-11S
SAMPLE ID		MW02-09S-NWG-100814	MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	EPA VISL	20141008	20141010	20141010	20141008
SAMPLE TYPE	(ug/L)[1]	NORMAL	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH (FEET)		12	13	13	13
BOTTOM DEPTH (FEET)		27	28	28	28
VOLATILES (UG/L)					
CYCLOHEXANE	1000	1 U	**10**	**10**	1 U
ISOPROPYLBENZENE	890	0.5 U	**14**	**14**	0.5 U
METHYL CYCLOHEXANE	NA	1 U	**8**	**8**	1 U
TRICHLOROFLUOROMETHANE	180	1 UJ	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	4.6	0.1 U	**2.6**	**2.8**	0.1 U
METALS (UG/L)					
ALUMINUM	NA	13.7 U	**49.1**	**37**	**80.1**
ANTIMONY	NA	0.2 U	**0.23 J**	**0.2 J**	0.2 U
BARIUM	NA	**2.9 J**	**3.5 J**	**3.5 J**	**2.1 J**
CADMIUM	NA	0.15 U	**0.2 J**	**0.12 J**	**0.1 J**
CALCIUM	NA	**3230**	**11900**	**12300**	**3610**
CHROMIUM	NA	**0.93 J**	**2.9**	**2.8**	**1.8 J**
COBALT	NA	0.05 U	0.54 U	0.55 U	0.12 U
COPPER	NA	0.38 U	**0.81 J**	**0.7 J**	**0.49 J**
IRON	NA	20 U	**1010**	**1050**	**163 J**
MAGNESIUM	NA	**814**	**1370**	**1410**	**1050**
MANGANESE	NA	**3.5**	**332**	**357**	**8**
NICKEL	NA	0.25 U	**0.93 J**	**0.91 J**	**0.77 J**
POTASSIUM	NA	**697**	**1400**	**1460**	**614**
SELENIUM	NA	0.25 U	**0.31 J**	**0.22 J**	0.25 U
SODIUM	NA	**5830**	**7370**	**7620**	**5580**
VANADIUM	NA	1 U	**1.1 J**	1 U	1 U
ZINC	NA	1 U	**46.6**	**58.8**	1 U

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-09S	MW02-10S		MW02-11S
SAMPLE ID		MW02-09S-NWG-100814	MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	EPA VISL	20141008	20141010	20141010	20141008
SAMPLE TYPE	(ug/L)[1]	NORMAL	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH (FEET)		12	13	13	13
BOTTOM DEPTH (FEET)		27	28	28	28
VOLATILES (UG/L)					
DISSOLVED METALS (UG/L)					
ALUMINUM	NA	14.2 U	3.6 U	3.3 U	13.4 U
ANTIMONY	NA	0.2 U	0.2 U	0.2 U	0.2 U
BARIUM	NA	**3 J**	**3.6 J**	**3.6 J**	**2 J**
CADMIUM	NA	**0.54 J**	**0.13 J**	**0.12 J**	**0.14 J**
CALCIUM	NA	**3100**	**11200**	**11200**	**3620**
CHROMIUM	NA	**1.1 J**	**0.87 J**	**0.82 J**	**1.3 J**
COBALT	NA	0.027 U	0.63 U	0.64 U	0.038 U
COPPER	NA	**1.2 J**	**0.27 J**	**0.58 J**	**0.93 J**
IRON	NA	20 U	**1580**	**1530**	**180 J**
LEAD	NA	**2.7**	0.15 U	0.15 U	**0.55 J**
MAGNESIUM	NA	**784**	**1500**	**1500**	**1030**
MANGANESE	NA	**3.3**	**501**	**491**	**5.2**
NICKEL	NA	**3.6**	**1.2**	**1.8**	**1.3**
POTASSIUM	NA	**708**	**1520**	**1530**	**626**
SELENIUM	NA	0.25 U	**0.31 J**	**0.26 J**	**0.27 J**
SODIUM	NA	**5650**	**7870**	**7870**	**5570**
VANADIUM	NA	1 U	**0.78 J**	1 U	**0.94 J**
ZINC	NA	**6.9**	**51.7**	**49.7**	**2.5**
PETROLEUM HYDROCARBONS (MG/L)					
TPH-DRO (C9-C40)	NA	0.05 U	**0.68**	**0.64**	0.05 U
PETROLEUM HYDROCARBONS (UG/L)					
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	**1300**	**1400**	20 U

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-01S	MW03-01S	MW03-02S	MW03-03S
SAMPLE ID		MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914	MW03-03Sa-NWG-103014
SAMPLE DATE	EPA VISL	20141029	20141029	20140929	20141030
SAMPLE TYPE	(ug/L)[1]	ORIGINAL	DUPLICATE	NORMAL	NORMAL
TOP DEPTH (FEET)		14	14	8.5	15
BOTTOM DEPTH (FEET)		24	24	23.5	25
VOLATILES (UG/L)					
CYCLOHEXANE	1000	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	890	0.5 U	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	180	1 UJ	1 UJ	1 UJ	1 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	4.6	0.1 U	0.1 U	0.1 U	0.1 U
METALS (UG/L)					
ALUMINUM	NA	**57**	**50.6**	9.8 U	**57.4**
ANTIMONY	NA	**0.29 J**	**0.26 J**	**0.37 J**	**0.27 J**
BARIUM	NA	**76.8**	**73.7**	8.5 U	**9.4 J**
CADMIUM	NA	0.32 U	0.29 U	0.15 U	0.3 U
CALCIUM	NA	**25000**	**24700**	**4840**	**11500**
CHROMIUM	NA	**0.24 J**	**0.35 J**	**1.4 J**	**0.61 J**
COBALT	NA	**0.93**	**0.9**	0.029 U	0.2 U
COPPER	NA	**1.1 J**	**0.88 J**	0.24 U	**1.2 J**
IRON	NA	**76.3 J**	**15.3 J**	20 U	**61.6 J**
MAGNESIUM	NA	**6110**	**6070**	**771**	**2380**
MANGANESE	NA	**159**	**157**	**4.5**	**49.1**
NICKEL	NA	**2.3**	**2.4**	0.2 U	**2.7**
POTASSIUM	NA	**2730**	**2730**	**1990**	**1590**
SELENIUM	NA	0.25 U	0.25 U	**0.21 J**	0.25 U
SODIUM	NA	**61800**	**61600**	**4020**	**12200**
VANADIUM	NA	1 U	1 U	**0.65 J**	1 U
ZINC	NA	6 U	**14.7 J**	**0.82 J**	**16.9 J**

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-01S	MW03-01S	MW03-02S	MW03-03S
SAMPLE ID		MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914	MW03-03Sa-NWG-103014
SAMPLE DATE	EPA VISL	20141029	20141029	20140929	20141030
SAMPLE TYPE	(ug/L)[1]	ORIGINAL	DUPLICATE	NORMAL	NORMAL
TOP DEPTH (FEET)		14	14	8.5	15
BOTTOM DEPTH (FEET)		24	24	23.5	25
VOLATILES (UG/L)					
DISSOLVED METALS (UG/L)					
ALUMINUM	NA	**41.9**	**48.9**	8.6 U	**28.2**
ANTIMONY	NA	**0.28 J**	**0.28 J**	**0.29 J**	**0.21 J**
BARIUM	NA	**75.1**	**76.9**	8.4 U	**9.7 J**
CADMIUM	NA	0.27 U	0.27 U	0.15 U	0.15 U
CALCIUM	NA	**25900**	**26900**	**4670**	**11600**
CHROMIUM	NA	**0.33 J**	**0.55 J**	**0.94 J**	**0.85 J**
COBALT	NA	**0.65**	**0.64**	0.033 U	0.18 U
COPPER	NA	**1.6 J**	**1 J**	1.1 U	**1.4 J**
IRON	NA	20 U	**240**	20 U	20 U
LEAD	NA	0.18 U	0.3 U	0.15 U	0.18 U
MAGNESIUM	NA	**6370**	**6580**	**745**	**2380**
MANGANESE	NA	**172**	**180**	**3.7**	**46.8**
NICKEL	NA	**3**	**2.4**	0.9 U	**1.7**
POTASSIUM	NA	**2780**	**2900**	**1940**	**1600**
SELENIUM	NA	0.25 U	0.25 U	**0.23 J**	0.25 U
SODIUM	NA	**60900**	**63200**	**3940**	**12200**
VANADIUM	NA	1 U	1 U	1 U	1 U
ZINC	NA	**13.4 J**	**47.4 J**	**1.4 J**	**11.3 J**
PETROLEUM HYDROCARBONS (MG/L)					
TPH-DRO (C9-C40)	NA	0.05 U	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)					
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	20 U	20 U	20 U

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		**MW03-04S**	**MW03-05S**
SAMPLE ID		**MW03-04S-NWG-093014**	**MW03-05S-NWG-100114**
SAMPLE DATE	**EPA VISL**	**20140930**	**20141001**
SAMPLE TYPE	**(ug/L)[1]**	**NORMAL**	**NORMAL**
TOP DEPTH (FEET)		**10**	**11**
BOTTOM DEPTH (FEET)		**25**	**26**
VOLATILES (UG/L)			
CYCLOHEXANE	1000	1 U	1 U
ISOPROPYLBENZENE	890	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	1 U
TRICHLOROFLUOROMETHANE	180	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)			
NAPHTHALENE	4.6	0.1 U	0.1 U
METALS (UG/L)			
ALUMINUM	NA	**79**	**24.2**
ANTIMONY	NA	0.2 U	0.2 U
BARIUM	NA	9 U	7.1 U
CADMIUM	NA	**0.1 J**	**0.49 J**
CALCIUM	NA	**3870**	**3710**
CHROMIUM	NA	**1.4 J**	**0.9 J**
COBALT	NA	0.065 U	0.03 U
COPPER	NA	0.33 U	0.24 U
IRON	NA	98.3 U	31.6 U
MAGNESIUM	NA	**886**	**760**
MANGANESE	NA	**15.5**	**6.2**
NICKEL	NA	0.27 U	**12.5**
POTASSIUM	NA	**1530**	**747**
SELENIUM	NA	0.25 U	0.25 U
SODIUM	NA	**5460**	**4250**
VANADIUM	NA	1 U	1 U
ZINC	NA	**1.2 J**	**3.9**

TABLE 4-1

SUMMARY OF DETECTIONS - EXISTING WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-04S	MW03-05S
SAMPLE ID		MW03-04S-NWG-093014	MW03-05S-NWG-100114
SAMPLE DATE	EPA VISL	20140930	20141001
SAMPLE TYPE	(ug/L)[1]	NORMAL	NORMAL
TOP DEPTH (FEET)		10	11
BOTTOM DEPTH (FEET)		25	26
VOLATILES (UG/L)			
DISSOLVED METALS (UG/L)			
ALUMINUM	NA	16.7 U	11.5 U
ANTIMONY	NA	**0.22 J**	0.2 U
BARIUM	NA	8.7 U	6.2 U
CADMIUM	NA	**2.3**	**0.43 J**
CALCIUM	NA	**3850**	**3440**
CHROMIUM	NA	**1.1 J**	**0.94 J**
COBALT	NA	0.051 U	0.025 U
COPPER	NA	0.99 U	0.74 U
IRON	NA	20 U	20 U
LEAD	NA	0.098 U	0.077 U
MAGNESIUM	NA	**869**	**706**
MANGANESE	NA	**14.5**	**5.4**
NICKEL	NA	0.94 U	**10.6**
POTASSIUM	NA	**1540**	**697**
SELENIUM	NA	0.25 U	0.25 U
SODIUM	NA	**5470**	**3990**
VANADIUM	NA	1 U	**0.64 J**
ZINC	NA	**1.8 J**	**5**
PETROLEUM HYDROCARBONS (MG/L)			
TPH-DRO (C9-C40)	NA	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)			
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	20 U

Detected concentrations are presented in bold font. Concentrations exceeding the USEPA VISL are shaded yellow.

Footnotes:

1 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 1 for noncarcinogens (N) and an attenuation factor of 0.001.

Definitions:

DRO = Diesel Range Organics
GRO = Gasoline Range Organics
MTBE = Methyl tert-butyl ether
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:

J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

5.0 PROBLEM NO. 4: CHARACTERIZATION OF GROUNDWATER AT CED AREA DRUM REMOVAL AREA

The SAP provided the following background information and formal problem statement for Problem No 4:

- **Background.** In October 2013, the Navy removed nine drums from the CED Area Drum Removal Area and soil samples were collected from beneath the drums as part of the Time-Critical Removal Action. The soil results from the Time-Critical Removal Action show few exceedances of applicable screening criteria. The depths of the collected soil samples were greater than 4 feet bgs (below the drums). A risk assessment was completed based on these soils results and is presented in Attachment A-3 of this technical memorandum. No COCs were identified for Drum Removal Area soil.

- **Problem Statement.** As noted above, the Navy performed a Time-Critical Removal Action at the CED Area Drum Removal Area in October 2013. Soil samples were collected during the removal action for a wide range of target analytes, and a risk assessment for the soil data was conducted. Groundwater data were not collected during the removal action. The removal action included the installation of monitoring wells, but not sampling and analysis of these wells. Groundwater data must be collected from the monitoring wells to determine whether groundwater has been impacted by potential releases from drums.

The SAP identified six monitoring wells at the CED Drum Removal Area that were installed and sampled in 2014 to characterize water quality at and downgradient of the area were drums were excavated. Monitoring wells MW03-17S and MW03-17I are located in the immediate vicinity of the drum excavation area, and MW03-16S and MW03-16I are located downgradient of the excavation area, as shown on Figure 3-2. Monitoring wells MW03-15S and MW03-15I are likely installed sidegradient of the drum excavation area, although it is possible given the presence of wetland features to the north of the site that these wells could be temporally downgradient of the excavation area (especially MW03-15S). The following table briefly summarizes the rationale for the screen depth interval selected for each well installed in the Drum Removal Area in 2014.

CED Drum Removal Area Well	Screened Interval (feet bgs)	Rationale for Screened Interval
MW03-15S	13 to 23	Characterize shallow groundwater/water table zone. Evaluate potential shallow migration to north.
MW03-15I	45 to 55	Characterize intermediate groundwater zone. Evaluate potential migration from shallow zones to deeper zones. Evaluate potential intermediate migration to north and/or migration from shallow zone.
MW03-16S	11.5 to 21.5	Characterize shallow groundwater/water table zone and potential migration downgradient of excavation area.
MW03-16I	45 to 55	Characterize intermediate groundwater zone. Evaluate potential migration from shallow zones to deeper zones and potential migration downgradient of excavation area.
MW03-17S	11.5 to 21.5	Characterize shallow groundwater/water table zone in excavation area (potential source area).
MW03-17I	45 to 55	Characterize intermediate groundwater zone. Evaluate potential migration from shallow zones to deeper zones in excavation area (potential source area)

All groundwater samples from these wells were analyzed for TCL VOCs, TCL semivolatile organic compounds (SVOCs), TCL pesticides/polychlorinated biphenyls (PCBs), TAL metals (total and dissolved), TPH-DRO (C9-C40), and TPH-GRO (MTBE through naphthalene).

Analytical results for soil samples at the CED Area Drum Removal Area are compared to direct contact criteria and leachability criteria in Tables 5-1 and 5-2, respectively, on a sample-by-sample basis. Table 5-3 provides descriptive statistics (e.g., ranges of detections, frequencies of detection, mean concentrations) for the soil data. The following items summarize the results:

- Three VOCs, four SVOCs, Aroclor-1260, TPH-DRO (C9-C40), cyanide, and metals were detected in the removal action soil samples. However, only arsenic was detected at concentrations exceeding the USEPA RSL for residential soils. No target analytes were detected at concentrations exceeding RIDEM DECs. (The RIDEM DEC for arsenic represents the statistical 95-percent UCL of natural background data across the State of Rhode Island.)

- Two VOCs (cis-1,2-dichloroethene and trichloroethene), Aroclor-1260, and several metals exceed USEPA leachability criteria. However, no target analytes were detected at concentrations exceeding the available RIDEM GA leachability criteria. Additionally, as discussed below, shallow groundwater data collected from wells installed at the Drum Removal Area suggest that the residual soil contamination has had a limited impact on the underlying shallow groundwater quality. Of the chemicals detected at concentrations exceeding USEPA leachability criteria, only trichloroethene and cobalt concentrations exceeded direct contract criteria published by USEPA or RIDEM. Although

these chemicals were among those selected as COPCs for groundwater samples collected from removal action wells, neither was selected as a COC for shallow groundwater (see Attachment A-3).

- The HHRA conducted based on the removal action soils data set is included in Attachment A-3 and briefly summarized below; no COCs were identified.

The analytical results for the groundwater samples collected to address Problem No. 4 are presented on a well-by-well basis in Tables 5-4 and 5-5; descriptive statistics for any chemical detected at least once are provided in Table 5-6. Analytical results exceeding USEPA or RIDEM direct contact criteria were previously depicted on Figure 3-2. The following items summarize the results:

- Six CVOCs and several metals were detected in samples collected from removal action wells. TPH was not detected in any removal action wells.

- Cobalt was the only metal detected at concentrations exceeding USEPA RSLs for tap water. However, cobalt results for intermediate-depth wells were generally greater than those reported for shallow-depth wells, suggesting that residual soil contamination is not the source of the concentrations detected.

- No CVOCs were detected in shallow groundwater at concentrations exceeding SDWA MCLs or RIDEM GA groundwater objectives. Trichloroethene concentrations in samples from MW03-15S and MW03-16S did exceed the USEPA RSL for tap water. No other CVOCs were detected in shallow-zone wells.

- Trichloroethene was the only CVOC detected in shallow groundwater (MW03-17S only) at concentrations exceeding the vapor intrusion criteria presented in Table 5-5. MW03-17S is located in the immediate vicinity of the excavation area.

- The most significant CVOC contamination was detected in samples from MW03-16I, an intermediate-depth well located downgradient of the excavation area. Four CVOCs, including trichloroethene at 170 µg/L, were detected at concentrations exceeding SDWA MCL and/or RIDEM GA groundwater objectives. In contrast, the trichloroethene concentration detected in the sample from the shallow well at this location was 1.6 µg/L. The trichloroethene concentration at MW03-17I exceeded the USEPA RSL for tap water but not the SDWA MCL or RIDEM GA groundwater objective. CVOCs were not detected in the sample from MW03-15I.

- In the intermediate wells, several CVOCs were detected in the sample from MW03-16I at concentrations exceeding the vapor intrusion screening criteria presented in Table 5-5 (Figure 5-1). However, only trichloroethene was detected in the sample from MW03-17I at a concentration exceeding the vapor intrusion screening criterion. No chemicals were detected at concentrations exceeding vapor intrusion screening levels in MW03-15I.

As discussed in Section 3, a synoptic round of water levels was collected across the CED Area and CED Area Drum Removal Area on October 15, 2014. Figures 3-4 to 3-6 present the October 2014 data for the shallow and deep overburden and bedrock zones, respectively. Based on these figures, groundwater flow between the CED Drum Removal Area (MW03-15 through MW03-17) and CED Area is approximately southeast for both the shallow and deep groundwater monitoring zones. Further, analysis of the CED Drum Removal Area wells shows that at a minimum, there is also a northeasterly component of groundwater flow between MW03-16 to MW03-15.

SUMMARY OF HHRA

The HHRA for the CED Area Drum Removal Area (Attachment A-3) evaluated potential risks and hazards for exposures to subsurface soil, shallow-zone groundwater, and intermediate-zone groundwater. Subsurface soil samples collected in October 2013 and groundwater samples collected in September/October 2014 were used in the HHRA, and results from these samples were compared to conservative screening levels for direct contact exposures, and for soil, results were also compared to risk-based screening levels for migration to groundwater. Screening criteria for trivalent chromium were used to evaluate total chromium data in the HHRA because historical site activities for the CED Area do not suggest that hexavalent chromium would be a significant contaminant at any sites in the investigation area. Vapor intrusion exposures for Drum Removal Area groundwater were evaluated separately (see Attachment A-2) and are also discussed in this section.

Direct Contact

Based on comparisons to screening criteria, COPCs were identified for the following direct contact exposure scenarios:

- Direct contact with subsurface soil – aluminum, cobalt, iron, and manganese.
- Direct contact with shallow groundwater – trichloroethene, cobalt, and manganese.
- Direct contact with intermediate groundwater – 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, cis-1,2-dichloroethene, trichloroethene, vinyl chloride, cobalt, iron, and manganese.

The maximum detected arsenic concentration in soil exceeds the screening level based on RSLs, but all arsenic concentrations were less than the RIDEM Method 1 DEC for arsenic of 7.0 mg/kg, which is based on the 95-percent UCL of natural background across the state (RIDEM, 2011). Consequently, arsenic was not selected as a COPC for soil.

Receptors evaluated in the HHRA were current and future construction workers, future industrial workers, future recreational users (child, adult, and lifelong) and hypothetical future residents (child, adult, and lifelong). All receptors were evaluated for exposures to soil via incidental ingestion, dermal contact, and inhalation of fugitive dust. Industrial worker and residential exposures were evaluated using current USEPA RSLs (2015). Construction worker and recreational exposures were evaluated using RBCs representing $1x10^{-6}$ cancer risk levels and HQs of 1 (i.e., no-adverse-effect concentrations) developed using applicable site-specific exposure assumptions and methodology similar to that used by USEPA to develop the RSLs. Risk estimates are summarized in the table below.

Summary of Cancer and Non-Cancer Risk Estimates and Risk Contributors(1) for Receptor Direct Contact with Subsurface Soil or Groundwater

Data Set Evaluated	Receptor	Risk Estimates(2)(3)	
		Cancer Risk Estimate	**Hazard Index**
Subsurface Soil	Construction Worker	$2x10^{-7}$ / $9x10^{-8}$	0.7 / 0.7
	Industrial Worker	$9x10^{-7}$ / $4x10^{-9}$	0.06 / 0.06
	Recreational User(4)	$7x10^{-7}$ / $1x10^{-10}$	0.1 / 0.1
	Hypothetical Resident(4)	$4x10^{-6}$ / $2x10^{-8}$	1 / 0.9
Shallow Groundwater	Construction Worker	$7x10^{-7}$	0.4
	Hypothetical Resident(4)	$8x10^{-6}$	**3(5)**
Intermediate Groundwater	Hypothetical Resident(4)	**$1x10^{-3}$ (1,1,2,2-PCA, 1,1,2-TCA, TCE, VC)**	**82 (1,1,2-TCA, cis-1,2-DCE, TCE, Co)**

1 A non-carcinogenic risk contributor is a chemical that contributes substantially (i.e., greater than an HQ of 0.1) to a target organ-specific HI that exceeds 1. A carcinogenic risk contributor is a chemical with a calculated cancer risk estimate exceeding $1x10^{-6}$ when the medium-specific total cancer risk for the receptor exceeds $1x10^{-5}$.

2 Bolded carcinogenic risk estimates exceed USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$ as well as the State of Rhode Island cancer risk limit of $1x10^{-5}$. Bolded HIs exceed the target level of 1. Chemical names presented in parentheses indicate the primary chemicals driving risk.

3 Cancer risks and HIs are presented two ways: (1) with arsenic (for information purposes only), (2) without arsenic. As noted above, arsenic was not selected as a COPC. See Appendix C for risk estimates including arsenic.

4 The cancer risk and HI presented for the recreational user are for the lifelong recreational user and child recreational user (i.e., the most conservative recreational user receptors), respectively. The cancer risk and HI presented for the hypothetical future resident are for the lifelong resident and child resident (i.e., the most conservative receptors), respectively.

5 Target organ HIs are equal to 1.

Definitions: 1,1,2,2-PCA = 1,1,2,2-Tetrachloroethane; 1,1,2-TCA = 1,1,2-Trichloroethane; cis-1,2-DCE = cis-1,2-Dichloroethene; TCE = Trichloroethene; VC = Vinyl Chloride; Co = Cobalt

The following sources of uncertainty should be considered when interpreting the results of the risk evaluations:

- Maximum concentrations were used as EPCs for groundwater exposures estimated in the HHRA instead of 95-percent UCLs because of the small number of samples available. Using maximum concentrations for EPCs is conservative and likely results in an overestimation of risk.

- Intermediate groundwater data from the Drum Removal Area were evaluated for purposes of completeness. However, the intermediate groundwater data may be more representative of off-site sources of contamination because a VOC plume emanating primarily from an upgradient USACE source area underlies soil at the CED Area.

- Although the future use of the CED Area is anticipated to be industrial/commercial or recreational, the residential land use scenario was evaluated in this HHRA primarily to aid in risk-management decisions.

- Cobalt was selected as a COPC in soil and both groundwater data sets based on exceedances of USEPA RSLs. Uncertainty is associated with selecting cobalt as a COPC because cobalt is a naturally occurring metal and because the conservative screening levels (based on USEPA criteria) are likely to be less than background levels of cobalt expected at some sites. Cobalt would not have been selected as a COPC for soil or groundwater at the Drum Removal Area if the MDE values for cobalt (MDE, 2013) were used for COPC selection instead of the USEPA RSLs. Additionally, cobalt concentrations in intermediate groundwater exceed those in shallow groundwater. Cobalt was not selected as a risk driver based on concentrations detected in shallow groundwater, and shallow groundwater concentrations are likely more representative of site-related contamination.

- Risk drivers for direct contact exposures are presented below.

Environmental Medium	Receptors Evaluated	Risk Drivers
Subsurface Soil	Construction Worker Industrial Worker Recreational User Hypothetical Resident	None
Shallow Groundwater	Construction Worker Hypothetical Resident	None
Intermediate Groundwater(1)	Hypothetical Resident	1,2,2-tetrachloroethane 1,1,2-trichloroethane cis-1,2-dichloroethene trichloroethene vinyl chloride cobalt(2)

1 Intermediate groundwater samples (collected 50 feet bgs) may be more representative of off-site contamination sources than site-related contamination.

2 Cobalt would not be identified as a COPC or risk driver if revised criteria for cobalt from MDE (2013) had been used for COPC selection.

No unacceptable medium-specific risks or risk drivers were selected for subsurface soil or shallow groundwater based on the HHRA; therefore, no COCs are selected for these media. Although unacceptable risks and risk drivers were identified for intermediate groundwater, the intermediate groundwater samples likely are more representative of off-site contamination than site-related contamination. Thus, the risk drivers (COCs) identified above for intermediate groundwater are not selected as COCs for the Drum Removal Area.

Migration from Soil to Groundwater

Based on comparisons to screening criteria, COPCs were identified for migration from subsurface soil to groundwater: cis-1,2-dichloroethene, trichloroethene, PCBs, Aroclor-1260, antimony, cobalt, iron, lead, manganese, selenium, silver, and cyanide.

COPCs for migration to groundwater were evaluated qualitatively by considering factors such as whether chemicals were also selected as COPCs in groundwater and whether soil concentrations exceed MCL-based soil screening levels (SSLs). Based on the qualitative evaluation, subsurface soil chemical concentrations are not expected to negatively impact groundwater quality at the Drum Removal Area.

Vapor Intrusion

Concentrations of VOCs exceeding screening criteria for vapor intrusion based on an HI of 0.1 or an ILCR of $1x10^{-6}$ were detected in three shallow and two intermediate wells in the Drum Removal Area, including trichloroethene at shallow wells MW03-15S, MW03-16S, and MW03-17S and 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, trichloroethene, and vinyl chloride at intermediate well MW03-16I-NWG-102814 and trichloroethene at intermediate well MW03-17I-NWG-100214. The chemicals exceeding screening criteria were further evaluated using the VISL calculator (Attachment A-2).

For Drum Removal Area shallow groundwater, the ILCRs for residential and industrial exposures to the maximum concentration of trichloroethene were less than or within the USEPA target risk range of $1x10^{-4}$ to $1x10^{-6}$. The total ILCRs were also less than the RIDEM target cancer risk level of $1x10^{-5}$. Total HIs for residential and industrial exposures to the maximum concentration of trichloroethene were less than the target HI of 1. No COCs are selected for the shallow groundwater zone underlying the Drum Removal Area.

For Drum Removal Area intermediate groundwater, total HIs for residential and industrial exposures exceeded 1 (on a target organ basis) due to trichloroethene. The ILCRs for Drum Removal Area intermediate groundwater exceeded the USEPA target risk range and RIDEM target cancer risk level for residential exposures and exceeded the RIDEM target cancer risk level only for industrial exposures due to trichloroethene. Although CVOCs are COCs for the intermediate/deeper groundwater zones underlying the Drum Removal Area (and the entire CED Area), VOCs in shallow groundwater are expected to be more representative of potential vapor intrusion sources than intermediate groundwater, and upgradient sources (i.e., the Nike site) are likely the predominant source of VOCs detected in the intermediate/deeper groundwater.

TABLE 5-1

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA RSL for Direct Contact - Residential[1]		RIDEM Direct Exposure - Residential[2]	DRUM-01-SOIL DRUM-01-SOIL 41571 NORMAL SOIL NORMAL 3.5 3.5		DRUM-05-SOIL DRUM-05-SOIL 41569 NORMAL SOIL NORMAL 4 4		DRUM-06-SOIL DRUM-06-SOIL 41571 NORMAL SOIL NORMAL 6 6		DRUM-07-SOIL DRUM-07-SOIL 41571 ORIGINAL SOIL NORMAL 2.5 2.5		DRUM-07-SOIL DRUM-07-SOIL-D 41571 DUPLICATE SOIL NORMAL 2.5 2.5		DRUM-08-SOIL DRUM-08-SOIL 41571 NORMAL SOIL NORMAL 3 3	
VOLATILES (UG/KG)															
ACETONE	61000000	N	7800000	2.4	U	2.8	U	2.4	U	2.8	U	3	U	**9.3**	**J**
CIS-1,2-DICHLOROETHENE	160000	N	630000	0.49	U	0.56	U	0.49	U	0.56	U	0.61	U	0.5	U
TRICHLOROETHENE	4100	N	13000	0.49	U	0.56	U	0.49	U	0.56	U	0.61	U	0.5	U
SEMIVOLATILES (UG/KG)															
DIETHYL PHTHALATE	49000000	N	340000	37	U	35.9	U	35.7	U	35.4	U	35.6	U	35.9	U
DIMETHYL PHTHALATE	NA		1900000	**420**		**440**		**360**		**640**		**770**		**680**	
FLUORANTHENE	2300000	N	20000	**83.9**	**J**	35.9	U	35.7	U	35.4	U	35.6	U	35.9	U
PYRENE	1700000	N	13000	37	U	35.9	U	35.7	U	35.4	U	35.6	U	35.9	U
PCBS (UG/KG)															
AROCLOR-1260	240	C	10000 [3]	**53.1**		**23.2**		**22.6**		**49.1**		**72.2**		**20.2**	
METALS (MG/KG)															
ALUMINUM	77000	N	NA	**1400**	**J**	**6900**	**J**	**7400**	**J**	**1400**	**J**	**1400**	**J**	**1100**	**J**
ANTIMONY	31	N	10	1.2	UJ	1.13	UJ	1.16	UJ	1.09	UJ	1.12	UJ	1.14	UJ
ARSENIC	0.67	C	7	**2.14**		**1.46**		**1.91**		**2.28**		**2.2**		**1.84**	
BARIUM	15000	N	5500	**16.8**		**15.1**		**16.9**		**14.6**		**14.3**		**12.4**	
BERYLLIUM	160	N	1.5	**0.294**		**0.281**		**0.339**		**0.281**		**0.323**		**0.241**	**J**
CADMIUM	70	N	39	0.144	U	**0.143**	**J**	0.139	U	0.13	U	0.134	U	0.137	U
CALCIUM	NA		NA	**602**	**J**	**638**	**J**	**611**	**J**	**495**	**J**	**492**	**J**	**581**	**J**
CHROMIUM	120000	N[4]	1400 [4]	**7.76**	**J**	**17.9**	**J**	**6.31**	**J**	**24.9**	**J**	**9.35**	**J**	**6.23**	**J**
COBALT	23	N	NA	**5.57**		**4.71**		**4.6**		**5.53**		**5.77**		**6.32**	
COPPER	3100	N	3100	**9.25**		**5.87**		**7.54**		**9.36**		**11.8**		**8.22**	
IRON	55000	N	NA	**2700**	**J**	**22200**	**J**	**13200**	**J**	**3700**	**J**	**3700**	**J**	**3500**	**J**
LEAD	400		150	**37**	**J**	**97.4**	**J**	**39.6**	**J**	**128**	**J**	**47.3**	**J**	**22.8**	**J**
MAGNESIUM	NA		NA	**1400**		**1000**		**1100**		**1300**		**1300**		**995**	
MANGANESE	1800	N	390	**122**		**124**		**114**		**131**		**135**		**156**	
MERCURY	23	N[5]	23	**0.012**		**0.012**		**0.013**		**0.014**		**0.015**		**0.013**	
NICKEL	1500	N	1000	**10.1**		**7.95**		**7.49**		**9.63**		**10.9**		**8.52**	
POTASSIUM	NA		NA	**563**	**J**	**419**	**J**	**477**	**J**	**508**	**J**	**490**	**J**	**404**	**J**
SELENIUM	390	N	390	**0.463**	**J**	0.454	U	0.465	U	**0.552**	**J**	**0.536**	**J**	0.457	U
SILVER	390	N	200	**0.896**		**1.48**	**J**	**0.808**	**J**	**1.19**		**1.23**		**1.18**	
SODIUM	NA		NA	**31.9**	**J**	**28**	**J**	**35.3**	**J**	**28.6**	**J**	**30.7**	**J**	**23.4**	**J**
VANADIUM	390	N	550	**13.3**		**11.5**		**11.6**		**12.8**		**12.7**		**11**	
ZINC	23000	N	6000	**44.8**		**43**		**44.9**		**49.4**		**54.7**		**36.9**	
MISCELLANEOUS PARAMETERS															
CYANIDE (MG/KG)	21	N	200	**0.037**	**J**	**0.068**	**J**	0.134	U	0.133	U	**0.036**	**J**	**0.069**	**J**
PETROLEUM HYDROCARBONS (UG/KG)															
TPH-DRO (C9-C40)	NA		500000	**11554**	**J**	**7450**	**J**	**21736**	**J**	**8236**	**J**	**14477**	**J**	**10853**	**J**

TABLE 5-1

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA RSL for Direct Contact - Residential[1]		RIDEM Direct Exposure - Residential[2]	DRUM-09-SOIL DRUM-09-SOIL 41571 NORMAL SOIL NORMAL 4 4		DRUM-10-SOIL DRUM-10-SOIL 41571 NORMAL SOIL NORMAL 3 3		DRUM-11-SOIL DRUM-11-SOIL 41571 NORMAL SOIL NORMAL 4 4		DRUM-12-SOIL DRUM-12-SOIL 41571 NORMAL SOIL NORMAL 4.5 4.5		TP-01-PIPE TP-01-PIPE 41572 NORMAL SOIL NORMAL 4 4		TP-02-PIPE TP-02-PIPE 41572 NORMAL SOIL NORMAL 4 4	
VOLATILES (UG/KG)															
ACETONE	61000000	N	7800000	2.7	U	3	U	2.8	U	2.4	U	2.6	UJ	2.5	UJ
CIS-1,2-DICHLOROETHENE	160000	N	630000	0.54	U	0.59	U	**10.3**		**14.4**		0.52	U	0.51	U
TRICHLOROETHENE	4100	N	13000	0.54	U	0.59	U	**4.4**	**J**	**7**		0.52	U	0.51	U
SEMIVOLATILES (UG/KG)															
DIETHYL PHTHALATE	49000000	N	340000	36.2	U	35.4	U	**140**	**J**	36.1	U	36.9	U	36.5	U
DIMETHYL PHTHALATE	NA		1900000	**220**	**J**	**450**		**450**		**430**		**390**		**380**	
FLUORANTHENE	2300000	N	20000	36.2	U	**74.7**	**J**	36.4	U	36.1	U	36.9	U	36.5	U
PYRENE	1700000	N	13000	36.2	U	35.4	U	36.4	U	36.1	U	36.9	U	36.5	U
PCBS (UG/KG)															
AROCLOR-1260	240	C	10000 [3]	**17.3**	**J**	**38.6**		**45**		**26.7**		**12.8**	**J**	**26.2**	
METALS (MG/KG)															
ALUMINUM	77000	N	NA	**1200**	**J**	**1200**	**J**	**8900**	**J**	**1400**	**J**	**12000**	**J**	**10400**	**J**
ANTIMONY	31	N	10	**0.778**	**J**	1.14	UJ	1.15	UJ	1.11	UJ	1.13	UJ	1.17	UJ
ARSENIC	0.67	C	7	**5.62**		**1.8**		**1.97**		**2.06**		**1.74**	**J**	**2.32**	**J**
BARIUM	15000	N	5500	**16.1**		**13.5**		**16.6**		**12.5**		**20.5**		**13.8**	
BERYLLIUM	160	N	1.5	**0.182**	**J**	**0.306**		**0.384**		**0.311**		**0.532**	**J**	**0.377**	**J**
CADMIUM	70	N	39	0.138	U	0.136	U	**0.133**	**J**	0.133	U	0.136	U	0.14	U
CALCIUM	NA		NA	**770**	**J**	**454**	**J**	**570**	**J**	**355**	**J**	**362**	**J**	**298**	**J**
CHROMIUM	120000	N[4]	1400 [4]	**8.55**	**J**	**6.37**	**J**	**8.5**	**J**	**7.81**	**J**	**9.13**	**J**	**7.42**	**J**
COBALT	23	N	NA	**5.63**		**4.93**		**6.26**		**5.11**		**10.9**		**6.65**	
COPPER	3100	N	3100	**9.45**		**6.94**		**8.8**		**8.36**		**18.8**	**J**	**10.9**	**J**
IRON	55000	N	NA	**33400**	**J**	**2700**	**J**	**14100**	**J**	**2700**	**J**	**28700**	**J**	**17400**	**J**
LEAD	400		150	**34.8**	**J**	**31.7**	**J**	**36.3**	**J**	**31.6**	**J**	**24.2**		**28.1**	
MAGNESIUM	NA		NA	**1000**		**1100**		**1500**		**1200**		**3900**	**J**	**1600**	**J**
MANGANESE	1800	N	390	**172**		**104**		**147**		**118**		**179**	**J**	**137**	**J**
MERCURY	23	N[5]	23	**0.012**		**0.008**	**J**	**0.013**		**0.012**		**0.005**	**J**	**0.013**	
NICKEL	1500	N	1000	**9.63**		**7.47**		**9.71**		**8.15**		**17.7**		**11.6**	
POTASSIUM	NA		NA	**469**	**J**	**499**	**J**	**554**	**J**	**517**	**J**	**884**		**536**	
SELENIUM	390	N	390	**0.623**	**J**	**0.411**	**J**	0.459	U	**0.44**	**J**	**1.51**	**J**	**1.1**	**J**
SILVER	390	N	200	**2.13**	**J**	**0.864**		**0.9**	**J**	**0.837**		**1.63**	**J**	**0.954**	**J**
SODIUM	NA		NA	**33.3**	**J**	**26.3**	**J**	**28.4**	**J**	**26.2**	**J**	**48.1**	**J**	**41.3**	**J**
VANADIUM	390	N	550	**12.7**		**10.87**		**14.4**		**11.7**		**17.5**		**15.2**	
ZINC	23000	N	6000	**50.4**		**45.9**		**42.3**		**47.9**		**55.7**		**37.5**	
MISCELLANEOUS PARAMETERS															
CYANIDE (MG/KG)	21	N	200	**0.068**	**J**	0.132	U	0.136	U	0.136	U	0.138	U	0.137	U
PETROLEUM HYDROCARBONS (UG/KG)															
TPH-DRO (C9-C40)	NA		500000	**106263**	**J**	**9488**	**J**	**33757**	**J**	**20532**	**J**	**7426**	**J**	**8379**	**J**

TABLE 5-1

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA RSL for Direct Contact - Residential[1]		RIDEM Direct Exposure - Residential[2]	TP-03-PIPE TP-03-PIPE 41572 NORMAL SOIL NORMAL 4 4		TP-04-SOIL TP-04-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-05-SOIL TP-05-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-06-SOIL TP-06-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-07-SOIL TP-07-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-08-SOIL TP-08-SOIL 41572 NORMAL SOIL NORMAL 4 4	
VOLATILES (UG/KG)																	
ACETONE	61000000	N	7800000	2.4	UJ	2.3	UJ	2.3	UJ	2.6	UJ	2.1	UJ	3	UJ
CIS-1,2-DICHLOROETHENE	160000	N	630000	0.49	U	0.46	U	0.46	U	0.52	U	0.42	U	0.6	U
TRICHLOROETHENE	4100	N	13000	0.49	U	**1.1**	**J**	0.46	U	0.52	U	0.42	U	0.6	U
SEMIVOLATILES (UG/KG)																	
DIETHYL PHTHALATE	49000000	N	340000	**2100**		**620**		36.4	U	36.1	U	36.2	U	34.8	U
DIMETHYL PHTHALATE	NA		1900000	**320**	**J**	**390**		**440**		**400**		**380**		**320**	**J**
FLUORANTHENE	2300000	N	20000	36	U	36.6	U	36.4	U	36.1	U	36.2	U	34.8	U
PYRENE	1700000	N	13000	36	U	36.6	U	36.4	U	36.1	U	36.2	U	**73.7**	**J**
PCBS (UG/KG)																	
AROCLOR-1260	240	C	10000 [3]	**28.5**		**14.2**	**J**	**12**	**J**	**15.2**	**J**	**44.6**		**61.1**	
METALS (MG/KG)																	
ALUMINUM	77000	N	NA	**11500**	**J**	**9000**	**J**	**11100**	**J**	**8300**	**J**	**7200**	**J**	**7800**	**J**
ANTIMONY	31	N	10	1.15	UJ	1.17	UJ	1.16	UJ	1.14	UJ	1.12	UJ	1.12	UJ
ARSENIC	0.67	C	7	**3.7**	**J**	**1.68**	**J**	**1.87**	**J**	**1.63**	**J**	**1.83**	**J**	**1.94**	**J**
BARIUM	15000	N	5500	**20.9**		**15.6**		**17**		**14.1**		**15.3**		**16**	
BERYLLIUM	160	N	1.5	**0.502**	**J**	**0.397**	**J**	**0.438**	**J**	**0.36**	**J**	**0.33**	**J**	**0.324**	**J**
CADMIUM	70	N	39	0.138	U	0.14	U	0.14	U	0.137	U	0.135	U	0.134	U
CALCIUM	NA		NA	**388**	**J**	**317**	**J**	**308**	**J**	**348**	**J**	**522**	**J**	**496**	**J**
CHROMIUM	120000	N[4]	1400 [4]	**10.8**	**J**	**7.01**	**J**	**8.36**	**J**	**6.17**	**J**	**5.98**	**J**	**6.59**	**J**
COBALT	23	N	NA	**11.7**		**6.79**		**7.95**		**5.73**		**4.61**		**5.64**	
COPPER	3100	N	3100	**19.9**	**J**	**11.3**	**J**	**13**	**J**	**10.3**	**J**	**10.5**	**J**	**14.4**	**J**
IRON	55000	N	NA	**22900**	**J**	**14800**	**J**	**18400**	**J**	**14400**	**J**	**12500**	**J**	**13600**	**J**
LEAD	400		150	**20.5**		**15.7**		**19**		**15.3**		**33.5**		**41.8**	
MAGNESIUM	NA		NA	**3800**	**J**	**1700**	**J**	**2100**	**J**	**1400**	**J**	**1100**	**J**	**1300**	**J**
MANGANESE	1800	N	390	**371**	**J**	**181**	**J**	**158**	**J**	**124**	**J**	**107**	**J**	**134**	**J**
MERCURY	23	N[5]	23	**0.007**	**J**	**0.011**		**0.011**		**0.011**		**0.012**		**0.028**	
NICKEL	1500	N	1000	**20.5**		**11**		**13.4**		**9.63**		**7.71**		**8.91**	
POTASSIUM	NA		NA	**884**		**589**		**725**		**561**		**477**		**494**	
SELENIUM	390	N	390	**1.47**	**J**	**1.12**	**J**	**1.25**	**J**	**0.902**	**J**	**0.976**	**J**	**1.02**	**J**
SILVER	390	N	200	**1.38**	**J**	**0.882**	**J**	**1.09**	**J**	**0.813**	**J**	**0.724**	**J**	**0.819**	**J**
SODIUM	NA		NA	**42.4**	**J**	**49.2**	**J**	**45.1**	**J**	**35**	**J**	**46.6**	**J**	**30.4**	**J**
VANADIUM	390	N	550	**20.2**		**14.7**		**16.4**		**12.8**		**11.2**		**12.8**	
ZINC	23000	N	6000	**47**		**39**		**45.2**		**37.6**		**41.4**		**56.5**	
MISCELLANEOUS PARAMETERS																	
CYANIDE (MG/KG)	21	N	200	0.136	U	0.138	U	**0.059**	**J**	0.136	U	0.136	U	**0.096**	**J**
PETROLEUM HYDROCARBONS (UG/KG)																	
TPH-DRO (C9-C40)	NA		500000	**6961**	**J**	**8758**	**J**	**9243**	**J**	**9200**	**J**	**9987**	**J**	**29346**	**J**

TABLE 5-1

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA RSL for Direct Contact - Residential[1]		RIDEM Direct Exposure - Residential[2]		TP-09-SOIL TP-09-SOIL 41572 NORMAL SOIL NORMAL 4 4		QDC_DRUM-SOIL QDC_DRUM-SOIL NORMAL SOIL NORMAL -- --		STOCKPILE-01 STOCKPILE-01 NORMAL SOIL NORMAL -- --		STOCKPILE-02 STOCKPILE-02 NORMAL SOIL NORMAL -- --	
VOLATILES (UG/KG)												
ACETONE	61000000	N	7800000		3.3	U	NA		NA		NA	
CIS-1,2-DICHLOROETHENE	160000	N	630000		0.65	U	NA		NA		NA	
TRICHLOROETHENE	4100	N	13000		0.65	U	NA		NA		NA	
SEMIVOLATILES (UG/KG)												
DIETHYL PHTHALATE	49000000	N	340000		**840**		NA		NA		NA	
DIMETHYL PHTHALATE	NA		1900000		**370**		NA		NA		NA	
FLUORANTHENE	2300000	N	20000		37.4	U	NA		NA		NA	
PYRENE	1700000	N	13000		37.4	U	NA		NA		NA	
PCBS (UG/KG)												
AROCLOR-1260	240	C	10000	[3]	**44.9**		**34.7**		3.6	U	3.6	U
METALS (MG/KG)												
ALUMINUM	77000	N	NA		**8900**	**J**	NA		NA		NA	
ANTIMONY	31	N	10		1.18	UJ	NA		NA		NA	
ARSENIC	0.67	C	7		**2.32**	**J**	NA		NA		NA	
BARIUM	15000	N	5500		**19.4**		NA		NA		NA	
BERYLLIUM	160	N	1.5		**0.362**	**J**	NA		NA		NA	
CADMIUM	70	N	39		0.142	U	NA		NA		NA	
CALCIUM	NA		NA		**684**	**J**	NA		NA		NA	
CHROMIUM	120000	N[4]	1400	[4]	**7.62**	**J**	NA		NA		NA	
COBALT	23	N	NA		**6.25**		NA		NA		NA	
COPPER	3100	N	3100		**13.1**	**J**	NA		NA		NA	
IRON	55000	N	NA		**15800**	**J**	NA		NA		NA	
LEAD	400		150		**50**		NA		NA		NA	
MAGNESIUM	NA		NA		**1600**	**J**	NA		NA		NA	
MANGANESE	1800	N	390		**159**	**J**	NA		NA		NA	
MERCURY	23	N[5]	23		**0.014**		NA		NA		NA	
NICKEL	1500	N	1000		**10.9**		NA		NA		NA	
POTASSIUM	NA		NA		**593**		NA		NA		NA	
SELENIUM	390	N	390		**1.08**	**J**	NA		NA		NA	
SILVER	390	N	200		**0.935**	**J**	NA		NA		NA	
SODIUM	NA		NA		**47.3**	**J**	NA		NA		NA	
VANADIUM	390	N	550		**15**		NA		NA		NA	
ZINC	23000	N	6000		**46.1**		NA		NA		NA	
MISCELLANEOUS PARAMETERS												
CYANIDE (MG/KG)	21	N	200		**0.195**	**J**	NA		NA		NA	
PETROLEUM HYDROCARBONS (UG/KG)												
TPH-DRO (C9-C40)	NA		500000		**9970**	**J**	NA		NA		NA	

Detected concentrations are presented in bold font. Concentrations exceeding the lower of USEPA RSLs and RIDEM residential criteria are shaded yellow.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening value is for polychlorinated biphenyls.
4 - The screening value is for trivalent chromium.
5 - The USEPA RSL is for mercuric chloride (and other mercury salts).

Definitions:
DRO = Diesel Range Organics
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 5-2

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO LEACHABILITY CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA Risk-Based SSL for Groundwater Protection[1]	RIDEM GA Leachability[2]	DRUM-01-SOIL DRUM-01-SOIL 41571 NORMAL SOIL NORMAL 3.5 3.5		DRUM-05-SOIL DRUM-05-SOIL 41569 NORMAL SOIL NORMAL 4 4		DRUM-06-SOIL DRUM-06-SOIL 41571 NORMAL SOIL NORMAL 6 6		DRUM-07-SOIL DRUM-07-SOIL 41571 ORIGINAL SOIL NORMAL 2.5 2.5		DRUM-07-SOIL DRUM-07-SOIL-D 41571 DUPLICATE SOIL NORMAL 2.5 2.5		DRUM-08-SOIL DRUM-08-SOIL 41571 NORMAL SOIL NORMAL 3 3	
VOLATILES (UG/KG)														
ACETONE	2900	NA	2.4	U	2.8	U	2.4	U	2.8	U	3	U	**9.3**	**J**
CIS-1,2-DICHLOROETHENE	11	1700	0.49	U	0.56	U	0.49	U	0.56	U	0.61	U	0.5	U
TRICHLOROETHENE	0.18	200	0.49	U	0.56	U	0.49	U	0.56	U	0.61	U	0.5	U
SEMIVOLATILES (UG/KG)														
DIETHYL PHTHALATE	6100	NA	37	U	35.9	U	35.7	U	35.4	U	35.6	U	35.9	U
DIMETHYL PHTHALATE	NA	NA	**420**		**440**		**360**		**640**		**770**		**680**	
FLUORANTHENE	89000	NA	**83.9**	**J**	35.9	U	35.7	U	35.4	U	35.6	U	35.9	U
PYRENE	13000	NA	37	U	35.9	U	35.7	U	35.4	U	35.6	U	35.9	U
PCBS (UG/KG)														
AROCLOR-1260	27	10000 [3]	**53.1**		**23.2**		**22.6**		**49.1**		**72.2**		**20.2**	
METALS (MG/KG)														
ALUMINUM	30000	NA	**1400**	**J**	**6900**	**J**	**7400**	**J**	**1400**	**J**	**1400**	**J**	**1100**	**J**
ANTIMONY	0.35	NA	1.2	UJ	1.13	UJ	1.16	UJ	1.09	UJ	1.12	UJ	1.14	UJ
ARSENIC	0.0015	NA	**2.14**		**1.46**		**1.91**		**2.28**		**2.2**		**1.84**	
BARIUM	160	NA	**16.8**		**15.1**		**16.9**		**14.6**		**14.3**		**12.4**	
BERYLLIUM	19	NA	**0.294**		**0.281**		**0.339**		**0.281**		**0.323**		**0.241**	**J**
CADMIUM	0.69	NA	0.144	U	**0.143**	**J**	0.139	U	0.13	U	0.134	U	0.137	U
CALCIUM	NA	NA	**602**	**J**	**638**	**J**	**611**	**J**	**495**	**J**	**492**	**J**	**581**	**J**
CHROMIUM	40000000 [4]	NA	**7.76**	**J**	**17.9**	**J**	**6.31**	**J**	**24.9**	**J**	**9.35**	**J**	**6.23**	**J**
COBALT	0.27	NA	**5.57**		**4.71**		**4.6**		**5.53**		**5.77**		**6.32**	
COPPER	28	NA	**9.25**		**5.87**		**7.54**		**9.36**		**11.8**		**8.22**	
IRON	350	NA	**2700**	**J**	**22200**	**J**	**13200**	**J**	**3700**	**J**	**3700**	**J**	**3500**	**J**
LEAD	14 [5]	NA	**37**	**J**	**97.4**	**J**	**39.6**	**J**	**128**	**J**	**47.3**	**J**	**22.8**	**J**
MAGNESIUM	NA	NA	**1400**		**1000**		**1100**		**1300**		**1300**		**995**	
MANGANESE	28	NA	**122**		**124**		**114**		**131**		**135**		**156**	
MERCURY	0.033	NA	**0.012**		**0.012**		**0.013**		**0.014**		**0.015**		**0.013**	
NICKEL	26	NA	**10.1**		**7.95**		**7.49**		**9.63**		**10.9**		**8.52**	
POTASSIUM	NA	NA	**563**	**J**	**419**	**J**	**477**	**J**	**508**	**J**	**490**	**J**	**404**	**J**
SELENIUM	0.52	NA	**0.463**	**J**	0.454	U	0.465	U	**0.552**	**J**	**0.536**	**J**	0.457	U
SILVER	0.8	NA	**0.896**		**1.48**	**J**	**0.808**	**J**	**1.19**		**1.23**		**1.18**	
SODIUM	NA	NA	**31.9**	**J**	**28**	**J**	**35.3**	**J**	**28.6**	**J**	**30.7**	**J**	**23.4**	**J**
VANADIUM	86	NA	**13.3**		**11.5**		**11.6**		**12.8**		**12.7**		**11**	
ZINC	370	NA	**44.8**		**43**		**44.9**		**49.4**		**54.7**		**36.9**	
MISCELLANEOUS PARAMETERS														
CYANIDE (MG/KG)	0.015	NA	**0.037**	**J**	**0.068**	**J**	0.134	U	0.133	U	**0.036**	**J**	**0.069**	**J**
PETROLEUM HYDROCARBONS (UG/KG)														
TPH-DRO (C9-C40)	NA	500000	**11554**	**J**	**7450**	**J**	**21736**	**J**	**8236**	**J**	**14477**	**J**	**10853**	**J**

TABLE 5-2

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO LEACHABILITY CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA Risk-Based SSL for Groundwater Protection[1]	RIDEM GA Leachability[2]	DRUM-09-SOIL DRUM-09-SOIL 41571 NORMAL SOIL NORMAL 4 4		DRUM-10-SOIL DRUM-10-SOIL 41571 NORMAL SOIL NORMAL 3 3		DRUM-11-SOIL DRUM-11-SOIL 41571 NORMAL SOIL NORMAL 4 4		DRUM-12-SOIL DRUM-12-SOIL 41571 NORMAL SOIL NORMAL 4.5 4.5		TP-01-PIPE TP-01-PIPE 41572 NORMAL SOIL NORMAL 4 4	
VOLATILES (UG/KG)												
ACETONE	2900	NA	2.7	U	3	U	2.8	U	2.4	U	2.6	UJ
CIS-1,2-DICHLOROETHENE	11	1700	0.54	U	0.59	U	**10.3**		**14.4**		0.52	U
TRICHLOROETHENE	0.18	200	0.54	U	0.59	U	**4.4**	**J**	**7**		0.52	U
SEMIVOLATILES (UG/KG)												
DIETHYL PHTHALATE	6100	NA	36.2	U	35.4	U	**140**	**J**	36.1	U	36.9	U
DIMETHYL PHTHALATE	NA	NA	**220**	**J**	**450**		**450**		**430**		**390**	
FLUORANTHENE	89000	NA	36.2	U	**74.7**	**J**	36.4	U	36.1	U	36.9	U
PYRENE	13000	NA	36.2	U	35.4	U	36.4	U	36.1	U	36.9	U
PCBS (UG/KG)												
AROCLOR-1260	27	10000 [3]	**17.3**	**J**	**38.6**		**45**		**26.7**		**12.8**	**J**
METALS (MG/KG)												
ALUMINUM	30000	NA	**1200**	**J**	**1200**	**J**	**8900**	**J**	**1400**	**J**	**12000**	**J**
ANTIMONY	0.35	NA	**0.778**	**J**	1.14	UJ	1.15	UJ	1.11	UJ	1.13	UJ
ARSENIC	0.0015	NA	**5.62**		**1.8**		**1.97**		**2.06**		**1.74**	**J**
BARIUM	160	NA	**16.1**		**13.5**		**16.6**		**12.5**		**20.5**	
BERYLLIUM	19	NA	**0.182**	**J**	**0.306**		**0.384**		**0.311**		**0.532**	**J**
CADMIUM	0.69	NA	0.138	U	0.136	U	**0.133**	**J**	0.133	U	0.136	U
CALCIUM	NA	NA	**770**	**J**	**454**	**J**	**570**	**J**	**355**	**J**	**362**	**J**
CHROMIUM	40000000 [4]	NA	**8.55**	**J**	**6.37**	**J**	**8.5**	**J**	**7.81**	**J**	**9.13**	**J**
COBALT	0.27	NA	**5.63**		**4.93**		**6.26**		**5.11**		**10.9**	
COPPER	28	NA	**9.45**		**6.94**		**8.8**		**8.36**		**18.8**	**J**
IRON	350	NA	**33400**	**J**	**2700**	**J**	**14100**	**J**	**2700**	**J**	**28700**	**J**
LEAD	14 [5]	NA	**34.8**	**J**	**31.7**	**J**	**36.3**	**J**	**31.6**	**J**	**24.2**	
MAGNESIUM	NA	NA	**1000**		**1100**		**1500**		**1200**		**3900**	**J**
MANGANESE	28	NA	**172**		**104**		**147**		**118**		**179**	**J**
MERCURY	0.033	NA	**0.012**		**0.008**	**J**	**0.013**		**0.012**		**0.005**	**J**
NICKEL	26	NA	**9.63**		**7.47**		**9.71**		**8.15**		**17.7**	
POTASSIUM	NA	NA	**469**	**J**	**499**	**J**	**554**	**J**	**517**	**J**	**884**	
SELENIUM	0.52	NA	**0.623**	**J**	**0.411**	**J**	0.459	U	**0.44**	**J**	**1.51**	**J**
SILVER	0.8	NA	**2.13**	**J**	**0.864**		**0.9**	**J**	**0.837**		**1.63**	**J**
SODIUM	NA	NA	**33.3**	**J**	**26.3**	**J**	**28.4**	**J**	**26.2**	**J**	**48.1**	**J**
VANADIUM	86	NA	**12.7**		**10.87**		**14.4**		**11.7**		**17.5**	
ZINC	370	NA	**50.4**		**45.9**		**42.3**		**47.9**		**55.7**	
MISCELLANEOUS PARAMETERS												
CYANIDE (MG/KG)	0.015	NA	**0.068**	**J**	0.132	U	0.136	U	0.136	U	0.138	U
PETROLEUM HYDROCARBONS (UG/KG)												
TPH-DRO (C9-C40)	NA	500000	**106263**	**J**	**9488**	**J**	**33757**	**J**	**20532**	**J**	**7426**	**J**

TABLE 5-2

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO LEACHABILITY CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA Risk-Based SSL for Groundwater Protection[1]	RIDEM GA Leachability[2]	TP-02-PIPE TP-02-PIPE 41572 NORMAL SOIL NORMAL 4 4		TP-03-PIPE TP-03-PIPE 41572 NORMAL SOIL NORMAL 4 4		TP-04-SOIL TP-04-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-05-SOIL TP-05-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-06-SOIL TP-06-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-07-SOIL TP-07-SOIL 41572 NORMAL SOIL NORMAL 4 4	
VOLATILES (UG/KG)														
ACETONE	2900	NA	2.5	UJ	2.4	UJ	2.3	UJ	2.3	UJ	2.6	UJ	2.1	UJ
CIS-1,2-DICHLOROETHENE	11	1700	0.51	U	0.49	U	0.46	U	0.46	U	0.52	U	0.42	U
TRICHLOROETHENE	0.18	200	0.51	U	0.49	U	**1.1**	**J**	0.46	U	0.52	U	0.42	U
SEMIVOLATILES (UG/KG)														
DIETHYL PHTHALATE	6100	NA	36.5	U	**2100**		**620**		36.4	U	36.1	U	36.2	U
DIMETHYL PHTHALATE	NA	NA	**380**		**320**	**J**	**390**		**440**		**400**		**380**	
FLUORANTHENE	89000	NA	36.5	U	36	U	36.6	U	36.4	U	36.1	U	36.2	U
PYRENE	13000	NA	36.5	U	36	U	36.6	U	36.4	U	36.1	U	36.2	U
PCBS (UG/KG)														
AROCLOR-1260	27	10000 [3]	**26.2**		**28.5**		**14.2**	**J**	**12**	**J**	**15.2**	**J**	**44.6**	
METALS (MG/KG)														
ALUMINUM	30000	NA	**10400**	**J**	**11500**	**J**	**9000**	**J**	**11100**	**J**	**8300**	**J**	**7200**	**J**
ANTIMONY	0.35	NA	1.17	UJ	1.15	UJ	1.17	UJ	1.16	UJ	1.14	UJ	1.12	UJ
ARSENIC	0.0015	NA	**2.32**	**J**	**3.7**	**J**	**1.68**	**J**	**1.87**	**J**	**1.63**	**J**	**1.83**	**J**
BARIUM	160	NA	**13.8**		**20.9**		**15.6**		**17**		**14.1**		**15.3**	
BERYLLIUM	19	NA	**0.377**	**J**	**0.502**	**J**	**0.397**	**J**	**0.438**	**J**	**0.36**	**J**	**0.33**	**J**
CADMIUM	0.69	NA	0.14	U	0.138	U	0.14	U	0.14	U	0.137	U	0.135	U
CALCIUM	NA	NA	**298**	**J**	**388**	**J**	**317**	**J**	**308**	**J**	**348**	**J**	**522**	**J**
CHROMIUM	40000000 [4]	NA	**7.42**	**J**	**10.8**	**J**	**7.01**	**J**	**8.36**	**J**	**6.17**	**J**	**5.98**	**J**
COBALT	0.27	NA	**6.65**		**11.7**		**6.79**		**7.95**		**5.73**		**4.61**	
COPPER	28	NA	**10.9**	**J**	**19.9**	**J**	**11.3**	**J**	**13**	**J**	**10.3**	**J**	**10.5**	**J**
IRON	350	NA	**17400**	**J**	**22900**	**J**	**14800**	**J**	**18400**	**J**	**14400**	**J**	**12500**	**J**
LEAD	14 [5]	NA	**28.1**		**20.5**		**15.7**		**19**		**15.3**		**33.5**	
MAGNESIUM	NA	NA	**1600**	**J**	**3800**	**J**	**1700**	**J**	**2100**	**J**	**1400**	**J**	**1100**	**J**
MANGANESE	28	NA	**137**	**J**	**371**	**J**	**181**	**J**	**158**	**J**	**124**	**J**	**107**	**J**
MERCURY	0.033	NA	**0.013**		**0.007**	**J**	**0.011**		**0.011**		**0.011**		**0.012**	
NICKEL	26	NA	**11.6**		**20.5**		**11**		**13.4**		**9.63**		**7.71**	
POTASSIUM	NA	NA	**536**		**884**		**589**		**725**		**561**		**477**	
SELENIUM	0.52	NA	**1.1**	**J**	**1.47**	**J**	**1.12**	**J**	**1.25**	**J**	**0.902**	**J**	**0.976**	**J**
SILVER	0.8	NA	**0.954**	**J**	**1.38**	**J**	**0.882**	**J**	**1.09**	**J**	**0.813**	**J**	**0.724**	**J**
SODIUM	NA	NA	**41.3**	**J**	**42.4**	**J**	**49.2**	**J**	**45.1**	**J**	**35**	**J**	**46.6**	**J**
VANADIUM	86	NA	**15.2**		**20.2**		**14.7**		**16.4**		**12.8**		**11.2**	
ZINC	370	NA	**37.5**		**47**		**39**		**45.2**		**37.6**		**41.4**	
MISCELLANEOUS PARAMETERS														
CYANIDE (MG/KG)	0.015	NA	0.137	U	0.136	U	0.138	U	**0.059**	**J**	0.136	U	0.136	U
PETROLEUM HYDROCARBONS (UG/KG)														
TPH-DRO (C9-C40)	NA	500000	**8379**	**J**	**6961**	**J**	**8758**	**J**	**9243**	**J**	**9200**	**J**	**9987**	**J**

TABLE 5-2

SUMMARY OF DETECTIONS - DRUM REMOVAL AREA SOIL - COMPARISON TO LEACHABILITY CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE TOP DEPTH BOTTOM DEPTH	USEPA Risk-Based SSL for Groundwater Protection[1]	RIDEM GA Leachability[2]	TP-08-SOIL TP-08-SOIL 41572 NORMAL SOIL NORMAL 4 4		TP-09-SOIL TP-09-SOIL 41572 NORMAL SOIL NORMAL 4 4		QDC_DRUM-SOIL QDC_DRUM-SOIL NORMAL SOIL NORMAL -- --	STOCKPILE-01 STOCKPILE-01 NORMAL SOIL NORMAL -- --	STOCKPILE-02 STOCKPILE-02 NORMAL SOIL NORMAL -- --
VOLATILES (UG/KG)									
ACETONE	2900	NA	3	UJ	3.3	U	NA	NA	NA
CIS-1,2-DICHLOROETHENE	11	1700	0.6	U	0.65	U	NA	NA	NA
TRICHLOROETHENE	0.18	200	0.6	U	0.65	U	NA	NA	NA
SEMIVOLATILES (UG/KG)									
DIETHYL PHTHALATE	6100	NA	34.8	U	**840**		NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	**320**	**J**	**370**		NA	NA	NA
FLUORANTHENE	89000	NA	34.8	U	37.4	U	NA	NA	NA
PYRENE	13000	NA	**73.7**	**J**	37.4	U	NA	NA	NA
PCBS (UG/KG)									
AROCLOR-1260	27	10000 [3]	**61.1**		**44.9**		**34.7**	3.6 U	3.6 U
METALS (MG/KG)									
ALUMINUM	30000	NA	**7800**	**J**	**8900**	**J**	NA	NA	NA
ANTIMONY	0.35	NA	1.12	UJ	1.18	UJ	NA	NA	NA
ARSENIC	0.0015	NA	**1.94**	**J**	**2.32**	**J**	NA	NA	NA
BARIUM	160	NA	**16**		**19.4**		NA	NA	NA
BERYLLIUM	19	NA	**0.324**	**J**	**0.362**	**J**	NA	NA	NA
CADMIUM	0.69	NA	0.134	U	0.142	U	NA	NA	NA
CALCIUM	NA	NA	**496**	**J**	**684**	**J**	NA	NA	NA
CHROMIUM	40000000 [4]	NA	**6.59**	**J**	**7.62**	**J**	NA	NA	NA
COBALT	0.27	NA	**5.64**		**6.25**		NA	NA	NA
COPPER	28	NA	**14.4**	**J**	**13.1**	**J**	NA	NA	NA
IRON	350	NA	**13600**	**J**	**15800**	**J**	NA	NA	NA
LEAD	14 [5]	NA	**41.8**		**50**		NA	NA	NA
MAGNESIUM	NA	NA	**1300**	**J**	**1600**	**J**	NA	NA	NA
MANGANESE	28	NA	**134**	**J**	**159**	**J**	NA	NA	NA
MERCURY	0.033	NA	**0.028**		**0.014**		NA	NA	NA
NICKEL	26	NA	**8.91**		**10.9**		NA	NA	NA
POTASSIUM	NA	NA	**494**		**593**		NA	NA	NA
SELENIUM	0.52	NA	**1.02**	**J**	**1.08**	**J**	NA	NA	NA
SILVER	0.8	NA	**0.819**	**J**	**0.935**	**J**	NA	NA	NA
SODIUM	NA	NA	**30.4**	**J**	**47.3**	**J**	NA	NA	NA
VANADIUM	86	NA	**12.8**		**15**		NA	NA	NA
ZINC	370	NA	**56.5**		**46.1**		NA	NA	NA
MISCELLANEOUS PARAMETERS									
CYANIDE (MG/KG)	0.015	NA	**0.096**	**J**	**0.195**	**J**	NA	NA	NA
PETROLEUM HYDROCARBONS (UG/KG)									
TPH-DRO (C9-C40)	NA	500000	**29346**	**J**	**9970**	**J**	NA	NA	NA

Detected concentrations are presented in bold font. Concentrations exceeding the lower of USEPA Risk-based SSLs and RIDEM GA leachability criteria are shaded yellow.

Footnotes:
1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
Risk-based soil screening levels (SSLs) are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening value is for polychlorinated biphenyls.
4 - The screening value is for trivalent chromium.
5 - Maximum Contaminant Level (MCL)-based value.

Definitions:
DRO = Diesel Range Organics
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 5-3

DESCRIPTIVE STATISTICS - DRUM REMOVAL AREA SOIL
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Parameter	CAS	Frequency of Detection	Minimum Result	Minimum Qualifier	Maximum Result	Maximum Qualifier	Location of Maximum Detection	Sample of Maximum Detection	Minimum Non-Detect	Maximum Non-Detect	Average Of Positive Results	Average Of All Results	Standard Deviation	USEPA RSL for Direct Contact - Residential[1]	# Exceeding USEPA RSL for Direct Contact - Residential	RIDEM Direct Exposure - Residential[2]	# Exceeding RIDEM Direct Exposure - Residential	USEPA Risk-Based SSL for Groundwater Protection[1]	# Exceeding USEPA Risk-Based SSL for Groundwater Protection	RIDEM GA Leachability[2]	# Exceeding RIDEM GA Leachability
VOLATILES (UG/KG)																					
ACETONE	67-64-1	1/18	9.3	J	9.3	J	DRUM-08-SOIL	DRUM-08-SOIL	2.1	3.3	9.3	1.8	1.9	61000000 N	0	7800000	0	2900	0	NA	NA
CIS-1,2-DICHLOROETHENE	156-59-2	2/18	10.3	--	14.4	--	DRUM-12-SOIL	DRUM-12-SOIL	0.42	0.65	12.4	1.6	4.0	160000 N	0	630000	0	**11**	1	1700	0
TRICHLOROETHENE	79-01-6	3/18	1.1	J	7	--	DRUM-12-SOIL	DRUM-12-SOIL	0.42	0.65	4.2	0.91	1.8	4100 N	0	13000	0	**0.18**	3	200	0
SEMIVOLATILES (UG/KG)																					
DIETHYL PHTHALATE	84-66-2	4/18	140	J	2100	--	TP-03-PIPE	TP-03-PIPE	34.8	37	925	220	523	49000000 N	0	340000	0	6100	0	NA	NA
DIMETHYL PHTHALATE	131-11-3	18/18	220	J	770	--	DRUM-07-SOIL	DRUM-07-SOIL-D	--	--	419	419	115	NA	NA	1900000	0	NA	0	NA	NA
FLUORANTHENE	206-44-0	2/18	74.7	J	83.9	J	DRUM-01-SOIL	DRUM-01-SOIL	34.8	37.4	79.3	24.9	19.9	2300000 N	0	20000	0	89000	0	NA	NA
PYRENE	129-00-0	1/18	73.7	J	73.7	J	TP-08-SOIL	TP-08-SOIL	35.4	37.4	73.7	21.2	13.1	1700000 N	0	13000	0	13000	0	NA	NA
PCBS (UG/KG)																					
AROCLOR-1260	11096-82-5	19/21	12	J	72.2	--	DRUM-07-SOIL	DRUM-07-SOIL-D	3.6	3.6	31.7	28.8	17.7	240 C	0	10000 [3]	0	**27**	9	10000 [3]	0
METALS (MG/KG)																					
ALUMINUM	7429-90-5	18/18	1100	J	12000	J	TP-01-PIPE	TP-01-PIPE	--	--	6506	6506	4052	77000 N	0	NA	0	30000	0	NA	NA
ANTIMONY	7440-36-0	1/18	0.778	J	0.778	J	DRUM-09-SOIL	DRUM-09-SOIL	1.09	1.2	0.78	0.58	0.050	31 N	0	10	0	**0.35**	1	NA	NA
ARSENIC	7440-38-2	18/18	1.46	--	5.62	--	DRUM-09-SOIL	DRUM-09-SOIL	--	--	2.2	2.2	0.97	**0.67 C**	18	7	0	**0.0015**	18	NA	NA
BARIUM	7440-39-3	18/18	12.4	--	20.9	--	TP-03-PIPE	TP-03-PIPE	--	--	15.9	15.9	2.5	15000 N	0	5500	0	160	0	NA	NA
BERYLLIUM	7440-41-7	18/18	0.182	J	0.532	J	TP-01-PIPE	TP-01-PIPE	--	--	0.35	0.35	0.085	160 N	0	1.5	0	19	0	NA	NA
CADMIUM	7440-43-9	2/18	0.133	J	0.143	J	DRUM-05-SOIL	DRUM-05-SOIL	0.13	0.144	0.14	0.076	0.023	70 N	0	39	0	0.69	0	NA	NA
CALCIUM	7440-70-2	18/18	298	J	770	J	DRUM-09-SOIL	DRUM-09-SOIL	--	--	489	489	143	NA	0	NA	0	NA	NA	NA	NA
CHROMIUM	7440-47-3	18/18	5.98	J	24.9	J	DRUM-07-SOIL	DRUM-07-SOIL	--	--	8.6	8.6	3.5	120000 N[4]	0	1400 [4]	0	40000000 [4]	0	NA	NA
COBALT	7440-48-4	18/18	4.6	--	11.7	--	TP-03-PIPE	TP-03-PIPE	--	--	6.4	6.4	2.0	23 N	0	NA	0	**0.27**	18	NA	NA
COPPER	7440-50-8	18/18	5.87	--	19.9	J	TP-03-PIPE	TP-03-PIPE	--	--	11.0	11.0	3.8	3100 N	0	3100	0	28	0	NA	NA
IRON	7439-89-6	18/18	2700	J	33400	J	DRUM-09-SOIL	DRUM-09-SOIL	--	--	14260	14260	8994	55000 N	0	NA	0	**350**	18	NA	NA
LEAD	7439-92-1	18/18	15.3	--	128	J	DRUM-07-SOIL	DRUM-07-SOIL	--	--	37.1	37.1	22.3	400	0	150	0	**14** [6]	18	NA	NA
MAGNESIUM	7439-95-4	18/18	995	--	3900	J	TP-01-PIPE	TP-01-PIPE	--	--	1616	1616	863	NA	0	NA	0	NA	NA	NA	NA
MANGANESE	7439-96-5	18/18	104	--	371	J	TP-03-PIPE	TP-03-PIPE	--	--	152	152	59.6	1800 N	0	390	0	**28**	18	NA	NA
MERCURY	7439-97-6	18/18	0.005	J	0.028	--	TP-08-SOIL	TP-08-SOIL	--	--	0.012	0.012	0.0046	23 N[5]	0	23	0	0.033	0	NA	NA
NICKEL	7440-02-0	18/18	7.47	--	20.5	--	TP-03-PIPE	TP-03-PIPE	--	--	10.6	10.6	3.5	1500 N	0	1000	0	26	0	NA	NA
POTASSIUM	7440-09-7	18/18	404	J	884	--	TP-01-PIPE, TP-03-PIPE	TP-01-PIPE, TP-03-PIPE	--	--	564	564	137	NA	0	NA	0	NA	NA	NA	NA
SELENIUM	7782-49-2	14/18	0.411	J	1.51	J	TP-01-PIPE	TP-01-PIPE	0.454	0.465	0.92	0.77	0.44	390 N	0	390	0	**0.52**	11	NA	NA
SILVER	7440-22-4	18/18	0.724	J	2.13	J	DRUM-09-SOIL	DRUM-09-SOIL	--	--	1.1	1.1	0.37	390 N	0	200	0	**0.8**	17	NA	NA
SODIUM	7440-23-5	18/18	23.4	J	49.2	J	TP-04-SOIL	TP-04-SOIL	--	--	36.0	36.0	8.7	NA	0	NA	0	NA	NA	NA	NA
VANADIUM	7440-62-2	18/18	10.87	--	20.2	--	TP-03-PIPE	TP-03-PIPE	--	--	13.7	13.7	2.5	390 N	0	550	0	86	0	NA	NA
ZINC	7440-66-6	18/18	36.9	--	56.5	--	TP-08-SOIL	TP-08-SOIL	--	--	45.2	45.2	5.8	23000 N	0	6000	0	370	0	NA	NA
MISCELLANEOUS PARAMETERS																					
CYANIDE (MG/KG)	57-12-5	8/18	0.036	J	0.195	J	TP-09-SOIL	TP-09-SOIL	0.132	0.138	0.079	0.073	0.033	21 N	0	200	0	**0.015**	8	NA	NA
PETROLEUM HYDROCARBONS (UG/KG)																					
TPH-DRO (C9-C40)	--	18/18	6961	J	106300	J	DRUM-09-SOIL	DRUM-09-SOIL	--	--	18460	18460	23260	NA	0	500000	0	NA	18	500000	0

Criteria exceeded by one or more concentrations are shaded black with bold font.

Footnotes:

1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.
Risk-based soil screening levels (SSLs) are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.
2 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
3 - The screening value is for polychlorinated biphenyls.
4 - The screening value is for trivalent chromium.
5 - The USEPA RSL is for mercuric chloride (and other mercury salts).
6 - Maximum Contaminant Level (MCL)-based value.

Definitions:

DRO = Diesel Range Organics
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:

TABLE 5-4

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SACODE TOP DEPTH BOTTOM DEPTH	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW03-15S MW03-15S-NWG-100114 20141001 NORMAL 13 23**	**MW03-15I MW03-15I-NWG-092914 20140929 NORMAL 45 55**	**MW03-16S MW03-16S-NWG-100614 20141006 NORMAL 11.5 21.5**
VOLATILES (UG/L)								
1,1,2,2-TETRACHLOROETHANE	NA	NA	0.076	C	NA	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	5	NA	0.28	C	5	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	70	2400	36	N	70	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	100	2800	360	N	100	1 U	1 U	1 U
TRICHLOROETHENE	5	540	0.49	C	5	**1.1**	0.5 U	**1.6**
VINYL CHLORIDE	2	2	0.019	C	2	0.5 U	0.5 U	0.5 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	**23.3**	**88.2**	17.8 U
ANTIMONY	6	NA	7.8	N	NA	0.2 U	**0.53 J**	0.2 U
BARIUM	2000	NA	3800	N	2000	5.2 U	**18**	**8.6 J**
CADMIUM	5	NA	9.2	N	5	**0.7 J**	**0.29 J**	0.15 U
CALCIUM	NA	NA	NA		NA	**3490**	**8290**	**7140**
CHROMIUM	100	NA	22000	C[4]	100	**0.98 J**	**1.4 J**	**0.97 J**
COBALT	NA	NA	6	N	NA	0.64 U	**16.7**	0.034 U
COPPER	NA	NA	800	N	1300	0.46 U	0.68 U	0.38 U
IRON	NA	NA	14000	N	NA	20 U	**6030 J**	20 U
MAGNESIUM	NA	NA	NA		NA	**1390**	**2810**	**1010**
MANGANESE	NA	NA	430	N	NA	**21.7**	**134**	**10.6**
NICKEL	100	NA	390	N	NA	**3.9**	**25.3**	**0.95 J**
POTASSIUM	NA	NA	NA		NA	**772**	**1530**	**1200**
SODIUM	NA	NA	NA		NA	**6830**	**22300**	**6690**
VANADIUM	NA	NA	86	N	NA	**0.84 J**	1 U	**0.84 J**
ZINC	NA	NA	6000	N	NA	**2.5**	**48**	**1.2 J**

TABLE 5-4

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SACODE TOP DEPTH BOTTOM DEPTH	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW03-15S MW03-15S-NWG-100114 20141001 NORMAL 13 23**	**MW03-15I MW03-15I-NWG-092914 20140929 NORMAL 45 55**	**MW03-16S MW03-16S-NWG-100614 20141006 NORMAL 11.5 21.5**
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	20.7 U	9.6 U	15.2 U
ANTIMONY	6	NA	7.8	N	NA	0.2 U	0.2 U	0.2 U
BARIUM	2000	NA	3800	N	2000	5.4 U	**18.7**	**8.2 J**
CADMIUM	5	NA	9.2	N	5	0.15 U	0.15 U	0.15 U
CALCIUM	NA	NA	NA		NA	**3610**	**8380**	**6790**
CHROMIUM	100	NA	22000	C[4]	100	**1.1 J**	**1 J**	**0.88 J**
COBALT	NA	NA	6	N	NA	0.66 U	**17.2**	0.051 U
COPPER	NA	NA	800	N	1300	1 U	1.1 U	**1.2 J**
IRON	NA	NA	14000	N	NA	20 U	**6350 J**	20 U
LEAD	15	NA	15		15	0.15 U	0.15 U	0.073 U
MAGNESIUM	NA	NA	NA		NA	**1430**	**2830**	**969**
MANGANESE	NA	NA	430	N	NA	**22.4**	**147**	**10.1**
NICKEL	100	NA	390	N	NA	**4.6**	**25.5**	**1.8**
POTASSIUM	NA	NA	NA		NA	**808**	**1540**	**1160**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U	0.25 U
SODIUM	NA	NA	NA		NA	**7060**	**22200**	**6430**
VANADIUM	NA	NA	86	N	NA	1 U	1 U	**1 J**
ZINC	NA	NA	6000	N	NA	**2.4**	**48.8**	**2**
PETROLEUM HYDROCARBONS (MG/L)								
TPH (C09-C40)	NA	NA	NA		NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	20 U	20 U

TABLE 5-4

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW03-16I		MW03-17S
SAMPLE ID						MW03-16I-NWG-102814	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014
SAMPLE DATE	RIDEM GA	RIDEM GB	EPA RSL		EPA MCL	20141028	20141028	20140930
SACODE	(ug/L)[1]	(ug/L)[1]	(ug/L)[2]		(ug/L)[3]	ORIG	DUP	ORIG
TOP DEPTH						45	45	11.5
BOTTOM DEPTH						55	55	21.5
VOLATILES (UG/L)								
1,1,2,2-TETRACHLOROETHANE	NA	NA	0.076	C	NA	**65**	NA	0.5 U
1,1,2-TRICHLOROETHANE	5	NA	0.28	C	5	**5.6**	NA	1 U
CIS-1,2-DICHLOROETHENE	70	2400	36	N	70	**100**	NA	**1.3**
TRANS-1,2-DICHLOROETHENE	100	2800	360	N	100	**44**	NA	1 U
TRICHLOROETHENE	5	540	0.49	C	5	**170**	NA	**3.3**
VINYL CHLORIDE	2	2	0.019	C	2	**2.4**	NA	0.5 U
METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	**26.6**	NA	**37.4**
ANTIMONY	6	NA	7.8	N	NA	**0.35 J**	NA	0.2 U
BARIUM	2000	NA	3800	N	2000	**15.5**	NA	**15.5**
CADMIUM	5	NA	9.2	N	5	0.15 U	NA	**0.14 J**
CALCIUM	NA	NA	NA		NA	**9590**	NA	**6780**
CHROMIUM	100	NA	22000	C[4]	100	0.25 U	NA	**0.81 J**
COBALT	NA	NA	6	N	NA	**7.2**	NA	**7.3**
COPPER	NA	NA	800	N	1300	**0.29 J**	NA	**1.5 J**
IRON	NA	NA	14000	N	NA	**10800**	NA	51.9 U
MAGNESIUM	NA	NA	NA		NA	**3700**	NA	**2240**
MANGANESE	NA	NA	430	N	NA	**373**	NA	**110**
NICKEL	100	NA	390	N	NA	**16.8**	NA	**10.5**
POTASSIUM	NA	NA	NA		NA	**1670**	NA	**1480**
SODIUM	NA	NA	NA		NA	**16300**	NA	**11300**
VANADIUM	NA	NA	86	N	NA	1 U	NA	1 U
ZINC	NA	NA	6000	N	NA	**60.5 J**	NA	**11.2**

TABLE 5-4

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION						MW03-16I		MW03-17S
SAMPLE ID						MW03-16I-NWG-102814	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014
SAMPLE DATE	RIDEM GA	RIDEM GB	EPA RSL		EPA MCL	20141028	20141028	20140930
SACODE	(ug/L)[1]	(ug/L)[1]	(ug/L)[2]		(ug/L)[3]	ORIG	DUP	ORIG
TOP DEPTH						45	45	11.5
BOTTOM DEPTH						55	55	21.5
DISSOLVED METALS (UG/L)								
ALUMINUM	NA	NA	20000	N	NA	6.8 U	NA	**33.6**
ANTIMONY	6	NA	7.8	N	NA	**0.32 J**	NA	0.2 U
BARIUM	2000	NA	3800	N	2000	**15.6**	NA	**15.5**
CADMIUM	5	NA	9.2	N	5	0.15 U	NA	**0.92 J**
CALCIUM	NA	NA	NA		NA	**9880**	NA	**6820**
CHROMIUM	100	NA	22000	C[4]	100	0.25 U	NA	**0.84 J**
COBALT	NA	NA	6	N	NA	**7.4**	NA	**7.2**
COPPER	NA	NA	800	N	1300	**0.85 J**	NA	**2.5**
IRON	NA	NA	14000	N	NA	**10900**	NA	45.1 U
LEAD	15	NA	15		15	0.19 U	NA	0.078 U
MAGNESIUM	NA	NA	NA		NA	**3770**	NA	**2220**
MANGANESE	NA	NA	430	N	NA	**377**	NA	**106**
NICKEL	100	NA	390	N	NA	**17.2**	NA	**10.7**
POTASSIUM	NA	NA	NA		NA	**1750**	NA	**1510**
SELENIUM	50	NA	100	N	50	0.25 U	NA	0.25 U
SODIUM	NA	NA	NA		NA	**16800**	NA	**11400**
VANADIUM	NA	NA	86	N	NA	1 U	NA	1 U
ZINC	NA	NA	6000	N	NA	**85.7 J**	NA	**10.6**
PETROLEUM HYDROCARBONS (MG/L)							NA	
TPH (C09-C40)	NA	NA	NA		NA	0.05 U	NA	0.05 U
PETROLEUM HYDROCARBONS (UG/L)								
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	**130 R**	NA	20 U

TABLE 5-4

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SACODE TOP DEPTH BOTTOM DEPTH	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW03-17S MW03-17S-NWG-093014-D 20140930 DUP 11.5 21.5**	**MW03-17I MW03-17I-NWG-100214 20141002 NORMAL 45 55**
VOLATILES (UG/L)							
1,1,2,2-TETRACHLOROETHANE	NA	NA	0.076	C	NA	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	5	NA	0.28	C	5	1 U	1 U
CIS-1,2-DICHLOROETHENE	70	2400	36	N	70	**1.3**	0.5 U
TRANS-1,2-DICHLOROETHENE	100	2800	360	N	100	1 U	1 U
TRICHLOROETHENE	5	540	0.49	C	5	**3.7**	**4.9**
VINYL CHLORIDE	2	2	0.019	C	2	0.5 U	0.5 U
METALS (UG/L)							
ALUMINUM	NA	NA	20000	N	NA	**37.6**	**21**
ANTIMONY	6	NA	7.8	N	NA	**0.21 J**	**0.22 J**
BARIUM	2000	NA	3800	N	2000	**15.6**	**10.8**
CADMIUM	5	NA	9.2	N	5	**0.12 J**	0.15 U
CALCIUM	NA	NA	NA		NA	**6660**	**7390**
CHROMIUM	100	NA	22000	C[4]	100	**1 J**	**1.2 J**
COBALT	NA	NA	6	N	NA	**7.3**	**11.4**
COPPER	NA	NA	800	N	1300	**1.9 J**	0.38 U
IRON	NA	NA	14000	N	NA	52.5 U	**1500**
MAGNESIUM	NA	NA	NA		NA	**2240**	**2380**
MANGANESE	NA	NA	430	N	NA	**110**	**40.3**
NICKEL	100	NA	390	N	NA	**10.1**	**19.7**
POTASSIUM	NA	NA	NA		NA	**1490**	**1510**
SODIUM	NA	NA	NA		NA	**11400**	**18600**
VANADIUM	NA	NA	86	N	NA	**0.77 J**	**0.63 J**
ZINC	NA	NA	6000	N	NA	**10.2**	**22.1**

TABLE 5-4

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO DIRECT CONTACT CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SACODE TOP DEPTH BOTTOM DEPTH	**RIDEM GA (ug/L)[1]**	**RIDEM GB (ug/L)[1]**	**EPA RSL (ug/L)[2]**		**EPA MCL (ug/L)[3]**	**MW03-17S MW03-17S-NWG-093014-D 20140930 DUP 11.5 21.5**	**MW03-17I MW03-17I-NWG-100214 20141002 NORMAL 45 55**
DISSOLVED METALS (UG/L)							
ALUMINUM	NA	NA	20000	N	NA	**35**	18.3 U
ANTIMONY	6	NA	7.8	N	NA	**0.21 J**	0.2 U
BARIUM	2000	NA	3800	N	2000	**15.8**	**10.9**
CADMIUM	5	NA	9.2	N	5	**0.13 J**	0.15 U
CALCIUM	NA	NA	NA		NA	**6840**	**7520**
CHROMIUM	100	NA	22000	C[4]	100	**0.94 J**	**0.83 J**
COBALT	NA	NA	6	N	NA	**7.4**	**11.4**
COPPER	NA	NA	800	N	1300	**3.1**	**0.74 J**
IRON	NA	NA	14000	N	NA	46.7 U	**1490**
LEAD	15	NA	15		15	0.075 U	0.075 U
MAGNESIUM	NA	NA	NA		NA	**2280**	**2420**
MANGANESE	NA	NA	430	N	NA	**107**	**40**
NICKEL	100	NA	390	N	NA	**11**	**20.3**
POTASSIUM	NA	NA	NA		NA	**1550**	**1560**
SELENIUM	50	NA	100	N	50	0.25 U	0.25 U
SODIUM	NA	NA	NA		NA	**11700**	**19000**
VANADIUM	NA	NA	86	N	NA	**1 J**	1 U
ZINC	NA	NA	6000	N	NA	**14.2**	**21.1**
PETROLEUM HYDROCARBONS (MG/L)							
TPH (C09-C40)	NA	NA	NA		NA	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)							
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	NA	NA		NA	20 U	20 U

Detected concentrations are presented in bold font. Concentrations exceeding the lower of USEPA RSLs and RIDEM residential criteria are shaded yellow. Concentrations exceeding MCLs are presented in bold red font and shaded yellow.

Footnotes:

1 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.
3 - Federal Maximum Contaminant Levels (MCLs), 2012 Edition of the Drinking Water Standards and Health Advisories.
Office of Water, Washington, D.C. EPA 822-S-12-001. April.
4 - The screening value is for trivalent chromium.

Definitions:

DRO = Diesel Range Organics
GRO = Gasoline Range Organics
MTBE = Methyl tert-butyl ether
N = Noncarcinogen
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:

J = Estimated value.
U = Non-detected value.

TABLE 5-5

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION			MW03-15S	MW03-15I	MW03-16S
SAMPLE ID			MW03-15S-NWG-100114	MW03-15I-NWG-092914	MW03-16S-NWG-100614
SAMPLE DATE	EPA VISL		20141001	20140929	20141006
SACODE	(ug/L)		NORMAL	NORMAL	NORMAL
TOP DEPTH (FEET)			13	45	11.5
BOTTOM DEPTH (FEET)			23	55	21.5
VOLATILES (UG/L)					
1,1,2,2-TETRACHLOROETHANE	3.2	C	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	5.2	C	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	NA		0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	NA		1 U	1 U	1 U
TRICHLOROETHENE	1.2	C	**1.1**	0.5 U	**1.6**
VINYL CHLORIDE	0.15	C	0.5 U	0.5 U	0.5 U
METALS (UG/L)					
ALUMINUM	NA		**23.3**	**88.2**	17.8 U
ANTIMONY	NA		0.2 U	**0.53 J**	0.2 U
BARIUM	NA		5.2 U	**18**	**8.6 J**
CADMIUM	NA		**0.7 J**	**0.29 J**	0.15 U
CALCIUM	NA		**3490**	**8290**	**7140**
CHROMIUM	NA		**0.98 J**	**1.4 J**	**0.97 J**
COBALT	NA		0.64 U	**16.7**	0.034 U
COPPER	NA		0.46 U	0.68 U	0.38 U
IRON	NA		20 U	**6030 J**	20 U
MAGNESIUM	NA		**1390**	**2810**	**1010**
MANGANESE	NA		**21.7**	**134**	**10.6**
NICKEL	NA		**3.9**	**25.3**	**0.95 J**
POTASSIUM	NA		**772**	**1530**	**1200**
SODIUM	NA		**6830**	**22300**	**6690**
VANADIUM	NA		**0.84 J**	1 U	**0.84 J**
ZINC	NA		**2.5**	**48**	**1.2 J**
DISSOLVED METALS (UG/L)					
ALUMINUM	NA		20.7 U	9.6 U	15.2 U
ANTIMONY	NA		0.2 U	0.2 U	0.2 U
BARIUM	NA		5.4 U	**18.7**	**8.2 J**
CADMIUM	NA		0.15 U	0.15 U	0.15 U
CALCIUM	NA		**3610**	**8380**	**6790**
CHROMIUM	NA		**1.1 J**	**1 J**	**0.88 J**
COBALT	NA		0.66 U	**17.2**	0.051 U
COPPER	NA		1 U	1.1 U	**1.2 J**
IRON	NA		20 U	**6350 J**	20 U
LEAD	NA		0.15 U	0.15 U	0.073 U

TABLE 5-5

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	**EPA VISL**	**MW03-15S** **MW03-15S-NWG-100114** **20141001**	**MW03-15I** **MW03-15I-NWG-092914** **20140929**	**MW03-16S** **MW03-16S-NWG-100614** **20141006**
MAGNESIUM	NA	**1430**	**2830**	**969**
MANGANESE	NA	**22.4**	**147**	**10.1**
NICKEL	NA	**4.6**	**25.5**	**1.8**
POTASSIUM	NA	**808**	**1540**	**1160**
SODIUM	NA	**7060**	**22200**	**6430**
VANADIUM	NA	1 U	1 U	**1 J**
ZINC	NA	**2.4**	**48.8**	**2**
PETROLEUM HYDROCARBONS (MG/L)				
TPH-DRO (C9-C40)	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	20 U	20 U

TABLE 5-5

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-16I		MW03-17S
SAMPLE ID		MW03-16I-NWG-102814	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014
SAMPLE DATE	EPA VISL	20141028	20141028	20140930
SACODE	(ug/L)	ORIG	DUP	ORIG
TOP DEPTH (FEET)		45	45	11.5
BOTTOM DEPTH (FEET)		55	55	21.5
VOLATILES (UG/L)				
1,1,2,2-TETRACHLOROETHANE	3.2	**65**	NA	0.5 U
1,1,2-TRICHLOROETHANE	5.2	**5.6**	NA	1 U
CIS-1,2-DICHLOROETHENE	NA	**100**	NA	**1.3**
TRANS-1,2-DICHLOROETHENE	NA	**44**	NA	1 U
TRICHLOROETHENE	1.2	**170**	NA	**3.3**
VINYL CHLORIDE	0.15	**2.4**	NA	0.5 U
METALS (UG/L)				
ALUMINUM	NA	**26.6**	NA	**37.4**
ANTIMONY	NA	**0.35 J**	NA	0.2 U
BARIUM	NA	**15.5**	NA	**15.5**
CADMIUM	NA	0.15 U	NA	**0.14 J**
CALCIUM	NA	**9590**	NA	**6780**
CHROMIUM	NA	0.25 U	NA	**0.81 J**
COBALT	NA	**7.2**	NA	**7.3**
COPPER	NA	**0.29 J**	NA	**1.5 J**
IRON	NA	**10800**	NA	51.9 U
MAGNESIUM	NA	**3700**	NA	**2240**
MANGANESE	NA	**373**	NA	**110**
NICKEL	NA	**16.8**	NA	**10.5**
POTASSIUM	NA	**1670**	NA	**1480**
SODIUM	NA	**16300**	NA	**11300**
VANADIUM	NA	1 U	NA	1 U
ZINC	NA	**60.5 J**	NA	**11.2**
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	6.8 U	NA	**33.6**
ANTIMONY	NA	**0.32 J**	NA	0.2 U
BARIUM	NA	**15.6**	NA	**15.5**
CADMIUM	NA	0.15 U	NA	**0.92 J**
CALCIUM	NA	**9880**	NA	**6820**
CHROMIUM	NA	0.25 U	NA	**0.84 J**
COBALT	NA	**7.4**	NA	**7.2**
COPPER	NA	**0.85 J**	NA	**2.5**
IRON	NA	**10900**	NA	45.1 U
LEAD	NA	0.19 U	NA	0.078 U

TABLE 5-5

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-16I		MW03-17S
SAMPLE ID		MW03-16I-NWG-102814	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014
SAMPLE DATE	**EPA VISL**	**20141028**	**20141028**	**20140930**
MAGNESIUM	NA	**3770**	NA	**2220**
MANGANESE	NA	**377**	NA	**106**
NICKEL	NA	**17.2**	NA	**10.7**
POTASSIUM	NA	**1750**	NA	**1510**
SODIUM	NA	**16800**	NA	**11400**
VANADIUM	NA	1 U	NA	1 U
ZINC	NA	**85.7 J**	NA	**10.6**
PETROLEUM HYDROCARBONS (MG/L)			NA	
TPH-DRO (C9-C40)	NA	0.05 U	NA	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	**130 R**	NA	20 U

TABLE 5-5

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-17S	MW03-17I
SAMPLE ID		MW03-17S-NWG-093014-D	MW03-17I-NWG-100214
SAMPLE DATE	EPA VISL	20140930	20141002
SACODE	(ug/L)	DUP	NORMAL
TOP DEPTH (FEET)		11.5	45
BOTTOM DEPTH (FEET)		21.5	55
VOLATILES (UG/L)			
1,1,2,2-TETRACHLOROETHANE	3.2	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	5.2	1 U	1 U
CIS-1,2-DICHLOROETHENE	NA	**1.3**	0.5 U
TRANS-1,2-DICHLOROETHENE	NA	1 U	1 U
TRICHLOROETHENE	1.2	**3.7**	**4.9**
VINYL CHLORIDE	0.15	0.5 U	0.5 U
METALS (UG/L)			
ALUMINUM	NA	**37.6**	**21**
ANTIMONY	NA	**0.21 J**	**0.22 J**
BARIUM	NA	**15.6**	**10.8**
CADMIUM	NA	**0.12 J**	0.15 U
CALCIUM	NA	**6660**	**7390**
CHROMIUM	NA	**1 J**	**1.2 J**
COBALT	NA	**7.3**	**11.4**
COPPER	NA	**1.9 J**	0.38 U
IRON	NA	52.5 U	**1500**
MAGNESIUM	NA	**2240**	**2380**
MANGANESE	NA	**110**	**40.3**
NICKEL	NA	**10.1**	**19.7**
POTASSIUM	NA	**1490**	**1510**
SODIUM	NA	**11400**	**18600**
VANADIUM	NA	**0.77 J**	**0.63 J**
ZINC	NA	**10.2**	**22.1**
DISSOLVED METALS (UG/L)			
ALUMINUM	NA	**35**	18.3 U
ANTIMONY	NA	**0.21 J**	0.2 U
BARIUM	NA	**15.8**	**10.9**
CADMIUM	NA	**0.13 J**	0.15 U
CALCIUM	NA	**6840**	**7520**
CHROMIUM	NA	**0.94 J**	**0.83 J**
COBALT	NA	**7.4**	**11.4**
COPPER	NA	**3.1**	**0.74 J**
IRON	NA	46.7 U	**1490**
LEAD	NA	0.075 U	0.075 U

TABLE 5-5

SUMMARY OF DETECTIONS - DRUM AREA WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-17S	MW03-17I
SAMPLE ID		MW03-17S-NWG-093014-D	MW03-17I-NWG-100214
SAMPLE DATE	EPA VISL	20140930	20141002
MAGNESIUM	NA	**2280**	**2420**
MANGANESE	NA	**107**	**40**
NICKEL	NA	**11**	**20.3**
POTASSIUM	NA	**1550**	**1560**
SODIUM	NA	**11700**	**19000**
VANADIUM	NA	**1 J**	1 U
ZINC	NA	**14.2**	**21.1**
PETROLEUM HYDROCARBONS (MG/L)			
TPH-DRO (C9-C40)	NA	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)			
TPH-GRO (MTBE THROUGH NAPHTHALENE)	NA	20 U	20 U

Detected concentrations are presented in bold font. Concentrations exceeding the USEPA VISL are shaded yellow.

Footnotes:

1 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 1 for noncarcinogens (N) and an attenuation factor of 0.001.

Definitions:

C = Carcinogen
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
MTBE = Methyl tert-butyl ether
NA = Not applicable/not available
TPH = Total Petroleum Hydrocarbons

Qualifiers:

J = Estimated value.
R = Rejected result.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE 5-6

SUMMARY OF DESCRIPTIVE STATISTICS - DRUM AREA WELLS
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	Minimum Detection[1]	Maximum Detection[1]	Sample With Maximum Detection	Frequency of Detection[2]	Range of Non-detects	Average of Positive Results[2]	Average of All Results[2]	Standard Deviation of All Results[2]	RIDEM GA Objective[3]	# Exceeding RIDEM GA Objective[2]	RIDEM GB Objective[3]	# Exceeding RIDEM GB Objective[2]	EPA Tap Water RSL[4]		# Exceeding EPA Tap Water RSL[2]	EPA MCL[5]	# Exceeding EPA MCL[2]	EPA VISL[6]	# Exceeding EPA VISL[2]
VOLATILES (UG/L)																			
1,1,2,2-TETRACHLOROETHANE	65	65	MW03-16I-NWG-102814	1/6	0.5 - 0.5	11.0	65.0	26	NA	NA	NA	NA	**0.076**	**C**	1	NA	NA	**3.2**	**C** 1
1,1,2-TRICHLOROETHANE	5.6	5.6	MW03-16I-NWG-102814	1/6	1 - 1	1	5.6	2.1	**5**	1	NA	NA	**0.28**	**C**	1	**5**	1	**5.2**	**C** 1
CIS-1,2-DICHLOROETHENE	1.3	100	MW03-16I-NWG-102814	2/6	0.5 - 0.5	17.1	50.7	41	**70**	1	**2400**	0	**36**	**N**	1	**70**	1	NA	NA
TRANS-1,2-DICHLOROETHENE	44	44	MW03-16I-NWG-102814	1/6	1 - 1	7.8	44.0	18	100	0	2800	0	360	N	0	100	0	NA	NA
TRICHLOROETHENE	1.1	170	MW03-16I-NWG-102814	5/6	0.5 - 0.5	30.2	36.2	68	**5**	1	**540**	0	**0.49**	**C**	5	**5**	1	**1.2**	**C** 4
VINYL CHLORIDE	2.4	2.4	MW03-16I-NWG-102814	1/6	0.5 - 0.5	0.6	2.4	1	**2**	1	**2**	1	**0.019**	**C**	1	**2**	1	**0.15**	**C** 1
METALS (UG/L)																			
ALUMINUM	21	88.2	MW03-15I-NWG-092914	5/6	17.8 - 17.8	34.3	39.3	28	NA	NA	NA	NA	20000	N	0	NA	NA	NA	NA
ANTIMONY	0.21 J	0.53 J	MW03-15I-NWG-092914	4/6	0.2 - 0.2	0.2	0.3	0	6	0	NA	NA	7.8	N	0	NA	NA	NA	NA
BARIUM	8.6 J	18	MW03-15I-NWG-092914	5/6	5.2 - 5.2	11.8	13.7	6	2000	0	NA	NA	3800	N	0	2000	0	NA	NA
CADMIUM	0.12 J	0.7 J	MW03-15S-NWG-100114	3/6	0.15 - 0.15	0.2	0.4	0	5	0	NA	NA	9.2	N	0	5	0	NA	NA
CALCIUM	3490	9590	MW03-16I-NWG-102814	6/6	-	7103.3	7103.3	2043	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
CHROMIUM	0.81 J	1.4 J	MW03-15I-NWG-092914	5/6	0.25 - 0.25	0.9	1.1	0	100	0	NA	NA	22000	C[7]	0	100	0	NA	NA
COBALT	7.2	16.7	MW03-15I-NWG-092914	4/6	0.034 - 0.64	7.2	10.7	6	NA	NA	NA	NA	**6**	**N**	4	NA	NA	NA	NA
COPPER	0.29 J	1.9 J	MW03-17S-NWG-093014-D	2/6	0.38 - 0.68	0.5	1.0	1	NA	NA	NA	NA	800	N	0	1300	0	NA	NA
IRON	1500	10800	MW03-16I-NWG-102814	3/6	20 - 52.5	3062.7	6110	4449	NA	NA	NA	NA	14000	N	0	NA	NA	NA	NA
MAGNESIUM	1010	3700	MW03-16I-NWG-102814	6/6	-	2255	2255	971	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
MANGANESE	10.6	373	MW03-16I-NWG-102814	6/6	-	114.9	114.9	136	NA	NA	NA	NA	430	N	0	NA	NA	NA	NA
NICKEL	0.95 J	25.3	MW03-15I-NWG-092914	6/6	-	12.8	12.8	9	100	0	NA	NA	390	N	0	NA	NA	NA	NA
POTASSIUM	772	1670	MW03-16I-NWG-102814	6/6	-	1361.2	1361.2	327	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
SODIUM	6690	22300	MW03-15I-NWG-092914	6/6	-	13678.3	13678.3	6428	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
VANADIUM	0.63 J	0.84 J	MW03-15S-NWG-100114, MW03-16S-NWG-100614	4/6	1 - 1	0.7	0.8	0	NA	NA	NA	NA	86	N	0	NA	NA	NA	NA
ZINC	1.2 J	60.5 J	MW03-16I-NWG-102814	6/6	-	24.2	24.2	25	NA	NA	NA	NA	6000	N	0	NA	NA	NA	NA
DISSOLVED METALS (UG/L)																			
ALUMINUM	33.6	35	MW03-17S-NWG-093014-D	1/6	6.8 - 20.7	11.6	34.3	11	NA	NA	NA	NA	20000	N	0	NA	NA	NA	NA
ANTIMONY	0.21 J	0.32 J	MW03-16I-NWG-102814	2/6	0.2 - 0.2	0.1	0.2	0	6	0	NA	NA	7.8	N	0	NA	NA	NA	NA
BARIUM	8.2 J	18.7	MW03-15I-NWG-092914	5/6	5.4 - 5.4	12.0	13.8	6	2000	0	NA	NA	3800	N	0	2000	0	NA	NA
CADMIUM	0.13 J	0.92 J	MW03-17S-NWG-093014	1/6	0.15 - 0.15	0.2	0.5	0	5	0	NA	NA	9.2	N	0	5	0	NA	NA
CALCIUM	3610	9880	MW03-16I-NWG-102814	6/6	-	7168.3	7168.3	2091	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
CHROMIUM	0.83 J	1.1 J	MW03-15S-NWG-100114	5/6	0.25 - 0.25	0.8	0.9	0	100	0	NA	NA	22000	C[7]	0	100	0	NA	NA
COBALT	7.2	17.2	MW03-15I-NWG-092914	4/6	0.051 - 0.66	7.3	10.8	7	NA	NA	NA	NA	**6**	**N**	4	NA	NA	NA	NA
COPPER	0.74 J	3.1	MW03-17S-NWG-093014-D	4/6	1 - 1.1	1.1	1.4	1	NA	NA	NA	NA	800	N	0	1300	0	NA	NA
IRON	1490	10900	MW03-16I-NWG-102814	3/6	20 - 46.7	3130.5	6246.7	4529	NA	NA	NA	NA	14000	N	0	NA	NA	NA	NA
MAGNESIUM	969	3770	MW03-16I-NWG-102814	6/6	-	2278.2	2278.2	998	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
MANGANESE	10.1	377	MW03-16I-NWG-102814	6/6	-	117.2	117.2	138	NA	NA	NA	NA	430	N	0	NA	NA	NA	NA
NICKEL	1.8	25.5	MW03-15I-NWG-092914	6/6	-	13.4	13.4	9	100	0	NA	NA	390	N	0	NA	NA	NA	NA
POTASSIUM	808	1750	MW03-16I-NWG-102814	6/6	-	1391.3	1391.3	344	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
SODIUM	6430	22200	MW03-15I-NWG-092914	6/6	-	13840	13840	6502	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
VANADIUM	1 J	1 J	MW03-16S-NWG-100614, MW03-17S-NWG-093014-D	2/6	1 - 1	0.6	0.9	0	NA	NA	NA	NA	86	N	0	NA	NA	NA	NA
ZINC	2	85.7 J	MW03-16I-NWG-102814	6/6	-	28.7	28.7	33	NA	NA	NA	NA	6000	N	0	NA	NA	NA	NA

Footnotes:

1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.

2 - Sample and duplicate are considered as one sample when determining frequency of detection, average, standard deviation, and number of exceedances.

3 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.

4 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 1.

5 - Federal Maximum Contaminant Levels (MCLs), 2012 Edition of the Drinking Water Standards and Health Advisories.
Office of Water, Washington, D.C. EPA 822-S-12-001. April.

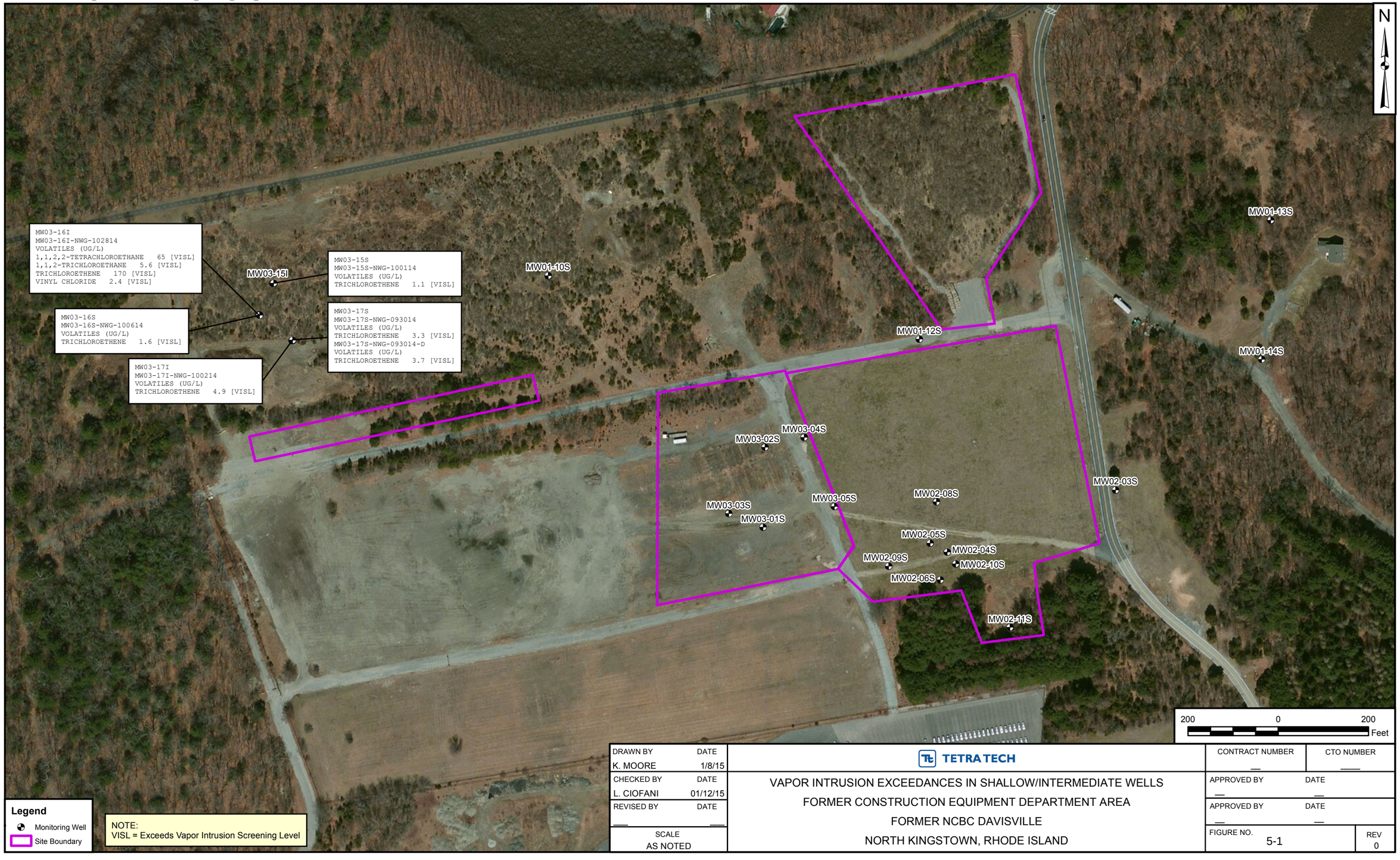
6 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 1 for noncarcinogens (N) and an attenuation factor of 0.001.

7 - The screening value is for trivalent chromium.

Definitions:

C = Carcinogen
J = Estimated Value
N = Noncarcinogen

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_GW-VISL_TAGS_2014.MXD 01/12/15 KM



DRAWN BY: K. MOORE	DATE: 1/8/15	TETRA TECH	CONTRACT NUMBER: — / CTO NUMBER: —
CHECKED BY: L. CIOFANI	DATE: 01/12/15	VAPOR INTRUSION EXCEEDANCES IN SHALLOW/INTERMEDIATE WELLS FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA FORMER NCBC DAVISVILLE NORTH KINGSTOWN, RHODE ISLAND	APPROVED BY: — / DATE: —
REVISED BY: —	DATE: —		APPROVED BY: — / DATE: —
SCALE: AS NOTED			FIGURE NO.: 5-1 / REV: 0

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ATTACHMENT A

RISK ASSESSMENT FILES

ATTACHMENT A-1

CHARACTERIZATION OF GROUNDWATER AT SITES 02/03 (IN SUPPORT OF THE EVALUATION OF LEACHING POTENTIAL)

ATTACHMENT A-1

CHARACTERIZATION OF GROUNDWATER AT SITES 02/03 (IN SUPPORT OF THE EVALUATION OF LEACHING POTENTIAL) CONSTRUCTION EQUIPMENT DEPARTMENT AREA FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

1.0 Introduction

This human health risk assessment (HHRA) for groundwater at the Construction Equipment Department (CED) Area Sites 02 and 03 evaluates risks to potential human receptors exposed through direct contact (i.e., incidental ingestion, dermal contact, and inhalation) with groundwater under current and hypothetical future land use scenarios. The CED Area is located within Former NCBC Davisville in North Kingstown, Rhode Island (Figure 1-1 of the main report). Sites 02/03 are located in the southeastern corner of the CED Area (Figure 1-2 of the main report). The *Human Health Risk Evaluation for Construction Equipment Department, Former Naval Construction Battalion Center Davisville, North Kingston, Rhode Island* (Tetra Tech, 2014a) previously evaluated direct contact risks for receptors exposed to chemicals in soils at Sites 02/03 and did not identify unacceptable risks for this pathway; however, possible soil contaminants of concern (COCs) for groundwater protection (TPH, naphthalene, and select metals) were identified. Specifically, the report concluded that there is limited evidence of the potential for contaminant migration from soil to groundwater at the CED Area based on available historical shallow groundwater data. Because the historical data were relatively old and incomplete for some COCs, additional data were collected from select upgradient and CED Area wells to better evaluate the potential for leachability of COCs from soil to groundwater. This document provides an update of the analysis of the potential for chemical migration from soil to groundwater presented in the 2014 CED Area soils risk assessment (Section 5) along with an evaluation of direct contact with groundwater from Sites 02/03. Groundwater sampling locations are displayed on Figure 3-1 of the main report.

United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) or calculated risk-based concentrations (RBCs) incorporating site-specific exposure assumptions were used to develop risk estimates based on the risk-ratio approach demonstrated in Section 5. The risk-ratio approach is a simple, efficient approach that allows for the quick of assessment of a multiple data sets or scenarios.

All HHRAs consist of four components: selection of chemicals of potential concern (COPCs), exposure assessment, toxicity assessment, and risk characterization. Sections 2 through 5 contain detailed discussions of the four components of this HHRA.

2.0 Selection of COPCs

COPC selection was performed for shallow groundwater, and COPC selection is presented in Table A-1.1. Screening criteria for groundwater were based on USEPA RSLs for tap water (USEPA, 2015), USEPA Maximum Contaminant Levels (MCLs) (USEPA, 2012), and RIDEM GA and GB Groundwater Objectives (RIDEM, 2011). COPCs were selected based on the lowest screening level derived from these criteria. The screening concentrations based on the RSLs correspond to a systemic hazard quotient (HQ) of 0.1 for noncarcinogens or an incremental lifetime cancer risk (ILCR) of $1x10^{-6}$ for carcinogens. The noncarcinogenic RSLs represent an HQ of 0.1 to account for the potential cumulative effects of several chemicals affecting the same target organ or producing the same adverse noncarcinogenic effect.

Screening criteria for trivalent chromium were used to evaluate total chromium data in the HHRA because historical site activities for the CED Area do not suggest that hexavalent chromium would be a significant contaminant at any sites in the investigation area.

In the 2014 risk evaluation (Tetra Tech, 2014a), soil results for Sites 02 and 03 were compared to generic federal risk-based soil screening levels (SSLs) for groundwater protection designed to be protective of groundwater at most sites (as published in the USEPA RSL table). These groundwater protection SSLs allow an initial qualitative evaluation of the potential for chemical migration from soil to groundwater. Chemicals with concentrations exceeding the SSLs may potentially migrate from the soil to groundwater in sufficient quantities to pose groundwater quality problems. The COPCs selected from this screening comparison were evaluated qualitatively to identify potential COPCs for migration to groundwater. Based on this qualitative evaluation, TPH, naphthalene, and select metals were identified as possible soil COCs for groundwater protection. Section 5 presents an updated evaluation for migration to groundwater that incorporates the 2014 groundwater results.

No formal site-specific background data sets are available for the groundwater samples from Sites 02 and 03. For groundwater at Sites 02/03, chemical concentrations detected in upgradient wells (MW01-10S, MW01-13S, and MW01-14S) were considered for use in eliminating chemicals from COPC selection. However, because a formal background data set has not been approved by USEPA and RIDEM, if any chemical was eliminated from COPC selection due to upgradient concentrations, groundwater risks were calculated both 1) excluding chemicals detected at concentrations greater than screening levels but less

than upgradient concentrations, and 2) including all chemicals detected at concentrations greater than screening levels. The uncertainty associated with the lack of a formal background data set is further discussed in Section 6.

The following chemicals were selected as COPCs for direct contact with shallow groundwater (Table A-1.1):

- **Direct Contact with Shallow Groundwater:**
  - Semivolatiles: naphthalene
  - Metals: cobalt and manganese

The COPCs for direct contact are further evaluated in the risk ratio tables presented in Section 5. Groundwater results were also screened against criteria for vapor intrusion as part of a separate vapor intrusion evaluation (Attachment A-2).

3.0 Exposure Assessment

Current and future anticipated land use at the sites/study areas is industrial/commercial. There are no plans for the future residential development of the sites/study areas; residential receptors were included primarily to support risk-management decisions. Receptors evaluated in this HHRA are current and future construction workers and hypothetical future residents (child, adult, and lifelong). Future industrial workers and current and future recreational users are potential receptors for the sites but are not expected to have direct contact with groundwater and therefore are not further discussed.

Construction workers could potentially be exposed to groundwater if present in trenches during excavation activities via incidental ingestion, dermal contact, or inhalation of VOCs. In addition, the hypothetical future resident could potentially be exposed to contaminants in groundwater via ingestion, dermal contact, and inhalation (i.e., showering/bathing), and indoor air (vapor intrusion) (see Attachment A-2 for vapor intrusion evaluation). (Industrial workers could also potentially be exposed via inhalation to VOCs migrating from groundwater into indoor air (vapor intrusion), but that exposure pathway is evaluated in Attachment A-2.)

Residential exposures were evaluated using current USEPA RSLs (USEPA, 2015). The methodology USEPA used to calculate the RSLs is based on default USEPA exposure assumptions and presented in the User Guide accompanying the January 2015 RSL table. Exposure assumptions for residential receptors are summarized in Attachment A-4. For residents, carcinogenic RSLs represent lifelong (child

+ adult) exposures and non-carcinogenic RSLs represent child exposures to evaluate the most conservative receptors.

To evaluate construction worker exposures, RBCs representing a 1E-06 cancer risk level and an HQ of 1 (i.e., the no-adverse-effect concentration) were developed for carcinogens and non-carcinogens, respectively. RBCs for construction worker direct contact (incidental ingestion, dermal contact, and inhalation) exposures with soil were calculated using methodology similar to that used by USEPA to develop the RSLs. The methodology and exposure assumptions used to calculate RBCs for construction workers are presented in Attachment A-5. Exposure assumptions for groundwater are based on current USEPA guidance (e.g., USEPA, 2014). Exposure assumptions for construction workers are summarized in Attachment A-4. RBCs were calculated for construction workers exposed to soil and construction workers exposed to groundwater (Attachment A-5).

The exposure point concentration (EPC) is defined as the concentration to which a receptor is exposed. In this HHRA, the 95-percent upper confidence limit (95% UCL) on the arithmetic mean was evaluated as the EPC, when appropriate. The maximum detected concentration was used as the EPC if there were an insufficient number of positive detections (i.e., less than four), as was the case for naphthalene and cobalt in groundwater. Groundwater data (collected between 21 and 28 feet bgs) for Sites 02 and 03 were from the shallow zone and were evaluated as a single data set.

EPCs were calculated following USEPA's Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002) and using USEPA's ProUCL software Version 5.0.00 (USEPA, 2013). If ProUCL was unable to calculate a 95% UCL, then the maximum detected concentration was used as the EPC. Non-detected values were evaluated in accordance with the ProUCL guidance. EPCs evaluated in this HHRA are presented in the risk-ratio tables described in Section 5. ProUCL outputs are included in at the end of this attachment.

4.0 Toxicity Assessment

The toxicity values used to calculate the RBCs are identified in Tables A-5.1 through A-5.4 in Attachment A-5 and are those values published in the January 2015 USEPA RSL table (USEPA, 2015).

5.0 Results of the Risk Characterization

Risk estimates were calculated using a simple risk-ratio methodology and the RBCs. The RBCs for receptor exposures to groundwater represent, in effect, an HQ of 1 (i.e., the no-adverse-effect concentration) for non-carcinogens and a $1x10^{-6}$ target cancer risk level for carcinogens. Cancer and

non-cancer risk estimates were developed using the risk-ratio technique demonstrated in the following formula:

$$\frac{\text{RBC for Receptor}}{\text{EPC for Chemical}} = \frac{\text{Target HQ of 1 or Target Cancer Risk Estimate of 1E-06}}{\text{HQ or Cancer Risk Estimate}}$$

Solving this equation for HQ or cancer risk yields:

$$\text{HQ or Cancer Risk Estimate} = \frac{\text{EPC for Chemical x Target HQ of 1 or Target Cancer Risk Estimate of 1E-06}}{\text{RBC for Receptor}}$$

The following example calculations are provided for residential exposure to the maximum concentration of naphthalene in the shallow groundwater data set (see Table A-1.3):

$$\text{Cancer risk estimate} = \frac{2.8 \text{ x } 1E-06}{0.17} = 1.6E-05$$

$$HQ = \frac{2.8 \text{ x } 1}{6.1} = 0.46$$

A hazard index (HI) was generated by summing the individual HQs for all chemicals. The HI is not a mathematical prediction of the severity of toxic effects, and therefore is not a true "risk"; it is simply a numerical indicator of the possibility of the occurrence of noncarcinogenic (threshold) effects. Calculated cancer risks were interpreted primarily using the USEPA's "target risk range" ($1x10^{-6}$ to $1x10^{-4}$) and the State of Rhode Island cancer risk benchmark of $1x10^{-5}$ (as a point of reference), and HIs were interpreted using a value of 1 (i.e., the no-adverse-effect level). If an HI exceeds unity, a segregation of target organ effects associated with exposure to the chemicals evaluated is typically performed. Only those chemicals that affect the same target organ(s) or exhibit similar critical effect(s) are regarded as truly additive. Consequently, it may be possible for a cumulative HI to exceed 1, but no adverse health effects are anticipated if the chemicals evaluated do not affect the same target organ or exhibit the same critical effect. The results of risk-ratio evaluations are presented in Tables A-1.2 and A-1.3. A summary of the results of the risk-ratio evaluations is provided below.

Summary of Cancer and Non-Cancer Risk Estimates and Risk Contributors[1] for Receptor Direct Contact with Groundwater

Table Number	Data Set Evaluated	Receptor	Risk Estimates[2][3]	
			Cancer Risk Estimate	Hazard Index
A-1.2	Shallow groundwater	Construction Worker	$5x10^{-10}$	0.7
A-1.3		Hypothetical Resident	*$2x10^{-5}$ (naphthalene)*	1

1 A noncarcinogenic risk contributor is a chemical that contributes substantially (i.e., greater than an HQ of 0.1) to a target organ-specific HI that exceeds 1. A carcinogenic risk contributor is a chemical with a calculated cancer risk estimate exceeding $1x10^{-6}$ when the medium-specific total cancer risk for the receptor exceeds $1x10^{-5}$.

2 Italicized carcinogenic risk estimates exceed the State of Rhode Island cancer risk limit of $1x10^{-5}$. Bolded carcinogenic risk estimates exceed USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$. Bolded HIs exceed the target level of 1. A chemical name presented in parentheses indicates the primary chemical driving risk.

3 The cancer risk and HI presented for the hypothetical resident are for the lifelong resident and child resident (i.e., the most conservative receptors), respectively.

As shown in the summary table, HIs for construction workers and hypothetical residents exposed to shallow groundwater are less than the target level of 1. Therefore, no adverse noncarcinogenic effects are expected for exposures to subsurface soil or shallow groundwater.

Soil risks and HIs for Sites 02/03 were estimated in the January 2014 Human Health Risk Evaluation for Construction Equipment Department (Tetra Tech, 2014a). HIs for cumulative risks (soil and groundwater) are presented in the following table:

Medium	Construction Worker HI	Resident HI
Site 02 Surface Soil (Tetra Tech, 2014a)	0.5	0.9
Site 02 Subsurface Soil (Tetra Tech, 2014a)	2	3[1]
Site 03 Surface Soil (Tetra Tech, 2014a)	0.5	1
Site 03 Subsurface Soil (Tetra Tech, 2014a)	0.5	0.9
Sites 02/03 Shallow Groundwater – Direct Contact	0.7	1
Sites 02/03 Shallow Groundwater – Vapor Intrusion (Attachment A-2)	NA	0.7
Total: Site 02 Surface Soil + Groundwater	1	3[1]
Total: Site 02 Subsurface Soil + Groundwater	3	5[1]
Total: Site 03 Surface Soil + Groundwater	1	3[1]
Total: Site 03 Subsurface Soil + Groundwater	1	3[1]

1 – Target organ HIs do not exceed 1.

For the construction worker, HIs do not exceed 1 other than for the Site 02 subsurface soil HI and the Site 02 subsurface soil and groundwater total HI, and the 2014 risk evaluation already noted considerable uncertainty for the Site 02 subsurface soil HI exceeding 1 primarily due to manganese toxicity criteria used. HIs would not exceed 1 on a target organ basis if more recent toxicity criteria were used for manganese (Tetra Tech, 2014). For the resident, total HIs for each soil data set and groundwater exceed 1, but target organ HIs were less than or equal to 1.

Cancer risk estimates for shallow groundwater evaluations are less than or within the USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$, and the cancer risk estimate for construction workers exposed to shallow groundwater is less than the State of Rhode Island cancer risk benchmark of $1x10^{-5}$. The cancer risk estimate for shallow groundwater evaluation is greater than the State of Rhode Island cancer risk benchmark of $1x10^{-5}$. Naphthalene, detected in only 1 of 14 groundwater samples, is the sole risk contributor for cancer risks. It should be noted that the maximum concentrations of naphthalene was used as the EPC, which results in added uncertainty. Section 5 discusses uncertainty associated with using the maximum concentration as the EPC.

Soil risks and HIs for Sites 02/03 were estimated in the January 2014 Human Health Risk Evaluation for Construction Equipment Department (Tetra Tech, 2014a). ILCRs for cumulative risks (soil and groundwater) are presented in the following table:

Medium	**Construction Worker ILCR**	**Resident ILCR**
Site 02 Surface Soil (Tetra Tech, 2014a)	$8x10^{-8}$	$4x10^{-6}$
Site 02 Subsurface Soil (Tetra Tech, 2014a)	$3x10^{-7}$	$6x10^{-8}$
Site 03 Surface Soil (Tetra Tech, 2014a)	$8x10^{-8}$	$2x10^{-6}$
Site 03 Subsurface Soil (Tetra Tech, 2014a)	$9x10^{-8}$	$2x10^{-8}$
Sites 02/03 Shallow Groundwater – Direct Contact	$5x10^{-10}$	$2x10^{-5}$
Sites 02/03 Shallow Groundwater – Vapor Intrusion (Attachment A-2)	NA	$3x10^{-6}$
Total: Site 02 Surface Soil + Groundwater	$8x10^{-8}$	$2x10^{-5}$
Total: Site 02 Subsurface Soil + Groundwater	$3x10^{-7}$	$2x10^{-5}$
Total: Site 03 Surface Soil + Groundwater	$8x10^{-8}$	$2x10^{-5}$
Total: Site 03 Subsurface Soil + Groundwater	$9x10^{-8}$	$2x10^{-5}$

Total ILCRs for construction worker exposures to soil and shallow groundwater do not exceed the State of Rhode Island target risk level of $1x10^{-5}$ or USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$.

Total ILCRs for residential exposures exceed $1x10^{-5}$ due to exposures with naphthalene in groundwater via direct contact; USEPA's target risk range ($1x10^{-6}$ to $1x10^{-4}$) is not exceeded.

As noted in Section 2, TPH, naphthalene, and select metals were selected as possible COCs for chemical migration from soil to groundwater based on the 2014 risk evaluation. Both TPH components, diesel range organics (DRO) and gasoline range organics (GRO), were detected in 1 of 14 groundwater samples collected from Sites 02/03 in 2014. Positive TPH and naphthalene detections were only reported for the groundwater samples collected from MW02-10S. No groundwater screening criteria or historical groundwater data for MW02-10S are available for TPH DRO and GRO. The detected concentration of naphthalene (2.8 ug/L) exceeds the USEPA tap water RSL (0.17 ug/L based on an ILCR of $1x10^{-6}$) but is less than the RIDEM GA groundwater objective (100 ug/L). The detection of naphthalene in the September/October 2014 samples is less than the most recent historical detection of naphthalene in this well (32.4 ug/L, detected in a sample from 2007). Additionally, historical concentrations of the sum of the fuel-related compounds benzene, toluene, ethylbenzene, and xylenes (BTEX) were approximately 2,000 ug/L in original/duplicate samples collected in 1995, less than 100 ug/L in the sample from 2007, and non-detected in MW02-10S (and all other wells at Sites 02/03) in the 2014 data set. The presence of fuel-related compounds in MW02-10S at levels significantly less than historical concentrations may be evidence of degradation over time and suggests that significant residual soil contamination is no longer present.

As stated in the Sampling and Analysis Plan (SAP) (Tetra Tech, 2014b) associated with the September/October sampling event, some metals (e.g., cobalt and manganese) exceeded SSLs for migration to groundwater. Although metals were not anticipated to be a concern for migration to groundwater based on the qualitative analysis in the CED Area risk evaluation (Tetra Tech, 2014a), this conclusion is re-evaluated with the current groundwater data set because historical groundwater metals results were not available for Sites 02/03. Based on the 2014 data set, only cobalt and manganese are selected as COPCs for groundwater. Cobalt was detected in only 2 of 14 samples, and manganese was detected in 14 of 14 samples. The maximum concentrations of cobalt (0.93 ug/L) and manganese (357 ug/L) do not exceed their tap water RSLs based on an HQ of 1 (6 ug/L and 430 ug/L, respectively). In addition, uncertainty is associated with the toxicity criteria used to derive the RSL for cobalt (see Section 6). Based on these considerations, the 2014 groundwater data do not indicate that groundwater has been negatively impacted by concentrations of metals in soil from Sites 02/03.

6.0 Uncertainty Analysis

The following sources of uncertainty should be considered when interpreting the results of the risk evaluations:

- No formal site-specific background data sets are available for the groundwater samples from the CED Area Drum Removal Area. For groundwater, chemical concentrations detected in upgradient wells (MW01-10S, MW01-13S, and MW01-14S) were considered for use in eliminating chemicals as COPCs. However, chemicals detected at concentrations greater than screening levels in groundwater were also detected at concentrations greater than background or upgradient concentrations. Therefore, the results of COPC selection are not affected by whether available background/upgradient concentrations are used to eliminate chemicals as COPCs. For groundwater, upgradient concentrations were collected to provide background concentrations particularly for metals in groundwater. Cobalt and manganese were the metals selected as a COPC in groundwater. Cobalt and manganese both contributed to HQs only (no cancer-based toxicity criteria are available for these metals for the pathways evaluated), and HQs did not exceed the target level of 1. Therefore, the lack of a formal background data set does not add considerable uncertainty to the HHRA conclusions.

- Maximum concentrations were used as EPCs for groundwater exposures estimated in this HHRA for naphthalene and cobalt because of the small number of positive detections (i.e., one for naphthalene and two for cobalt). As noted previously, using maximum concentrations for EPCs is conservative and likely results in an overestimation of risk because it assumes that a receptor is continually exposed to the greatest concentration detected in the data set. Consequently, risk estimates calculated using the 95% UCL as the EPC are likely to be more representative of actual exposure conditions. Naphthalene was the sole contributor to cancer risks exceeding the State of Rhode Island cancer risk benchmark; therefore, considerable uncertainty is associated with the EPC for naphthalene. Naphthalene was detected in only 1 of 14 groundwater samples.

- For purposes of risk characterization, screening levels were calculated for construction workers using toxicity values from the January 2015 USEPA RSL table and exposure assumptions based on USEPA guidance when applicable. Some exposure assumptions (e.g., exposure frequency) were based on professional judgment.

- Although the future land use of the sites/study areas is anticipated to be industrial/commercial or recreational, the residential land use scenario was evaluated in this HHRA primarily to support risk-management decisions.

- Toxicity criteria are available for different forms of chromium. Hexavalent chromium is considered to be highly toxic versus trivalent chromium. In COPC selection, total chromium was assumed to be present in the trivalent form because it is unlikely that hexavalent chromium is the dominant species

in CED Area media. The following table compares EPCs used in the evaluations for total chromium to the corresponding screening criteria (based on an ILCR = $1x10^{-6}$ or an HQ of 0.1).

EPCs for Chromium	Residential RSLs – Cr III	Tap Water RSLs – Cr VI
Shallow Groundwater (ug/L)		
Maximum = 2.9 (total) Maximum = 1.4 (dissolved)	Noncancer: 2,200 Cancer: Not Applicable	Noncancer: 4.4 Cancer: 0.035

If the screening criteria for hexavalent chromium had been used for COPC selection, chromium would have been selected as a COPC for groundwater. However, as stated previously, it is unlikely that hexavalent chromium is the dominant species in CED Area media.

- Cobalt was selected as a COPC in groundwater based on an exceedance of the USEPA RSL. Uncertainty is associated with selecting cobalt as a COPC because cobalt is a naturally-occurring metal and the conservative screening levels (based on USEPA criteria) are likely to be less than background levels of cobalt expected at some sites. For example, the Maryland Department of the Environment (MDE) selected revised criteria for cobalt of 50 mg/kg for soil and 100 ug/L for groundwater based on Agency for Toxic Substances and Disease Registry (ATSDR) toxicity values (MDE, 2013). These MDE value for cobalt is considerably greater than the current USEPA cobalt RSLs for tap water (6 ug/L). Cobalt would not have been selected as a COPC for groundwater at Sites 02/03 if the MDE value for cobalt was used for COPC selection instead of the USEPA RSL.

7.0 Summary and Conclusions

The HHRA for the CED Area Sites 02/03 evaluated potential risks and hazards for exposures to shallow-zone groundwater. Groundwater samples collected in September/October 2014 were used in the HHRA and were compared to conservative screening levels for direct contact exposures. Vapor intrusion exposures for groundwater were evaluated separately (see Attachment A-2). Additionally, groundwater data from the most recent sampling round were used to update the qualitative evaluation for migration from soil to groundwater originally presented in the 2014 risk evaluation (Tetra Tech, 2014a). Screening criteria for trivalent chromium were used to evaluate total chromium data in the HHRA because historical site activities for the CED Area do not suggest that hexavalent chromium would be a significant contaminant at any sites in the investigation area.

Risk drivers for direct contact exposures are presented below.

Environmental Medium	Receptors	Risk Drivers
Shallow Groundwater	Construction Worker	None
	Hypothetical Resident	Naphthalene

Naphthalene was identified as a risk driver for hypothetical resident exposure to groundwater based on the HHRA. However, unacceptable Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) risks were not predicted for receptor exposure to groundwater and naphthalene was only detected in 1 of 14 groundwater samples. Also, the maximum concentration was used as the EPC, which likely overestimates risks. Additionally, naphthalene was detected at well MW02-10S, where historical concentrations of fuel-related contaminants were greater than current concentrations, indicating that contaminant concentrations may be attenuating over time. Therefore, naphthalene is not selected as a COC. However, future monitoring is recommended to assure that concentrations continue to attenuate over time.

8.0 References

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Tables

TABLE A-1.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH GROUNDWATER - SITES 02 AND 03
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Upgradient/ Background Concentrations[4]	USEPA RSL - Tap Water[5]	USEPA MCL[6]	RIDEM GA Groundwater Objective[7]	RIDEM GB Groundwater Objective[7]	COPC Flag	Rationale for Contaminant Deletion or Selection[8]
Sites 02/03	VOLATILES															
	110-82-7	Cyclohexane	10	10	ug/L	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/14	1 - 1	10	ND	1300 N	NA	NA	NA	No	BSL
	98-82-8	Isopropylbenzene	14	14	ug/L	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/14	0.5 - 0.5	14	ND	45 N	NA	NA	NA	No	BSL
	108-87-2	Methyl Cyclohexane	8	8	ug/L	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/14	1 - 1	8	ND	NA	NA	NA	NA	No	NTX
	75-69-4	Trichlorofluoromethane	0.67 J	0.88 J	ug/L	MW02-03S-NWG-111914-D	1/14	1 - 1	0.88	ND	110 N	NA	NA	NA	No	BSL
	POLYCYCLIC AROMATIC HYDROCARBONS															
	91-20-3	Naphthalene	2.6	2.8	ug/L	MW02-10S-NWG-101014-D	1/14	0.1 - 0.1	2.8	ND	0.17 C	NA	100	NA	Yes	ASL
	METALS															
	7429-90-5	Aluminum	24.2	202	ug/L	MW02-03S-NWG-100314	8/14	8.5 - 17	202	22 - 22	2000 N	NA	NA	NA	No	BSL
	7440-36-0	Antimony	0.2 J	0.41 J	ug/L	MW02-05S-NWG-100214	6/14	0.2 - 0.2	0.41	0.28 - 0.28	0.78 N	NA	6	NA	No	BSL
	7440-39-3	Barium	2 J	76.8	ug/L	MW03-01SA-NWG-102914	11/14	7.1 - 9	76.8	5.1 - 10.5	380 N	2000	2000	NA	No	BSL
	7440-43-9	Cadmium	0.09 J	0.49 J	ug/L	MW03-05S-NWG-100114	9/14	0.15 - 0.32	0.49	0.091 - 0.091	0.92 N	5	5	NA	No	BSL
	7440-70-2	Calcium	3230	34300	ug/L	MW02-03S-NWG-100314	14/14	-	34300	4380 - 7810	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.24 J	2.9	ug/L	MW02-10S-NWG-101014	13/14	0.25 - 0.25	2.9	0.91 - 1.2	2200 N[9]	100	100	NA	No	BSL
	7440-48-4	Cobalt	0.56 J	0.93	ug/L	MW03-01SA-NWG-102914	2/14	0.029 - 1.2	0.93	0.56 - 0.56	0.6 N	NA	NA	NA	Yes	ASL
	7440-50-8	Copper	0.28 J	1.2 J	ug/L	MW03-03Sa-NWG-103014	8/14	0.24 - 0.71	1.2	0.51 - 0.51	80 N	1300	NA	NA	No	BSL
	7439-89-6	Iron	14.5 J	1050	ug/L	MW02-10S-NWG-101014-D	5/14	20 - 98.3	1050	32.5 - 32.5	1400 N	NA	NA	NA	No	BSL
	7439-95-4	Magnesium	760	6110	ug/L	MW03-01SA-NWG-102914	14/14	-	6110	1430 - 2110	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	1.4 J	357	ug/L	MW02-10S-NWG-101014-D	14/14	-	357	3.9 - 24.1	43 N	NA	NA	NA	Yes	ASL
	7440-02-0	Nickel	0.39 J	12.5	ug/L	MW03-05S-NWG-100114	11/14	0.2 - 0.27	12.5	1.6 - 4.1	39 N	NA	100	NA	No	BSL
	7440-09-7	Potassium	614	2730	ug/L	MW03-01SA-NWG-102914, MW03-01SA-NWG-102914-D	14/14	-	2730	822 - 1590	NA	NA	NA	NA	No	NUT
	7782-49-2	Selenium	0.15 J	0.41 J	ug/L	MW02-03S-NWG-100314	6/14	0.25 - 0.25	0.41	0.37 - 0.37	10 N	50	50	NA	No	BSL
	7440-23-5	Sodium	4020	61800	ug/L	MW03-01SA-NWG-102914	14/14	-	61800	6420 - 27000	NA	NA	NA	NA	No	NUT

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CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Upgradient/ Background Concentrations[4]	USEPA RSL - Tap Water[5]	USEPA MCL[6]	RIDEM GA Groundwater Objective[7]	RIDEM GB Groundwater Objective[7]	COPC Flag	Rationale for Contaminant Deletion or Selection[10]
Sites 02/03	**METALS (CONTINUED)**															
	7440-62-2	Vanadium	0.65 J	1.3 J	ug/L	MW02-04Sa-NWG-100614	3/14	1 - 1	1.3	ND	8.6 N	NA	NA	NA	No	BSL
	7440-66-6	Zinc	0.82 J	58.8	ug/L	MW02-10S-NWG-101014-D	10/14	1 - 7.2	58.8	ND	600 N	NA	NA	NA	No	BSL
	DISSOLVED METALS															
	7429-90-5	Aluminum	28.2	184	ug/L	MW02-03S-NWG-100314	4/14	3.3 - 16.7	184	22.1 - 22.1	2000 N	NA	NA	NA	No	BSL
	7440-36-0	Antimony	0.21 J	0.3 J	ug/L	MW02-06Sa-NWG-102914	6/14	0.2 - 0.2	0.3	0.4 - 0.4	0.78 N	NA	6	NA	No	BSL
	7440-39-3	Barium	2 J	76.9	ug/L	MW03-01SA-NWG-102914-D	11/14	6.2 - 8.7	76.9	5 - 10.1	380 N	2000	2000	NA	No	BSL
	7440-43-9	Cadmium	0.088 J	2.3	ug/L	MW03-04S-NWG-093014	9/14	0.15 - 0.27	2.3	0.088 - 0.088	0.92 N	5	5	NA	No	Reg. I[10]
	7440-70-2	Calcium	3100	32800	ug/L	MW02-03S-NWG-100314	14/14	-	32800	4330 - 7480	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.33 J	1.4 J	ug/L	MW02-04Sa-NWG-100614	13/14	0.25 - 0.25	1.4	0.83 - 0.89	2200 N[9]	100	100	NA	No	BSL
	7440-48-4	Cobalt	0.64	0.65	ug/L	MW03-01SA-NWG-102914	1/14	0.025 - 1.3	0.65	0.52 - 0.52	0.6 N	NA	NA	NA	No	Reg. I[10]
	7440-50-8	Copper	0.27 J	2.2	ug/L	MW02-08Sa-NWG-100114	11/14	0.74 - 1.1	2.2	0.58 - 1.2	80 N	1300	NA	NA	No	BSL
	7439-89-6	Iron	37.6 J	1580	ug/L	MW02-10S-NWG-101014	4/14	20 - 20	1580	16.6 - 150	1400 N	NA	NA	NA	No	Reg. I[10]
	7439-92-1	Lead	0.55 J	2.7	ug/L	MW02-09S-NWG-100814	2/14	0.077 - 0.3	2.7	ND	15	15	15	NA	No	BSL
	7439-95-4	Magnesium	706	6580	ug/L	MW03-01SA-NWG-102914-D	14/14	-	6580	1400 - 2030	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	2.6	501	ug/L	MW02-10S-NWG-101014	14/14	-	501	4.2 - 22.5	43 N	NA	NA	NA	No	Reg. I[10]
	7440-02-0	Nickel	1	10.6	ug/L	MW03-05S-NWG-100114	12/14	0.9 - 0.94	10.6	0.83 - 4.4	39 N	NA	100	NA	No	BSL
	7440-09-7	Potassium	626	2900	ug/L	MW03-01SA-NWG-102914-D	14/14	-	2900	831 - 1540	NA	NA	NA	NA	No	NUT
	7782-49-2	Selenium	0.23 J	0.34 J	ug/L	MW02-03S-NWG-100314	5/14	0.25 - 0.25	0.34	0.36 - 0.36	10 N	50	50	NA	No	BSL
	7440-23-5	Sodium	3940	63200	ug/L	MW03-01SA-NWG-102914-D	14/14	-	63200	6330 - 25900	NA	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	0.64 J	0.94 J	ug/L	MW02-11S-NWG-100814	4/14	1 - 1	0.94	ND	8.6 N	NA	NA	NA	No	BSL
	7440-66-6	Zinc	1.4 J	51.7	ug/L	MW02-10S-NWG-101014	14/14	-	51.7	1.4 - 22.4	600 N	NA	NA	NA	No	BSL
	PETROLEUM HYDROCARBONS															
	–	TPH (C09-C40)	0.64	0.68	mg/L	MW02-10S-NWG-101014	1/14	0.05 - 0.05	0.68	ND	NA	NA	NA	NA	No	NTX

TABLE A-1.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH GROUNDWATER - SITES 02 AND 03
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Upgradient/ Background Concentrations[4]	USEPA RSL - Tap Water[5]	USEPA MCL[6]	RIDEM GA Groundwater Objective[7]	RIDEM GB Groundwater Objective[7]	COPC Flag	Rationale for Contaminant Deletion or Selection[8]
Sites 02/03	**PETROLEUM HYDROCARBONS**															
	–	Gasoline Range Organics	1300	1400	ug/L	MW02-10S-NWG-101014-D	1/14	20 - 20	1400	ND	NA	NA	NA	NA	No	NTX

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - The range of concentrations from wells MW01-10S, MW01-13S, and MW01-14S is presented.
5 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 0.1.
6 - Federal Maximum Contaminant Levels (MCLs), 2012 Edition of the Drinking Water Standards and Health Advisories.
Office of Water, Washington, D.C. EPA 822-S-12-001. April.
7 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
8 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level
and is greater than upgradient/background concentrations.
9 - The screening value is for trivalent chromium.
10 - In accordance with USEPA Region I guidance, only total metals groundwater results are used in the risk assessment; dissolved
metals results are presented for information purposes only and are not used for COPC selection.
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level and background

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria
Reg. I = USEPA Region I guidance

Associated Samples
MW01-12S-NWG-100214
MW02-03S-NWG-100314
MW02-03S-NWG-111914
MW02-03S-NWG-111914-D
MW02-04Sa-NWG-100614
MW02-05S-NWG-100214
MW02-06Sa-NWG-102914
MW02-08Sa-NWG-100114
MW02-09S-NWG-100814
MW02-10S-NWG-101014
MW02-10S-NWG-101014-D
MW02-11S-NWG-100814
MW03-01SA-NWG-102914
MW03-01SA-NWG-102914-D
MW03-02S-NWG-092914
MW03-03Sa-NWG-103014
MW03-04S-NWG-093014
MW03-05S-NWG-100114

TABLE A-1.2

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SHALLOW GROUNDWATER
HUMAN HEALTH RISK EVALUATION - SITES 02 AND 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL or Maximum Concentration[1] (mg/kg)	Construction Worker PRG[2] (mg/kg)	Estimated ILCR	Primary Target Organs	Construction Worker PRG[2] (mg/kg)	Estimated HQ
Naphthalene[3]	2.8	5200	5.4E-10	Body Weight	7500	0.00037
Cobalt[3]	0.93	NA	NA	Thyroid	58	0.016
Manganese	300	NA	NA	Central Nervous System	470	0.64
		Total ILCR	5E-10		Total HI	0.7

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, January and exposure assumptions based on USEPA guidance when applicable (see text).
3 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

TABLE A-1.3

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SHALLOW GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT - SITES 02 AND 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL or Maximum Concentration[1] (mg/kg)	USEPA Tap Water RSL[2] (ug/L)	Estimated ILCR	Primary Target Organs	USEPA Tap Water RSL[2] (ug/L)	Estimated HQ
Naphthalene[3]	2.8	0.17	1.6E-05	Body Weight	6.1	0.46
Cobalt[3]	0.93	NA	NA	Thyroid	6	0.16
Manganese	300	NA	NA	Central Nervous System	430	0.70
		Total ILCR	*2E-05*		Total HI	1

1 - The maximum concentration is used in place of the 95% UCL concentration if there are an insufficient number of samples or positive detections to calculate the 95% UCL.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
3 - The maximum concentration was used.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

ProUCL Output – Sites 02/03 Shallow Groundwater

PROUCL OUTPUT - SITES 02/03 SHALLOW GROUNDWATER

UCL Statistics for Uncensored Full Data Sets	
User Selected Options	
Date/Time of Computation	1/27/2015 4:46:03 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Manganese

General Statistics

Total Number of Observations	14	Number of Distinct Observations	14
		Number of Missing Observations	1
Minimum	1.4	Mean	46.01
Maximum	344.5	Median	9.4
SD	95.07	Std. Error of Mean	25.41
Coefficient of Variation	2.066	Skewness	2.86

Normal GOF Test

Shapiro Wilk Test Statistic	0.518	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.4	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	91.01	95% Adjusted-CLT UCL (Chen-1995)	108.6
		95% Modified-t UCL (Johnson-1978)	94.25

Gamma GOF Test

A-D Test Statistic	1.398	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.794	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.313	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.242	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.498	k star (bias corrected MLE)	0.439
Theta hat (MLE)	92.43	Theta star (bias corrected MLE)	104.9
nu hat (MLE)	13.94	nu star (bias corrected)	12.29
MLE Mean (bias corrected)	46.01	MLE Sd (bias corrected)	69.47
		Approximate Chi Square Value (0.05)	5.416
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	4.824

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	104.4	95% Adjusted Gamma UCL (use when n<50)	117.2

Manganese (continued)

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.874	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.192	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.237	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	0.336	Mean of logged Data	2.552
Maximum of Logged Data	5.842	SD of logged Data	1.502
Assuming Lognormal Distribution			
95% H-UCL	185	90% Chebyshev (MVUE) UCL	81
95% Chebyshev (MVUE) UCL	102.1	97.5% Chebyshev (MVUE) UCL	131.5
99% Chebyshev (MVUE) UCL	189.1		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	87.81	95% Jackknife UCL	91.01
95% Standard Bootstrap UCL	85.52	95% Bootstrap-t UCL	324.5
95% Hall's Bootstrap UCL	321.6	95% Percentile Bootstrap UCL	90.61
95% BCA Bootstrap UCL	111.6		
90% Chebyshev(Mean, Sd) UCL	122.2	95% Chebyshev(Mean, Sd) UCL	156.8
97.5% Chebyshev(Mean, Sd) UCL	204.7	99% Chebyshev(Mean, Sd) UCL	298.8
Suggested UCL to Use			
99% Chebyshev (Mean, Sd) UCL	298.8		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

ATTACHMENT A-2

CHARACTERIZATION OF VAPOR INTRUSION POTENTIAL AT SITES 02/03

ATTACHMENT A-2

CHARACTERIZATION OF VAPOR INTRUSION POTENTIAL AT SITES 02/03 CONSTRUCTION EQUIPMENT DEPARTMENT AREA FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

1.0 Introduction

Volatile organic chemicals (VOCs) detected in shallow-depth groundwater wells at Sites 02/03 within Construction Equipment Department (CED) Area and the Drum Removal Area were evaluated to determine if there would be unacceptable risks associated with vapor intrusion into hypothetical future buildings within the study area. Conservatively, groundwater data for intermediate-depth wells located within the Drum Removal Area were also evaluated even though VOC results for these wells do not represent water-table concentrations, the most appropriate concentrations to evaluate in a vapor intrusion analysis. The risk assessment presented herein considers the groundwater data collected from the most recent sampling event (September 2014), collected as discussed in Sections 4.0 and 5.0 of the main report. Figure 3-1 of the main report shows groundwater sampling locations.

Analytical data for chemicals detected at least once in each groundwater data set considered in the evaluation are presented as Tables A-2.1, A-2.2, and A-2.3 for Sites 02/03 groundwater, Drum Removal Area shallow groundwater, and Drum Removal Area intermediate groundwater, respectively, along with screening criteria defined below. Wells MW01-10S, MW01-13S, and MW01-14S were considered upgradient/background wells for Sites 02/03 for purposes of chemical of potential concern (COPC) selection; however, no volatiles were detected in these upgradient/background wells. The analytical results for groundwater data sets considered in this evaluation are presented in Appendix B.

Concentrations of volatile chemicals detected in the groundwater samples were compared to screening criteria for vapor intrusion. These screening criteria, calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator (Version 3.3, May 2014 RSLs) (USEPA, 2014a), were derived to identify chemical concentrations in groundwater that may adversely affect the indoor air quality of a building overlying subsurface VOC contamination. The vapor intrusion criteria assume a subsurface attenuation factor (from groundwater-to-indoor-air concentrations) of 0.001. The values correspond to a target cancer risk level of $1x10^{-6}$ or a hazard quotient (HQ) of 0.1 to account for potential cumulative effects of chemicals affecting the same target organ. The results of the screening evaluation are presented below.

2.0 Comparison of Detected Concentrations to Vapor Intrusion Screening Criteria

Sites 02/03 Shallow Groundwater

Four VOCs, one semivolatile organic compound (SVOC) (naphthalene), metals, and petroleum hydrocarbons were detected in the Sites 02/03 groundwater samples listed in Table A-2.1. Table A-2.4 presents a summary of descriptive statistics and the COPC selection for the CED Area shallow groundwater data displayed in Table A-2.1. No chemicals were detected at maximum concentrations exceeding the screening criteria for vapor intrusion. Therefore, no chemicals were selected as COPCs for the CED Area shallow groundwater data set; further vapor intrusion risk evaluation of this data set was not conducted.

Drum Removal Area – Shallow Groundwater Wells (MW03-15S, MW03-16S, and MW03-17S)

Two VOCs and metals were detected in the Drum Removal Area shallow groundwater samples listed in Table A-2.2. Table A-2.5 presents a summary of descriptive statistics and the COPC selection for the Drum Removal Area shallow groundwater data displayed in Table A-2.2. Trichloroethene, the only chemical detected at a maximum concentration exceeding the screening criterion for vapor intrusion, was selected as a COPC for the vapor intrusion evaluation of the shallow groundwater data set for the Drum Removal Area and was further evaluated using USEPA's VISL calculator.

Drum Removal Area – Intermediate Groundwater Wells (MW03-15I, MW03-16I, and MW03-17I)

Analytical data for VOCs and metals detected in the Drum Removal Area intermediate groundwater samples are presented in Table A-2.3. Table A-2.6 presents a summary of descriptive statistics and the COPC selection for the groundwater data displayed in Table A-2.3. The following four chemicals were detected at maximum concentrations exceeding the screening criteria for vapor intrusion and were selected as COPCs for further vapor intrusion evaluation using the USEPA's VISL calculator:

- 1,1,2,2-Tetrachloroethane (exceeded in MW03-16I-NWG-102814)
- 1,1,2-Trichloroethane (exceeded in MW03-16I-NWG-102814)
- Trichloroethene (exceeded in MW03-16I-NWG-102814 and MW03-17I-NWG-100214)
- Vinyl chloride (exceeded in MW03-16I-NWG-102814)

As noted above, trichloroethene was the only chemical detected in samples from MW03-17I at concentrations exceeding screening levels. All COPCs were detected in MW03-16I.

3.0 Vapor Intrusion Risk Calculations

There are currently no buildings within the study area. Consequently, this evaluation considered a hypothetical scenario where a residential or industrial building was constructed within the study area.
In accordance with USEPA guidance (2013, 2014b), insufficient data were available to calculate an exposure point concentration (EPC) within the center of the plume; therefore, the maximum detected concentrations from the groundwater data sets were used as the EPCs for each chemical exceeding the screening levels. The VISL calculator was used to evaluate both a hypothetical future residential land use scenario as well as an industrial land use scenario using the default values incorporated in the calculator. Toxicity criteria from the May 2014 Regional Screening Level (RSL) table, incorporated in the VISL calculator, were used to calculate risks.

4.0 Results

The results of the vapor intrusion modeling are summarized in Tables A-2.7 and A-2.8 for COPCs detected in the shallow and intermediate Drum Removal Area groundwater, respectively. The risk calculation files from the VISL calculator are presented at the end of this attachment. The total hazard index (HI) for noncarcinogens is compared to the USEPA and Rhode Island Department of Environmental Management (RIDEM) target level of 1. The total incremental lifetime cancer risk (ILCR) for carcinogens is compared to the USEPA target cancer risk range of $1x10^{-4}$ to $1x10^{-6}$ and the RIDEM target cancer level of $1x10^{-5}$.

Drum Removal Area – Shallow Wells

Total HIs for residential and industrial exposures to the maximum concentration of trichloroethene were less than the target HI of 1, indicating that adverse noncarcinogenic effects are not anticipated for these receptors under the defined exposure conditions.

The ILCRs for residential and industrial exposures to the maximum concentration of trichloroethene were less than or within the USEPA target risk range of $1x10^{-4}$ to $1x10^{-6}$. The total ILCRs were also less than the RIDEM target cancer risk level of $1x10^{-5}$.

Drum Removal Area – Intermediate Wells

As stated previously, intermediate area wells were evaluated primarily for purposes of completeness, as chemicals detected in shallow/water table wells are expected to provide a better indication of potential vapor intrusion risks. Additionally, it is anticipated that chemicals detected at intermediate depths are

more representative of off-site contamination [i.e., the upgradient United States Army Corps of Engineers (USACE) Nike site] instead of site-related contamination; see Section 5.0 for a discussion of potential off-site contamination sources.

Total HIs for residential and industrial exposures to the maximum concentrations of all COPCs were greater than the target HI of 1, and target organ-specific HIs for the liver also exceeded 1. Trichloroethene is the primary risk driver.

The total ILCR ($2x10^{-4}$) for residential exposures to the maximum concentrations of all COPCs was greater than the USEPA target risk range of $1x10^{-4}$ to $1x10^{-6}$ and greater than the RIDEM target cancer risk level of $1x10^{-5}$. The total ILCR ($3x10^{-5}$) for industrial exposures is within the USEPA target cancer risk range but exceeds the RIDEM target cancer risk level of $1x10^{-5}$. Trichloroethene is the primary risk driver for both residential and industrial cancer risks.

5.0 Uncertainty Analysis

The results of the vapor intrusion evaluation are subject to the following sources of uncertainty:

- As reported in the *Human Health Risk Evaluation for Construction Equipment Department, Former Naval Construction Battalion Center Davisville, North Kingston, Rhode Island* (Tetra Tech, 2014), shallow well MW02-10S had a historical detection of naphthalene (32.4 ug/L). This most recent historical naphthalene concentration of 32.4 ug/L exceeds the current VISL of 4.6 ug/L. However, the naphthalene concentration detected in well MW02-10S during the current sampling round (2.8 ug/L) does not exceed the current VISL. Therefore, naphthalene was not selected as a COPC for vapor intrusion in this quantitative vapor intrusion evaluation. The fact that historical concentrations of naphthalene were greater than the current concentration indicates that contaminant concentrations may be attenuating over time.

- Intermediate groundwater data (from the Drum Removal Area) were evaluated for purposes of completeness. However, it is expected that shallow groundwater data are more representative of potential vapor intrusion sources. Additionally, the intermediate groundwater data are likely more representative of off-site sources of contamination, as a VOC plume emanating primarily from an upgradient USACE source area underlies soil at the CED Area.

- No COPC selection criteria or surrogate inhalation toxicity criteria were available for cis-1,2-dichloroethene, trans-1,2-dichloroethene, or methyl cyclohexane. However, as discussed in Section 3.0 of the main report, the VOC contamination detected in the shallow groundwater

monitoring at Sites 02/03 (i.e., the fuel related contamination) appears to be attenuating over time. Additionally, screening levels and toxicity criteria are available for the more toxic chlorinated volatile organic compounds (CVOCs) detected in Drum Removal Area wells. Therefore, risk assessment results are not significantly impacted by the lack of criteria.

- Groundwater data included in this vapor intrusion evaluation were also compared to federal Maximum Contaminant Levels (MCLs) (USEPA, 2012) as part of the direct contact evaluation Sites 02 and 03 groundwater (Table A-1.1, Attachment A-1) and Drum Removal Area groundwater (Tables A-3.3 and A-3.4, Attachment A-3). As shown on Table A-1.1 of Attachment A-1, no concentrations in Site 02 and 03 shallow groundwater exceed MCLs. Similarly, Table A-3.3 of Attachment A-3 shows that no concentrations detected in Drum Removal Area shallow groundwater exceed MCLs. For Drum Removal Area intermediate groundwater, the following VOCs were detected at concentrations exceeding MCLs (Table A-3.4 of Attachment A-3):

Chemical	**Maximum Concentration (ug/L)**	**MCL (ug/L)**
1,1,2-Trichloroethane	5.6	5
Cis-1,2-Dichloroethene	100	70
Trichloroethene	170	5
Vinyl Chloride	2.4	2

As noted above (2nd bullet), uncertainty is associated with the intermediate groundwater data set.

6.0 Summary and Conclusions

The evaluation of vapor intrusion compared concentrations of VOCs detected in 2014 from shallow-depth groundwater wells at Sites 02/03 as well as shallow- and intermediate-depth groundwater wells at the Drum Removal Area to determine if there would be unacceptable risks associated with vapor intrusion into hypothetical future buildings within the study area. However, VOC results for the intermediate-depth wells do not represent water-table concentrations, the most appropriate concentrations to evaluate in a vapor intrusion analysis.

The chemicals (for the Drum Removal Area shallow- and intermediate-depth groundwater) exceeding screening criteria were further evaluated using the VISL calculator. (No chemicals were detected at concentrations exceeding vapor intrusion screening criteria in the Sites 02/03 shallow groundwater data set.)

No unacceptable risks or hazards were estimated for Drum Removal Area shallow groundwater. For Drum Removal Area intermediate groundwater, total HIs for residential and industrial exposures exceeded 1 on a target organ basis due to trichloroethene. The ILCRs for Drum Removal Area intermediate groundwater exceeded the USEPA target risk range and RIDEM target cancer risk level for residential exposures and exceeded the RIDEM target cancer risk level only for industrial exposures due to trichloroethene. However, VOCs in the shallow groundwater are expected to be more representative of potential vapor intrusion sources than intermediate groundwater, and upgradient sources (i.e., the Nike site) are likely the predominant source of VOCs detected in the intermediate groundwater.

7.0 References

USEPA, 2013. ProUCL Version 5.0.00 User Guide. Office of Research and Development, Washington, D.C. EPA/600/R 07/041. September.

USEPA, 2014a. Vapor Intrusion Screening Level (VISL) Calculator Version 3.3, May 2014 RSLs. Office of Solid Waste and Remedial Response. Washington, D.C. June.

USEPA, 2014b. Determining Groundwater Exposure Point Concentrations. Office of Solid Waste and Remedial Response. OSWER Directive 9283.1-42. February.

Tables

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE TOP DEPTH BOTTOM DEPTH	EPA VISL (ug/L)[1]		MW01-10S MW01-10S-NWG-100214 20141002 NORMAL (UPGRADIENT) 13 23	MW01-12S MW01-12S-NWG-100214 20141002 NORMAL 14 24	MW01-13S MW01-13Sa-NWG-102714 20141027 NORMAL (UPGRADIENT) 13 23
VOLATILES (UG/L)					
CYCLOHEXANE	102	N	1 U	1 U	1 U
ISOPROPYLBENZENE	89	N	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA		1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	18	C	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	4.6	C	0.1 U	0.1 U	0.1 U
METALS (UG/L)					
ALUMINUM	NA		11.7 U	6.5 U	22
ANTIMONY	NA		0.2 U	0.2 U	0.28 J
BARIUM	NA		5.1 J	5.8 J	5.8 J
CADMIUM	NA		0.15 U	0.09 J	0.15 U
CALCIUM	NA		4380	10600	5710
CHROMIUM	NA		0.91 J	0.72 J	1.1 J
COBALT	NA		0.033 U	0.24 U	0.58
COPPER	NA		0.38 U	0.39 J	0.51 J
IRON	NA		20 U	20 U	32.5 J
MAGNESIUM	NA		1430	1700	1620
MANGANESE	NA		3.9	1.4 J	24.1
NICKEL	NA		0.25 U	0.74 J	4.1
POTASSIUM	NA		822	1340	1320
SELENIUM	NA		0.25 U	0.25 U	0.25 U
SODIUM	NA		6420	4090	8590
VANADIUM	NA		1 U	1 U	1 U
ZINC	NA		1 U	1.4 J	9.3 U
DISSOLVED METALS (UG/L)					
ALUMINUM	NA		11.2 U	6.7 U	22.1
ANTIMONY	NA		0.2 U	0.2 U	0.4 J
BARIUM	NA		5 J	5.8 J	5.4 J
CADMIUM	NA		0.15 U	0.15 U	0.15 U
CALCIUM	NA		4330	10200	5520
CHROMIUM	NA		0.83 J	0.88 J	0.85 J
COBALT	NA		0.048 U	0.23 U	0.52
COPPER	NA		0.72 J	1.1 J	1.2 J
IRON	NA		20 U	20 U	16.6 J
LEAD	NA		0.15 U	0.15 U	0.19 U
MAGNESIUM	NA		1400	1640	1580
MANGANESE	NA		4.2	2.6	22.5
NICKEL	NA		0.83 J	1.3	4.4
POTASSIUM	NA		831	1330	1280
SELENIUM	NA		0.25 U	0.25 U	0.25 U
SODIUM	NA		6330	4000	8320
VANADIUM	NA		1 U	1 U	1 U
ZINC	NA		1.6 J	2 J	22.4 J

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW01-10S	MW01-12S	MW01-13S
SAMPLE ID		MW01-10S-NWG-100214	MW01-12S-NWG-100214	MW01-13Sa-NWG-102714
SAMPLE DATE	EPA VISL	20141002	20141002	20141027
SAMPLE CODE	(ug/L)[1]	NORMAL (UPGRADIENT)	NORMAL	NORMAL (UPGRADIENT)
TOP DEPTH		13	14	13
BOTTOM DEPTH		23	24	23
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	20 U	20 U	20 U

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW01-14S		MW02-03S
SAMPLE ID		MW01-14S-NWG-100914	MW02-03S-NWG-100314	MW02-03S-NWG-111914
SAMPLE DATE	EPA VISL	20141009	20141003	20141119
SAMPLE CODE	(ug/L)[1]	NORMAL (UPGRADIENT)	NORMAL	ORIGINAL
TOP DEPTH		15	20	20
BOTTOM DEPTH		25	30	30
VOLATILES (UG/L)				
CYCLOHEXANE	102	1 U	–	1 U
ISOPROPYLBENZENE	89	0.5 U	–	0.5 U
METHYL CYCLOHEXANE	NA	1 U	–	1 U
TRICHLOROFLUOROMETHANE	18	1 UJ	–	0.67 J
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	4.6	0.1 U	0.1 U	–
METALS (UG/L)				
ALUMINUM	NA	17.6 U	202	–
ANTIMONY	NA	0.2 U	0.2 U	–
BARIUM	NA	10.5	16.2	–
CADMIUM	NA	0.091 J	0.19 J	–
CALCIUM	NA	7810	34300	–
CHROMIUM	NA	1.2 J	1 J	–
COBALT	NA	0.098 U	0.58 J	–
COPPER	NA	0.38 U	0.72 J	–
IRON	NA	20 U	20 U	–
MAGNESIUM	NA	2110	5850	–
MANGANESE	NA	4.4	18.3	–
NICKEL	NA	1.6	0.9 J	–
POTASSIUM	NA	1590	2020	–
SELENIUM	NA	0.37 J	0.41 J	–
SODIUM	NA	27000	11800	–
VANADIUM	NA	1 U	1 U	–
ZINC	NA	1.5 J	5.6	–
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	19.3 U	184	–
ANTIMONY	NA	0.2 U	0.2 U	–
BARIUM	NA	10.1	15.6	–
CADMIUM	NA	0.088 J	0.19 J	–
CALCIUM	NA	7480	32800	–
CHROMIUM	NA	0.89 J	1 J	–
COBALT	NA	0.076 U	0.51 U	–
COPPER	NA	0.58 J	1.7 J	–
IRON	NA	150 J	20 U	–
LEAD	NA	0.22 U	0.17 U	–
MAGNESIUM	NA	2030	5650	–
MANGANESE	NA	14.4	17.5	–
NICKEL	NA	1.4	1.4	–
POTASSIUM	NA	1540	1970	–
SELENIUM	NA	0.36 J	0.34 J	–
SODIUM	NA	25900	11200	–
VANADIUM	NA	1 U	1 U	–
ZINC	NA	1.4 J	6	–

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW01-14S		MW02-03S
SAMPLE ID		MW01-14S-NWG-100914	MW02-03S-NWG-100314	MW02-03S-NWG-111914
SAMPLE DATE	EPA VISL	20141009	20141003	20141119
SAMPLE CODE	(ug/L)[1]	NORMAL (UPGRADIENT)	NORMAL	ORIGINAL
TOP DEPTH		15	20	20
BOTTOM DEPTH		25	30	30
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	0.05 U	0.05 U	--
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	20 U	--	20 U

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION			MW02-04S	MW02-05S
SAMPLE ID		MW02-03S-NWG-111914-D	MW02-04Sa-NWG-100614	MW02-05S-NWG-100214
SAMPLE DATE	EPA VISL	20141119	20141006	20141002
SAMPLE CODE	(ug/L)[1]	DUPLICATE	NORMAL	NORMAL
TOP DEPTH		20	16	16.5
BOTTOM DEPTH		30	26	26.5
VOLATILES (UG/L)				
CYCLOHEXANE	102	1 U	1 U	1 U
ISOPROPYLBENZENE	89	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	18	0.88 J	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	4.6	–	0.1 U	0.1 U
METALS (UG/L)				
ALUMINUM	NA	–	16.5 U	38.2
ANTIMONY	NA	–	0.2 U	0.41 J
BARIUM	NA	–	2 J	8 J
CADMIUM	NA	–	0.1 J	0.16 J
CALCIUM	NA	–	5770	7940
CHROMIUM	NA	–	1.6 J	1.3 J
COBALT	NA	–	0.042 U	0.19 U
COPPER	NA	–	0.36 U	0.28 J
IRON	NA	–	14.5 J	20 U
MAGNESIUM	NA	–	1420	1830
MANGANESE	NA	–	4.1	10.8
NICKEL	NA	–	0.59 J	0.57 J
POTASSIUM	NA	–	711	776
SELENIUM	NA	–	0.15 J	0.2 J
SODIUM	NA	–	5900	6470
VANADIUM	NA	–	1.3 J	1 U
ZINC	NA	–	1 U	1.2 J
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	–	6 U	34
ANTIMONY	NA	–	0.2 U	0.28 J
BARIUM	NA	–	2 J	5.2 J
CADMIUM	NA	–	0.088 J	0.18 J
CALCIUM	NA	–	5650	7920
CHROMIUM	NA	–	1.4 J	1.3 J
COBALT	NA	–	0.049 U	0.17 U
COPPER	NA	–	0.87 J	1.6 J
IRON	NA	–	20 U	20 U
LEAD	NA	–	0.15 U	0.23 U
MAGNESIUM	NA	–	1380	1830
MANGANESE	NA	–	3.9	12.1
NICKEL	NA	–	1	5.3
POTASSIUM	NA	–	716	801
SELENIUM	NA	–	0.25 U	0.25 U
SODIUM	NA	–	5780	6570
VANADIUM	NA	–	0.64 J	1 U
ZINC	NA	–	1.5 J	8

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION			MW02-04S	MW02-05S
SAMPLE ID		MW02-03S-NWG-111914-D	MW02-04Sa-NWG-100614	MW02-05S-NWG-100214
SAMPLE DATE	EPA VISL	20141119	20141006	20141002
SAMPLE CODE	(ug/L)[1]	DUPLICATE	NORMAL	NORMAL
TOP DEPTH		20	16	16.5
BOTTOM DEPTH		30	26	26.5
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	--	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	20 U	20 U	20 U

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-06S	MW02-08S	MW02-09S
SAMPLE ID		MW02-06Sa-NWG-102914	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814
SAMPLE DATE	EPA VISL	20141029	20141001	20141008
SAMPLE CODE	(ug/L)[1]	NORMAL	NORMAL	NORMAL
TOP DEPTH		16	11.8	12
BOTTOM DEPTH		26	26.8	27
VOLATILES (UG/L)				
CYCLOHEXANE	102	1 U	1 U	1 U
ISOPROPYLBENZENE	89	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	18	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	4.6	0.1 U	0.1 U	0.1 U
METALS (UG/L)				
ALUMINUM	NA	12.6 U	17 U	13.7 U
ANTIMONY	NA	0.36 J	0.2 U	0.2 U
BARIUM	NA	8.2 J	12.6	2.9 J
CADMIUM	NA	0.15 U	0.13 J	0.15 U
CALCIUM	NA	12100	27300	3230
CHROMIUM	NA	0.25 U	1.2 J	0.93 J
COBALT	NA	0.15 U	1.2 U	0.05 U
COPPER	NA	0.55 J	0.71 U	0.38 U
IRON	NA	20 U	40.3 U	20 U
MAGNESIUM	NA	1800	2470	814
MANGANESE	NA	13.8	6.5	3.5
NICKEL	NA	0.39 J	2.6	0.25 U
POTASSIUM	NA	1290	2410	697
SELENIUM	NA	0.25 U	0.27 J	0.25 U
SODIUM	NA	5710	5960	5830
VANADIUM	NA	1 U	1 U	1 U
ZINC	NA	7.2 U	2.7	1 U
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	15.6 U	4.4 U	14.2 U
ANTIMONY	NA	0.3 J	0.2 U	0.2 U
BARIUM	NA	8.1 J	11	3 J
CADMIUM	NA	0.15 U	0.13 J	0.54 J
CALCIUM	NA	11800	28300	3100
CHROMIUM	NA	0.25 U	1 J	1.1 J
COBALT	NA	0.19 U	1.3 U	0.027 U
COPPER	NA	1.7 J	2.2	1.2 J
IRON	NA	37.6 J	20 U	20 U
LEAD	NA	0.17 U	0.15 U	2.7
MAGNESIUM	NA	1780	2570	784
MANGANESE	NA	13.9	6.6	3.3
NICKEL	NA	1.4	3.3	3.6
POTASSIUM	NA	1310	2530	708
SELENIUM	NA	0.25 U	0.29 J	0.25 U
SODIUM	NA	5650	6260	5650
VANADIUM	NA	1 U	1 U	1 U
ZINC	NA	11.8 J	5.1	6.9

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-06S	MW02-08S	MW02-09S
SAMPLE ID		MW02-06Sa-NWG-102914	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814
SAMPLE DATE	EPA VISL	20141029	20141001	20141008
SAMPLE CODE	(ug/L)[1]	NORMAL	NORMAL	NORMAL
TOP DEPTH		16	11.8	12
BOTTOM DEPTH		26	26.8	27
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	20 U	20 U	20 U

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-10S		MW02-11S
SAMPLE ID		MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	EPA VISL	20141010	20141010	20141008
SAMPLE CODE	(ug/L)[1]	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH		13	13	13
BOTTOM DEPTH		28	28	28
VOLATILES (UG/L)				
CYCLOHEXANE	102	10	10	1 U
ISOPROPYLBENZENE	89	14	14	0.5 U
METHYL CYCLOHEXANE	NA	8	8	1 U
TRICHLOROFLUOROMETHANE	18	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	4.6	2.6	2.8	0.1 U
METALS (UG/L)				
ALUMINUM	NA	49.1	37	80.1
ANTIMONY	NA	0.23 J	0.2 J	0.2 U
BARIUM	NA	3.5 J	3.5 J	2.1 J
CADMIUM	NA	0.2 J	0.12 J	0.1 J
CALCIUM	NA	11900	12300	3610
CHROMIUM	NA	2.9	2.8	1.8 J
COBALT	NA	0.54 U	0.55 U	0.12 U
COPPER	NA	0.81 J	0.7 J	0.49 J
IRON	NA	1010	1050	163 J
MAGNESIUM	NA	1370	1410	1050
MANGANESE	NA	332	357	8
NICKEL	NA	0.93 J	0.91 J	0.77 J
POTASSIUM	NA	1400	1460	614
SELENIUM	NA	0.31 J	0.22 J	0.25 U
SODIUM	NA	7370	7620	5580
VANADIUM	NA	1.1 J	1 U	1 U
ZINC	NA	46.6	58.8	1 U
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	3.6 U	3.3 U	13.4 U
ANTIMONY	NA	0.2 U	0.2 U	0.2 U
BARIUM	NA	3.6 J	3.6 J	2 J
CADMIUM	NA	0.13 J	0.12 J	0.14 J
CALCIUM	NA	11200	11200	3620
CHROMIUM	NA	0.87 J	0.82 J	1.3 J
COBALT	NA	0.63 U	0.64 U	0.038 U
COPPER	NA	0.27 J	0.58 J	0.93 J
IRON	NA	1580	1530	180 J
LEAD	NA	0.15 U	0.15 U	0.55 J
MAGNESIUM	NA	1500	1500	1030
MANGANESE	NA	501	491	5.2
NICKEL	NA	1.2	1.8	1.3
POTASSIUM	NA	1520	1530	626
SELENIUM	NA	0.31 J	0.26 J	0.27 J
SODIUM	NA	7870	7870	5570
VANADIUM	NA	0.78 J	1 U	0.94 J
ZINC	NA	51.7	49.7	2.5

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW02-10S		MW02-11S
SAMPLE ID		MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	EPA VISL	20141010	20141010	20141008
SAMPLE CODE	(ug/L)[1]	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH		13	13	13
BOTTOM DEPTH		28	28	28
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	0.68	0.64	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	1300	1400	20 U

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-01S		MW03-02S
SAMPLE ID		MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914
SAMPLE DATE	EPA VISL	20141029	20141029	20140929
SAMPLE CODE	(ug/L)[1]	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH		14	14	8.5
BOTTOM DEPTH		24	24	23.5
VOLATILES (UG/L)				
CYCLOHEXANE	102	1 U	1 U	1 U
ISOPROPYLBENZENE	89	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	18	1 UJ	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	4.6	0.1 U	0.1 U	0.1 U
METALS (UG/L)				
ALUMINUM	NA	57	50.6	9.6 U
ANTIMONY	NA	0.29 J	0.26 J	0.37 J
BARIUM	NA	76.8	73.7	8.5 U
CADMIUM	NA	0.32 U	0.29 U	0.15 U
CALCIUM	NA	25000	24700	4840
CHROMIUM	NA	0.24 J	0.35 J	1.4 J
COBALT	NA	0.93	0.9	0.029 U
COPPER	NA	1.1 J	0.88 J	0.24 U
IRON	NA	76.3 J	15.3 J	20 U
MAGNESIUM	NA	6110	6070	771
MANGANESE	NA	159	157	4.5
NICKEL	NA	2.3	2.4	0.2 U
POTASSIUM	NA	2730	2730	1990
SELENIUM	NA	0.25 U	0.25 U	0.21 J
SODIUM	NA	61600	61600	4020
VANADIUM	NA	1 U	1 U	0.65 J
ZINC	NA	6 U	14.7 J	0.82 J
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	41.9	48.9	8.6 U
ANTIMONY	NA	0.28 J	0.28 J	0.29 J
BARIUM	NA	75.1	76.9	8.4 U
CADMIUM	NA	0.27 U	0.27 U	0.15 U
CALCIUM	NA	25900	26900	4670
CHROMIUM	NA	0.33 J	0.55 J	0.94 J
COBALT	NA	0.65	0.64	0.033 U
COPPER	NA	1.6 J	1 J	1.1 U
IRON	NA	20 U	240	20 U
LEAD	NA	0.18 U	0.3 U	0.15 U
MAGNESIUM	NA	6370	6580	745
MANGANESE	NA	172	180	3.7
NICKEL	NA	3	2.4	0.9 U
POTASSIUM	NA	2780	2900	1940
SELENIUM	NA	0.25 U	0.25 U	0.23 J
SODIUM	NA	60900	63200	3940
VANADIUM	NA	1 U	1 U	1 U
ZINC	NA	13.4 J	47.4 J	1.4 J

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-01S		MW03-02S
SAMPLE ID		MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914
SAMPLE DATE	EPA VISL	20141029	20141029	20140929
SAMPLE CODE	(ug/L)[1]	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH		14	14	8.5
BOTTOM DEPTH		24	24	23.5
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	20 U	20 U	20 U

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-03S	MW03-04S	MW03-05S
SAMPLE ID		MW03-03Sa-NWG-103014	MW03-04S-NWG-093014	MW03-05S-NWG-100114
SAMPLE DATE	EPA VISL	20141030	20140930	20141001
SAMPLE CODE	(ug/L)[1]	NORMAL	NORMAL	NORMAL
TOP DEPTH		15	10	11
BOTTOM DEPTH		25	25	26
VOLATILES (UG/L)				
CYCLOHEXANE	102	1 U	1 U	1 U
ISOPROPYLBENZENE	89	0.5 U	0.5 U	0.5 U
METHYL CYCLOHEXANE	NA	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	18	1 U	1 UJ	1 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	4.6	0.1 U	0.1 U	0.1 U
METALS (UG/L)				
ALUMINUM	NA	57.4	79	24.2
ANTIMONY	NA	0.27 J	0.2 U	0.2 U
BARIUM	NA	9.4 J	9 U	7.1 U
CADMIUM	NA	0.3 U	0.1 J	0.49 J
CALCIUM	NA	11500	3870	3710
CHROMIUM	NA	0.61 J	1.4 J	0.9 J
COBALT	NA	0.2 U	0.065 U	0.03 U
COPPER	NA	1.2 J	0.33 U	0.24 U
IRON	NA	61.6 J	98.3 U	31.6 U
MAGNESIUM	NA	2380	886	760
MANGANESE	NA	49.1	15.5	6.2
NICKEL	NA	2.7	0.27 U	12.5
POTASSIUM	NA	1590	1530	747
SELENIUM	NA	0.25 U	0.25 U	0.25 U
SODIUM	NA	12200	5460	4250
VANADIUM	NA	1 U	1 U	1 U
ZINC	NA	16.9 J	1.2 J	3.9
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	28.2	16.7 U	11.5 U
ANTIMONY	NA	0.21 J	0.22 J	0.2 U
BARIUM	NA	9.7 J	8.7 U	6.2 U
CADMIUM	NA	0.15 U	2.3	0.43 J
CALCIUM	NA	11600	3850	3440
CHROMIUM	NA	0.85 J	1.1 J	0.94 J
COBALT	NA	0.16 U	0.051 U	0.025 U
COPPER	NA	1.4 J	0.99 U	0.74 U
IRON	NA	20 U	20 U	20 U
LEAD	NA	0.16 U	0.098 U	0.077 U
MAGNESIUM	NA	2380	869	706
MANGANESE	NA	46.8	14.5	5.4
NICKEL	NA	1.7	0.94 U	10.6
POTASSIUM	NA	1600	1540	697
SELENIUM	NA	0.25 U	0.25 U	0.25 U
SODIUM	NA	12200	5470	3990
VANADIUM	NA	1 U	1 U	0.64 J
ZINC	NA	11.3 J	1.8 J	5

TABLE A-2.1
SUMMARY OF DETECTIONS - SITES 02/03 WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-03S	MW03-04S	MW03-05S
SAMPLE ID		MW03-03Sa-NWG-103014	MW03-04S-NWG-093014	MW03-05S-NWG-100114
SAMPLE DATE	EPA VISL	20141030	20140930	20141001
SAMPLE CODE	(ug/L)[1]	NORMAL	NORMAL	NORMAL
TOP DEPTH		15	10	11
BOTTOM DEPTH		25	25	26
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	20 U	20 U	20 U

Detected concentrations are presented in bold font. Concentrations exceeding the USEPA VISL are shaded yellow.

Footnotes:
1 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 1 for noncarcinogens (N) and an attenuation factor of 0.001.

Definitions:
NA = Not applicable/not available

Qualifiers:
J = Estimated value.
U = Non-detected value.
UJ = Non-detected result is estimated.

TABLE A-2.2
SUMMARY OF DETECTIONS - DRUM REMOVAL AREA - SHALLOW WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION		MW03-15S	MW03-16S	MW03-17S	MW03-17S
SAMPLE ID		MW03-15S-NWG-100114	MW03-16S-NWG-100614	MW03-17S-NWG-093014	MW03-17S-NWG-093014-D
SAMPLE DATE	EPA VISL	20141001	20141006	20140930	20140930
SACODE	(ug/L)	NORMAL	NORMAL	ORIGINAL	DUPLICATE
TOP DEPTH		13	11.5	11.5	11.5
BOTTOM DEPTH		23	21.5	21.5	21.5
VOLATILES (UG/L)					
CIS-1,2-DICHLOROETHENE	NA	0.5 U	0.5 U	1.3	1.3
TRICHLOROETHENE	0.52 C	1.1	1.8	3.3	3.7
METALS (UG/L)					
ALUMINUM	NA	23.3	17.8 U	37.4	37.6
ANTIMONY	NA	0.2 U	0.2 U	0.2 U	0.21 J
BARIUM	NA	5.2 U	8.6 J	16.8	16.8
CADMIUM	NA	0.7 J	0.15 U	0.14 J	0.12 J
CALCIUM	NA	3480	7140	6790	6880
CHROMIUM	NA	0.96 J	0.97 J	0.81 J	1 J
COBALT	NA	0.64 U	0.034 U	7.3	7.3
COPPER	NA	0.46 U	0.38 U	1.5 J	1.9 J
MAGNESIUM	NA	1390	1010	2240	2240
MANGANESE	NA	21.7	10.6	110	110
NICKEL	NA	3.9	0.95 J	10.5	10.1
POTASSIUM	NA	772	1200	1480	1490
SODIUM	NA	6830	6690	11300	11400
VANADIUM	NA	0.84 J	0.84 J	1 U	0.77 J
ZINC	NA	2.6	1.2 J	11.2	10.2
DISSOLVED METALS (UG/L)					
ALUMINUM	NA	20.7 U	15.2 U	33.6	35
ANTIMONY	NA	0.2 U	0.2 U	0.2 U	0.21 J
BARIUM	NA	5.4 U	8.2 J	15.5	15.8
CADMIUM	NA	0.15 U	0.15 U	0.92 J	0.13 J
CALCIUM	NA	3610	6790	6820	6840
CHROMIUM	NA	1.1 J	0.88 J	0.84 J	0.94 J
COBALT	NA	0.66 U	0.051 U	7.2	7.4
COPPER	NA	1 U	1.2 J	2.8	3.1
MAGNESIUM	NA	1430	969	2220	2280
MANGANESE	NA	22.4	10.1	106	107
NICKEL	NA	4.6	1.8	10.7	11
POTASSIUM	NA	808	1160	1510	1550
SODIUM	NA	7080	6430	11400	11700
VANADIUM	NA	1 U	1 J	1 U	1 J
ZINC	NA	2.4	2	10.6	14.2

Detected concentrations are presented in bold font. Concentrations exceeding the USEPA VISL are shaded yellow.

Footnotes:
1 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 1 for noncarcinogens (N) and an attenuation factor of 0.001.

Definitions:
C = Carcinogen
NA = Not applicable/not available

Qualifiers:
J = Estimated value.
U = Non-detected value.

TABLE A-2.3
SUMMARY OF DETECTIONS - DRUM REMOVAL AREA - INTERMEDIATE WELLS - COMPARISON TO VAPOR INTRUSION CRITERIA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION			MW03-15I	MW03-16I		MW03-17I
SAMPLE ID			MW03-15I-NWG-092914	MW03-16I-NWG-102814	MW03-16I-NWG-102814-D	MW03-17I-NWG-100214
SAMPLE DATE	EPA VISL		20140929	20141028	20141028	20141002
SACODE	(ug/L)		NORMAL	ORIGINAL	DUPLICATE	NORMAL
TOP DEPTH			45	45	45	45
BOTTOM DEPTH			55	55	55	55
VOLATILES (UG/L)						
1,1,2,2-TETRACHLOROETHANE	3.2	C	0.5 U	**65**	NA	0.5 U
1,1,2-TRICHLOROETHANE	0.62	N	1 U	**5.6**	NA	1 U
CIS-1,2-DICHLOROETHENE	NA		0.5 U	**100**	NA	0.5 U
TRANS-1,2-DICHLOROETHENE	NA		1 U	**44**	NA	1 U
TRICHLOROETHENE	0.52	N	0.5 U	**170**	NA	**4.9**
VINYL CHLORIDE	0.15	C	0.5 U	**2.4**	NA	0.5 U
METALS (UG/L)						
ALUMINUM	NA		**88.2**	**26.6**	NA	**21**
ANTIMONY	NA		**0.53 J**	**0.35 J**	NA	**0.22 J**
BARIUM	NA		**18**	**15.5**	NA	**10.8**
CADMIUM	NA		**0.29 J**	0.15 U	NA	0.15 U
CALCIUM	NA		**8290**	**9590**	NA	**7390**
CHROMIUM	NA		**1.4 J**	0.25 U	NA	**1.2 J**
COBALT	NA		**16.7**	**7.2**	NA	**11.4**
COPPER	NA		0.68 U	**0.29 J**	NA	0.38 U
IRON	NA		**6030 J**	**10800**	NA	**1500**
MAGNESIUM	NA		**2810**	**3700**	NA	**2380**
MANGANESE	NA		**134**	**373**	NA	**40.3**
NICKEL	NA		**25.3**	**16.8**	NA	**19.7**
POTASSIUM	NA		**1530**	**1670**	NA	**1510**
SODIUM	NA		**22300**	**16300**	NA	**18600**
VANADIUM	NA		1 U	1 U	NA	**0.63 J**
ZINC	NA		**48**	**60.5 J**	NA	**22.1**
DISSOLVED METALS (UG/L)						
ANTIMONY	NA		0.2 U	**0.32 J**	NA	0.2 U
BARIUM	NA		**18.7**	**15.6**	NA	**10.9**
CALCIUM	NA		**8380**	**9880**	NA	**7520**
CHROMIUM	NA		**1 J**	0.25 U	NA	**0.83 J**
COBALT	NA		**17.2**	**7.4**	NA	**11.4**
COPPER	NA		1.1 U	**0.85 J**	NA	**0.74 J**
IRON	NA		**6350 J**	**10900**	NA	**1490**
MAGNESIUM	NA		**2830**	**3770**	NA	**2420**
MANGANESE	NA		**147**	**377**	NA	**40**
NICKEL	NA		**25.5**	**17.2**	NA	**20.3**
POTASSIUM	NA		**1540**	**1750**	NA	**1560**
SODIUM	NA		**22200**	**16800**	NA	**19000**
ZINC	NA		**48.8**	**85.7 J**	NA	**21.1**
PETROLEUM HYDROCARBONS (UG/L)						
GASOLINE RANGE ORGANICS	NA		20 U	**130 R**	NA	20 U

Detected concentrations are presented in bold font. Concentrations exceeding the USEPA VISL are shaded yellow.

Footnotes:

1 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 1 for noncarcinogens (N) and an attenuation factor of 0.001.

Definitions:

C = Carcinogen
NA = Not applicable/not available

Qualifiers:

J = Estimated value.
R = Rejected result.
U = Non-detected value.

TABLE A-2.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - EXISTING WELLS - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Sites 02/03	**VOLATILES**														
	110-82-7	Cyclohexane	10	10	ug/L	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/14	1 - 1	10	ND	100 N	NA	NA	No	BSL
	98-82-8	Isopropylbenzene	14	14	ug/L	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/14	0.5 - 0.5	14	ND	89 N	NA	NA	No	BSL
	108-87-2	Methyl Cyclohexane	8	8	ug/L	MW02-10S-NWG-101014, MW02-10S-NWG-101014-D	1/14	1 - 1	8	ND	NA	NA	NA	No	NTX
	75-69-4	Trichlorofluoromethane	0.67 J	0.88 J	ug/L	MW02-03S-NWG-111914-D	1/14	1 - 1	0.88	ND	18 N	NA	NA	No	BSL
	POLYCYCLIC AROMATIC HYDROCARBONS														
	91-20-3	Naphthalene	2.6	2.8	ug/L	MW02-10S-NWG-101014-D	1/14	0.1 - 0.1	2.8	ND	4.6 C	NA	NA	No	BSL
	METALS														
	7429-90-5	Aluminum	24.2	202	ug/L	MW02-03S-NWG-100314	8/14	8.5 - 17	202	22 - 22	NA	NA	NA	No	NTX
	7440-36-0	Antimony	0.2 J	0.41 J	ug/L	MW02-05S-NWG-100214	6/14	0.2 - 0.2	0.41	0.28 - 0.28	NA	NA	NA	No	NTX
	7440-39-3	Barium	2 J	76.8	ug/L	MW03-01SA-NWG-102914	11/14	7.1 - 9	76.8	5.1 - 10.5	NA	NA	NA	No	NTX
	7440-43-9	Cadmium	0.09 J	0.49 J	ug/L	MW03-05S-NWG-100114	9/14	0.15 - 0.32	0.49	0.091 - 0.091	NA	NA	NA	No	NTX
	7440-70-2	Calcium	3230	34300	ug/L	MW02-03S-NWG-100314	14/14	---	34300	4380 - 7810	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.24 J	2.9	ug/L	MW02-10S-NWG-101014	13/14	0.25 - 0.25	2.9	0.91 - 1.2	NA	NA	NA	No	NTX
	7440-48-4	Cobalt	0.56 J	0.93	ug/L	MW03-01SA-NWG-102914	2/14	0.029 - 1.2	0.93	0.56 - 0.56	NA	NA	NA	No	NTX
	7440-50-8	Copper	0.28 J	1.2 J	ug/L	MW03-03Sa-NWG-103014	8/14	0.24 - 0.71	1.2	0.51 - 0.51	NA	NA	NA	No	NTX
	7439-89-6	Iron	14.5 J	1050	ug/L	MW02-10S-NWG-101014-D	5/14	20 - 98.3	1050	32.5 - 32.5	NA	NA	NA	No	NTX
	7439-95-4	Magnesium	760	6110	ug/L	MW03-01SA-NWG-102914	14/14	---	6110	1430 - 2110	NA	NA	NA	No	NUT
	7439-96-5	Manganese	1.4 J	357	ug/L	MW02-10S-NWG-101014-D	14/14	---	357	3.9 - 24.1	NA	NA	NA	No	NTX
	7440-02-0	Nickel	0.39 J	12.5	ug/L	MW03-05S-NWG-100114	11/14	0.2 - 0.27	12.5	1.6 - 4.1	NA	NA	NA	No	NTX

TABLE A-2.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - EXISTING WELLS - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Sites 02/03	METALS (CONTINUED)														
	7440-09-7	Potassium	614	2730	ug/L	MW03-01SA-NWG-102914, MW03-01SA-NWG-102914-D	14/14	---	2730	822 - 1590	NA	NA	NA	No	NUT
	7782-49-2	Selenium	0.15 J	0.41 J	ug/L	MW02-03S-NWG-100314	6/14	0.25 - 0.25	0.41	0.37 - 0.37	NA	NA	NA	No	NTX
	7440-23-5	Sodium	4020	61800	ug/L	MW03-01SA-NWG-102914	14/14	---	61800	6420 - 27000	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	0.65 J	1.3 J	ug/L	MW02-04Sa-NWG-100614	3/14	1 - 1	1.3	ND	NA	NA	NA	No	NTX
	7440-66-6	Zinc	0.82 J	58.8	ug/L	MW02-10S-NWG-101014-D	10/14	1 - 7.2	58.8	ND	NA	NA	NA	No	NTX
	DISSOLVED METALS							-							
	7429-90-5	Aluminum	28.2	184	ug/L	MW02-03S-NWG-100314	4/14	3.3 - 16.7	184	22.1 - 22.1	NA	NA	NA	No	NTX
	7440-36-0	Antimony	0.21 J	0.3 J	ug/L	MW02-06Sa-NWG-102914	6/14	0.2 - 0.2	0.3	0.4 - 0.4	NA	NA	NA	No	NTX
	7440-39-3	Barium	2 J	76.9	ug/L	MW03-01SA-NWG-102914-D	11/14	6.2 - 8.7	76.9	5 - 10.1	NA	NA	NA	No	NTX
	7440-43-9	Cadmium	0.088 J	2.3	ug/L	MW03-04S-NWG-093014	9/14	0.15 - 0.27	2.3	0.088 - 0.088	NA	NA	NA	No	NTX
	7440-70-2	Calcium	3100	32800	ug/L	MW02-03S-NWG-100314	14/14	---	32800	4330 - 7480	NA	NA		No	NUT
	7440-47-3	Chromium	0.33 J	1.4 J	ug/L	MW02-04Sa-NWG-100614	13/14	0.25 - 0.25	1.4	0.83 - 0.89	NA	NA	NA	No	NTX
	7440-48-4	Cobalt	0.64	0.65	ug/L	MW03-01SA-NWG-102914	1/14	0.025 - 1.3	0.65	0.52 - 0.52	NA	NA	NA	No	NTX
	7440-50-8	Copper	0.27 J	2.2	ug/L	MW02-08Sa-NWG-100114	11/14	0.74 - 1.1	2.2	0.58 - 1.2	NA	NA	NA	No	NTX
	7439-89-6	Iron	37.6 J	1580	ug/L	MW02-10S-NWG-101014	4/14	20 - 20	1580	16.6 - 150	NA	NA	NA	No	NTX
	7439-92-1	Lead	0.55 J	2.7	ug/L	MW02-09S-NWG-100814	2/14	0.077 - 0.3	2.7	ND	NA	NA	NA	No	NTX
	7439-95-4	Magnesium	706	6580	ug/L	MW03-01SA-NWG-102914-D	14/14	---	6580	1400 - 2030	NA	NA		No	NUT
	7439-96-5	Manganese	2.6	501	ug/L	MW02-10S-NWG-101014	14/14	---	501	4.2 - 22.5	NA	NA	NA	No	NTX
	7440-02-0	Nickel	1	10.6	ug/L	MW03-05S-NWG-100114	12/14	0.9 - 0.94	10.6	0.83 - 4.4	NA	NA	NA	No	NTX
	7440-09-7	Potassium	626	2900	ug/L	MW03-01SA-NWG-102914-D	14/14	---	2900	831 - 1540	NA	NA		No	NUT

TABLE A-2.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - EXISTING WELLS - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Sites 02/03	DISSOLVED METALS (CONTINUED)							-							
	7782-49-2	Selenium	0.23 J	0.34 J	ug/L	MW02-03S-NWG-100314	5/14	0.25 - 0.25	0.34	0.36 - 0.36	NA	NA	NA	No	NTX
	7440-23-5	Sodium	3940	63200	ug/L	MW03-01SA-NWG-102914-D	14/14	---	63200	6330 - 25900	NA	NA		No	NUT
	7440-62-2	Vanadium	0.64 J	0.94 J	ug/L	MW02-11S-NWG-100814	4/14	1 - 1	0.94	ND	NA	NA	NA	No	NTX
	7440-66-6	Zinc	1.4 J	51.7	ug/L	MW02-10S-NWG-101014	14/14	---	51.7	1.4 - 22.4	NA	NA	NA	No	NTX
	PETROLEUM HYDROCARBONS							-							
	--	TPH (C09-C40)	0.64	0.68	mg/L	MW02-10S-NWG-101014	1/14	0.05 - 0.05	0.68	ND	NA	NA	NA	No	NTX
	PETROLEUM HYDROCARBONS							-							
	--	Gasoline Range Organics	1300	1400	ug/L	MW02-10S-NWG-101014-D	1/14	20 - 20	1400	ND	NA	NA	NA	No	NTX

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - The range of concentrations from wells MW01-10S, MW01-13S, and MW01-14S is presented.
5 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 0.1 for noncarcinogens (N) and an attenuation factor of 0.001.
6 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Associated Samples
MW01-10S-NWG-100214
MW01-12S-NWG-100214
MW01-13Sa-NWG-102714
MW01-14S-NWG-100914
MW02-03S-NWG-100314
MW02-03S-NWG-111914
MW02-03S-NWG-111914-D
MW02-04Sa-NWG-100614
MW02-05S-NWG-100214
MW02-06Sa-NWG-102914
MW02-08Sa-NWG-100114
MW02-09S-NWG-100814
MW02-10S-NWG-101014
MW02-10S-NWG-101014-D
MW02-11S-NWG-100814
MW03-01SA-NWG-102914
MW03-01SA-NWG-102914-D
MW03-02S-NWG-092914
MW03-03Sa-NWG-103014
MW03-04S-NWG-093014
MW03-05S-NWG-100114

Definitions:
ARAR/TBC = Applicable or Relevant and Appropriate Requirements To Be Considered
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

TABLE A-2.6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - SHALLOW GROUNDWATER - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Drum Removal Area	VOLATILES														
	156-59-2	cis-1,2-Dichloroethene	1.3	1.3	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	1/3	0.5 - 0.5	1.3	NA	NA	NA	NA	No	NTX
	79-01-6	Trichloroethene	1.1	3.7	ug/L	MW03-17S-NWG-093014-D	3/3	-	3.7	NA	0.52 N	NA	NA	Yes	ASL
	METALS														
	7429-90-5	Aluminum	23.3	37.6	ug/L	MW03-17S-NWG-093014-D	2/3	17.8 - 17.8	37.6	NA	NA	NA	NA	No	NTX
	7440-36-0	Antimony	0.21 J	0.21 J	ug/L	MW03-17S-NWG-093014-D	1/3	0.2 - 0.2	0.21	NA	NA	NA	NA	No	NTX
	7440-39-3	Barium	8.6 J	15.6	ug/L	MW03-17S-NWG-093014-D	2/3	5.2 - 5.2	15.6	NA	NA	NA	NA	No	NTX
	7440-43-9	Cadmium	0.12 J	0.7 J	ug/L	MW03-15S-NWG-100114	2/3	0.15 - 0.15	0.7	NA	NA	NA	NA	No	NTX
	7440-70-2	Calcium	3490	7140	ug/L	MW03-16S-NWG-100614	3/3	-	7140	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.81 J	1 J	ug/L	MW03-17S-NWG-093014-D	3/3	-	1	NA	NA	NA	NA	No	NTX
	7440-48-4	Cobalt	7.3	7.3	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	1/3	0.034 - 0.64	7.3	NA	NA	NA	NA	No	NTX
	7440-50-8	Copper	1.5 J	1.9 J	ug/L	MW03-17S-NWG-093014-D	1/3	0.38 - 0.46	1.9	NA	NA	NA	NA	No	NTX
	7439-95-4	Magnesium	1010	2240	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	3/3	-	2240	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	10.6	110	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	3/3	-	110	NA	NA	NA	NA	No	NTX
	7440-02-0	Nickel	0.95 J	10.5	ug/L	MW03-17S-NWG-093014	3/3	-	10.5	NA	NA	NA	NA	No	NTX
	7440-09-7	Potassium	772	1490	ug/L	MW03-17S-NWG-093014-D	3/3	-	1490	NA	NA	NA	NA	No	NUT

TABLE A-2.6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - SHALLOW GROUNDWATER - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Drum Removal Area	**METALS (CONTINUED)**														
	7440-23-5	Sodium	6690	11400	ug/L	MW03-17S-NWG-093014-D	3/3	-	11400	NA	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	0.77 J	0.84 J	ug/L	MW03-15S-NWG-100114, MW03-16S-NWG-100614	3/3	1 - 1	0.84	NA	NA	NA	NA	No	NTX
	7440-66-6	Zinc	1.2 J	11.2	ug/L	MW03-17S-NWG-093014	3/3	-	11.2	NA	NA	NA	NA	No	NTX
	DISSOLVED METALS														
	7429-90-5	Aluminum	33.6	35	ug/L	MW03-17S-NWG-093014-D	1/3	15.2 - 20.7	35	NA	NA	NA	NA	No	NTX
	7440-36-0	Antimony	0.21 J	0.21 J	ug/L	MW03-17S-NWG-093014-D	1/3	0.2 - 0.2	0.21	NA	NA	NA	NA	No	NTX
	7440-39-3	Barium	8.2 J	15.8	ug/L	MW03-17S-NWG-093014-D	2/3	5.4 - 5.4	15.8	NA	NA	NA	NA	No	NTX
	7440-43-9	Cadmium	0.13 J	0.92 J	ug/L	MW03-17S-NWG-093014	1/3	0.15 - 0.15	0.92	NA	NA	NA	NA	No	NTX
	7440-70-2	Calcium	3610	6840	ug/L	MW03-17S-NWG-093014-D	3/3	-	6840	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.84 J	1.1 J	ug/L	MW03-15S-NWG-100114	3/3	-	1.1	NA	NA	NA	NA	No	NTX
	7440-48-4	Cobalt	7.2	7.4	ug/L	MW03-17S-NWG-093014-D	1/3	0.051 - 0.66	7.4	NA	NA	NA	NA	No	NTX
	7440-50-8	Copper	1.2 J	3.1	ug/L	MW03-17S-NWG-093014-D	2/3	1 - 1	3.1	NA	NA	NA	NA	No	NTX
	7439-95-4	Magnesium	969	2280	ug/L	MW03-17S-NWG-093014-D	3/3	-	2280	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	10.1	107	ug/L	MW03-17S-NWG-093014-D	3/3	-	107	NA	NA	NA	NA	No	NTX
	7440-02-0	Nickel	1.8	11	ug/L	MW03-17S-NWG-093014-D	3/3	-	11	NA	NA	NA	NA	No	NTX
	7440-09-7	Potassium	808	1550	ug/L	MW03-17S-NWG-093014-D	3/3	-	1550	NA	NA	NA	NA	No	NUT
	7440-23-5	Sodium	6430	11700	ug/L	MW03-17S-NWG-093014-D	3/3	-	11700	NA	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	1 J	1 J	ug/L	MW03-16S-NWG-100614, MW03-17S-NWG-093014-D	2/3	1 - 1	1	NA	NA	NA	NA	No	NTX
	7440-66-6	Zinc	2	14.2	ug/L	MW03-17S-NWG-093014-D	3/3	-	14.2	NA	NA	NA	NA	No	NTX

TABLE A-2.6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - SHALLOW GROUNDWATER - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - No background data are available for Drum Removal Area groundwater.
5 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 0.1 for noncarcinogens (N) and an attenuation factor of 0.001.
6 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Associated Samples:
MW03-15S-NWG-100114
MW03-16S-NWG-100614
MW03-17S-NWG-093014
MW03-17S-NWG-093014-D

Definitions:
ARAR/TBC = Applicable or Relevant and Appropriate Requirements To Be Considered
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

TABLE A-2.6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - INTERMEDIATE GROUNDWATER - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Intermediate Groundwater
Exposure Medium: Intermediate Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Drum Removal Area	VOLATILES														
	79-34-5	1,1,2,2-Tetrachloroethane	65	65	ug/L	MW03-16I-NWG-102814	1/3	0.5 - 0.5	65	NA	3.2 C	NA	NA	Yes	ASL
	79-00-5	1,1,2-Trichloroethane	5.6	5.6	ug/L	MW03-16I-NWG-102814	1/3	1 - 1	5.6	NA	0.62 N	NA	NA	Yes	ASL
	156-59-2	cis-1,2-Dichloroethene	100	100	ug/L	MW03-16I-NWG-102814	1/3	0.5 - 0.5	100	NA	NA	NA	NA	No	NTX
	156-60-5	trans-1,2-Dichloroethene	44	44	ug/L	MW03-16I-NWG-102814	1/3	1 - 1	44	NA	NA	NA	NA	No	NTX
	79-01-6	Trichloroethene	4.9	170	ug/L	MW03-16I-NWG-102814	2/3	0.5 - 0.5	170	NA	0.52 N	NA	NA	Yes	ASL
	75-01-4	Vinyl Chloride	2.4	2.4	ug/L	MW03-16I-NWG-102814	1/3	0.5 - 0.5	2.4	NA	0.15 C	NA	NA	Yes	ASL
	METALS														
	7429-90-5	Aluminum	21	88.2	ug/L	MW03-15I-NWG-092914	3/3	-	88.2	NA	NA	NA	NA	No	NTX
	7440-36-0	Antimony	0.22 J	0.53 J	ug/L	MW03-15I-NWG-092914	3/3	-	0.53	NA	NA	NA	NA	No	NTX
	7440-39-3	Barium	10.8	18	ug/L	MW03-15I-NWG-092914	3/3	-	18	NA	NA	NA	NA	No	NTX
	7440-43-9	Cadmium	0.29 J	0.29 J	ug/L	MW03-15I-NWG-092914	1/3	0.15 - 0.15	0.29	NA	NA	NA	NA	No	NTX
	7440-70-2	Calcium	7390	9590	ug/L	MW03-16I-NWG-102814	3/3	-	9590	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	1.2 J	1.4 J	ug/L	MW03-15I-NWG-092914	2/3	0.25 - 0.25	1.4	NA	NA	NA	NA	No	NTX
	7440-48-4	Cobalt	7.2	16.7	ug/L	MW03-15I-NWG-092914	3/3	-	16.7	NA	NA	NA	NA	No	NTX
	7440-50-8	Copper	0.29 J	0.29 J	ug/L	MW03-16I-NWG-102814	1/3	0.38 - 0.68	0.29	NA	NA	NA	NA	No	NTX
	7439-89-6	Iron	1500	10800	ug/L	MW03-16I-NWG-102814	3/3	-	10800	NA	NA	NA	NA	No	NTX
	7439-95-4	Magnesium	2380	3700	ug/L	MW03-16I-NWG-102814	3/3	-	3700	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	40.3	373	ug/L	MW03-16I-NWG-102814	3/3	-	373	NA	NA	NA	NA	No	NTX
	7440-02-0	Nickel	16.8	25.3	ug/L	MW03-15I-NWG-092914	3/3	-	25.3	NA	NA	NA	NA	No	NTX
	7440-09-7	Potassium	1510	1670	ug/L	MW03-16I-NWG-102814	3/3	-	1670	NA	NA	NA	NA	No	NUT

TABLE A-2.6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - INTERMEDIATE GROUNDWATER - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Intermediate Groundwater
Exposure Medium: Intermediate Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Drum Removal Area	METALS														
	7440-23-5	Sodium	16300	22300	ug/L	MW03-15I-NWG-092914	3/3	-	22300	NA	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	0.63 J	0.63 J	ug/L	MW03-17I-NWG-100214	1/3	1 - 1	0.63	NA	NA	NA	NA	No	NTX
	7440-66-6	Zinc	22.1	60.5 J	ug/L	MW03-16I-NWG-102814	3/3	-	60.5	NA	NA	NA	NA	No	NTX
	DISSOLVED METALS														
	7440-36-0	Antimony	0.32 J	0.32 J	ug/L	MW03-16I-NWG-102814	1/3	0.2 - 0.2	0.32	NA	NA	NA	NA	No	NTX
	7440-39-3	Barium	10.9	18.7	ug/L	MW03-15I-NWG-092914	3/3	-	18.7	NA	NA	NA	NA	No	NTX
	7440-70-2	Calcium	7520	9880	ug/L	MW03-16I-NWG-102814	3/3	-	9880	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.83 J	1 J	ug/L	MW03-15I-NWG-092914	2/3	0.25 - 0.25	1	NA	NA	NA	NA	No	NTX
	7440-48-4	Cobalt	7.4	17.2	ug/L	MW03-15I-NWG-092914	3/3	-	17.2	NA	NA	NA	NA	No	NTX
	7440-50-8	Copper	0.74 J	0.85 J	ug/L	MW03-16I-NWG-102814	2/3	1.1 - 1.1	0.85	NA	NA	NA	NA	No	NTX
	7439-89-6	Iron	1490	10900	ug/L	MW03-16I-NWG-102814	3/3	-	10900	NA	NA	NA	NA	No	NTX
	7439-95-4	Magnesium	2420	3770	ug/L	MW03-16I-NWG-102814	3/3	-	3770	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	40	377	ug/L	MW03-16I-NWG-102814	3/3	-	377	NA	NA	NA	NA	No	NTX
	7440-02-0	Nickel	17.2	25.5	ug/L	MW03-15I-NWG-092914	3/3	-	25.5	NA	NA	NA	NA	No	NTX
	7440-09-7	Potassium	1540	1750	ug/L	MW03-16I-NWG-102814	3/3	-	1750	NA	NA	NA	NA	No	NUT
	7440-23-5	Sodium	16800	22200	ug/L	MW03-15I-NWG-092914	3/3	-	22200	NA	NA	NA	NA	No	NUT
	7440-66-6	Zinc	21.1	85.7 J	ug/L	MW03-16I-NWG-102814	3/3	-	85.7	NA	NA	NA	NA	No	NTX

TABLE A-2.6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - INTERMEDIATE GROUNDWATER - VAPOR INTRUSION
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Intermediate Groundwater
Exposure Medium: Intermediate Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	EPA Residential VISL[5]	Potential ARAR/TBC	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection[6]

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - No background data are available for Drum Removal Area groundwater.
5 - Calculated using USEPA's Vapor Intrusion Screening Level (VISL) calculator Version 3.3, May 2014 RSLs. Values correspond to a target cancer risk level of 1E-06 for carcinogens (C) or hazard quotient (HQ) of 0.1 for noncarcinogens (N) and an attenuation factor of 0.001.
6 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Associated Samples:
MW03-15I-NWG-092914
MW03-16I-NWG-102814
MW03-16I-NWG-102814-D
MW03-17I-NWG-100214

Definitions:
ARAR/TBC = Applicable or Relevant and Appropriate Requirements To Be Considered
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

TABLE A-2.7

SUMMARY OF CANCER RISKS AND HAZARD INDICES FROM VAPOR INTRUSION - DRUM REMOVAL AREA - SHALLOW WELLS
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	Groundwater Concentration (ug/L)	Cancer Risk		Hazard Indices		Target Organ
		Industrial	Residential	Industrial	Residential	
Trichloroethene	3.7	5.0E-07	3.1E-06	0.17	0.71	Cardiovascular System, Fetotoxicity, Immune
Total		5E-07	3E-06	0.2	0.7	

TABLE A-2.8

SUMMARY OF CANCER RISKS AND HAZARD INDICES FROM VAPOR INTRUSION - DRUM REMOVAL AREA - INTERMEDIATE WELLS
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical	Groundwater Concentration (ug/L)	Cancer Risk		Hazard Indices		Target Organ
		Industrial	Residential	Industrial	Residential	
1,1,2,2-Tetrachloroethane	65	4.6E-06	2.0E-05	NA	NA	NA
1,1,2-Trichloroethane	5.6	2.5E-07	1.1E-06	0.22	0.90	Whole Body
Trichloroethene	170	2.3E-05	1.4E-04	7.8	33	Cardiovascular System, Fetotoxicity, Immune
Vinyl Chloride	2.4	9.8E-07	1.6E-05	0.0062	0.026	Liver
Total		3E-05	2E-04	8.0	34	

Total Organ HIs

Total Cardiovascular System HI =	7.8	33
Total Fetotoxicity HI =	7.8	33
Total Immune HI =	7.8	33
Total Liver HI =	0.0062	0.026
Total Whole Body HI =	0.22	0.90

NA = Not applicable/not available

Vapor Intrusion Screening Level Calculator Risk Calculation Files

OSWER VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.3, May 2014 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (°C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

	CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR ($(ug/m^3)^{-1}$)	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
x	79-01-6	Trichloroethylene	3.7E+00	1.49E+00	5.0E-07	1.7E-01	see note	I	2.00E-03	I	TCE

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Averaging time for carcinogens	(yrs)	ATc_R_GW	70	ATc_C_GW	70	ATc_GW	70
Averaging time for non-carcinogens	(yrs)	ATnc_R_GW	26	ATnc_C_GW	25	Atnc_GW	25
Exposure duration	(yrs)	ED_R_GW	26	ED_C_GW	25	ED_GW	25
Exposure frequency	(days/yr)	EF_R_GW	350	EF_C_GW	250	EF_GW	250
Exposure time	(hr/day)	ET_R_GW	24	ET_C_GW	8	ET_GW	8

(2) **Generic Attenuation Factors:**

Source Medium of Vapors	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Groundwater (-)	AFgw_R_GW	0.001	AFgw_C_GW	0.001	AFgw_GW	0.001
Sub-Slab and Exterior Soil Gas (-)	AFss_R_GW	0.1	AFss_C_GW	0.1	AFss_GW	0.1

(3) **Formulas**

Cia, target = MIN(Cia,c; Cia,nc)
Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)
Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

Trichloroethylene

	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
mIURTCE_R_GW		1.00E-06	mIURTCE_C_GW	0.00E+00	mIURTCE_GW	0.00E+00
IURTCE_R_GW		3.10E-06	IURTCE_C_GW	4.10E-06	IURTCE_GW	4.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 25 This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:
I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml
S = See RSL User Guide, Section 5
X = PPRTV Appendix
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).

OSWER VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.3, May 2014 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (°C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

	CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ
x	79-01-6	Trichloroethylene	3.7E+00	1.49E+00	**3.1E-06**	7.1E-01

Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
see note	I	2.00E-03	I	TCE

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Averaging time for carcinogens	(yrs)	ATc_R_GW	70	ATc_C_GW	70	ATc_GW	70
Averaging time for non-carcinogens	(yrs)	ATnc_R_GW	26	ATnc_C_GW	25	Atnc_GW	26
Exposure duration	(yrs)	ED_R_GW	26	ED_C_GW	25	ED_GW	26
Exposure frequency	(days/yr)	EF_R_GW	350	EF_C_GW	250	EF_GW	350
Exposure time	(hr/day)	ET_R_GW	24	ET_C_GW	8	ET_GW	24

(2) **Generic Attenuation Factors:**

Source Medium of Vapors	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Groundwater (-)	AFgw_R_GW	0.001	AFgw_C_GW	0.001	AFgw_GW	0.001
Sub-Slab and Exterior Soil Gas (-)	AFss_R_GW	0.1	AFss_C_GW	0.1	AFss_GW	0.1

(3) **Formulas**

Cia, target = MIN(Cia,c; Cia,nc)
Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)
Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

Trichloroethylene

	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
	mIURTCE_R_GW	1.00E-06	mIURTCE_C_GW	0.00E+00	mIURTCE_GW	1.00E-06
	IURTCE_R_GW	3.10E-06	IURTCE_C_GW	4.10E-06	IURTCE_GW	3.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 72 This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:

I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml
S = See RSL User Guide, Section 5
X = PPRTV Appendix
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).

OSWER VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.3, May 2014 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (°C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

	CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m³)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m³)⁻¹	IUR Source*	Reference Concentration RfC (mg/m³)	RFC Source*	Mutagenic Indicator I
x	79-34-5	Tetrachloroethane, 1,1,2,2-	6.5E+01	9.75E-01	4.8E-06	No RfC	5.80E-05	CA			
x	79-00-5	Trichloroethane, 1,1,2-	5.6E+00	1.89E-01	2.5E-07	2.2E-01	1.60E-05	I	2.00E-04	X	
x	79-01-6	Trichloroethylene	1.7E+02	6.84E+01	2.3E-05	7.8E+00	see note	I	2.00E-03	I	TCE
x	75-01-4	Vinyl Chloride	2.4E+00	2.73E+00	9.8E-07	6.2E-03	4.40E-06	I	1.00E-01	I	VC

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Averaging time for carcinogens	(yrs)	ATc_R_GW	70	ATc_C_GW	70	ATc_GW	70
Averaging time for non-carcinogens	(yrs)	ATnc_R_GW	25	ATnc_C_GW	25	Atnc_GW	25
Exposure duration	(yrs)	ED_R_GW	26	ED_C_GW	25	ED_GW	25
Exposure frequency	(days/yr)	EF_R_GW	350	EF_C_GW	250	EF_GW	250
Exposure time	(hr/day)	ET_R_GW	24	ET_C_GW	8	ET_GW	8

(2) **Generic Attenuation Factors:**

Source Medium of Vapors		Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Groundwater	(-)	AFgw_R_GW	0.001	AFgw_C_GW	0.001	AFgw_GW	0.001
Sub-Slab and Exterior Soil Gas	(-)	AFss_R_GW	0.1	AFss_C_GW	0.1	AFss_GW	0.1

(3) **Formulas**

Cia, target = MIN(Cia,c; Cia,nc)

Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)

Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

Trichloroethylene

Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
mIURTCE_R_GW	1.00E-06	mIURTCE_C_GW	0.00E+00	mIURTCE_GW	0.00E+00
IURTCE_R_GW	3.10E-06	IURTCE_C_GW	4.10E-06	IURTCE_GW	4.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 25 — This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:

I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
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S = See RSL User Guide, Section 5
X = PPRTV Appendix
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VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
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Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).

OSWER VAPOR INTRUSION ASSESSMENT
Groundwater Concentration to Indoor Air Concentration (GWC-IAC) Calculator Version 3.3, May 2014 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)
Average Groundwater Temperature (°C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

	CAS	Chemical Name	Site Groundwater Concentration Cgw (ug/L)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR ($ug/m^3)^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RfC Source*	Mutagenic Indicator I
x	79-34-5	Tetrachloroethane, 1,1,2,2-	6.5E+01	9.75E-01	2.0E-05	No RfC	5.80E-05	CA			
x	79-00-5	Trichloroethane, 1,1,2-	5.6E+00	1.89E-01	1.1E-06	9.0E-01	1.60E-05	I	2.00E-04	X	
x	79-01-6	Trichloroethylene	1.7E+02	6.84E+01	1.4E-04	3.3E+01	see note	I	2.00E-03	I	TCE
x	75-01-4	Vinyl Chloride	2.4E+00	2.73E+00	1.6E-05	2.6E-02	4.40E-06	I	1.00E-01	I	VC

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Averaging time for carcinogens	(yrs)	ATc_R_GW	70	ATc_C_GW	70	ATc_GW	70
Averaging time for non-carcinogens	(yrs)	ATnc_R_GW	26	ATnc_C_GW	25	Atnc_GW	26
Exposure duration	(yrs)	ED_R_GW	26	ED_C_GW	25	ED_GW	26
Exposure frequency	(days/yr)	EF_R_GW	350	EF_C_GW	250	EF_GW	350
Exposure time	(hr/day)	ET_R_GW	24	ET_C_GW	8	ET_GW	24

(2) **Generic Attenuation Factors:**

Source Medium of Vapors		Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Groundwater	(-)	AFgw_R_GW	0.001	AFgw_C_GW	0.001	AFgw_GW	0.001
Sub-Slab and Exterior Soil Gas	(-)	AFss_R_GW	0.1	AFss_C_GW	0.1	AFss_GW	0.1

(3) **Formulas**

Cia, target = MIN(Cia,c; Cia,nc)

Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)

Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

Trichloroethylene	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
	mIURTCE_R_GW	1.00E-06	mIURTCE_C_GW	0.00E+00	mIURTCE_GW	1.00E-06
	IURTCE_R_GW	3.10E-06	IURTCE_C_GW	4.10E-06	IURTCE_GW	3.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 72 — This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:

I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml
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Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).

ATTACHMENT A-3

CHARACTERIZATION OF GROUNDWATER AND SOILS AT CED AREA DRUM REMOVAL AREA

ATTACHMENT A-3

CHARACTERIZATION OF GROUNDWATER AND SOILS AT CED AREA DRUM REMOVAL AREA CONSTRUCTION EQUIPMENT DEPARTMENT AREA FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

1.0 Introduction

This human health risk assessment (HHRA) for the Construction Equipment Department (CED) Area Drum Removal Area evaluates risks to potential human receptors exposed through direct contact (i.e., incidental ingestion, dermal contact, and inhalation) with soil and groundwater under current and hypothetical future land use scenarios. The Drum Removal Area is located in the northwestern corner of the CED Area (Figure 1-2 of the main report). In April 2013, the Quonset Development Corporation (QDC) discovered several drums while performing routine grading and bolder removal in this undeveloped portion of the CED Area. In June 2013, a geophysical survey was conducted to assess the extent of buried drums for removal consideration. In October 2013, the Navy removed nine drums and metallic debris from the area, and subsurface soil samples (2.5 to 4 feet below ground surface (bgs)] were collected from beneath the former location of the drums and the immediate vicinity. In September/October 2014, shallow (approximately 20 feet bgs) and intermediate (50 feet bgs) groundwater samples were collected from the CED Area Drum Removal Area monitoring wells. Soil and groundwater sampling locations for the Drum Removal Area are displayed on Figure A-3.1.

United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) or calculated risk-based concentrations (RBCs) incorporating site-specific exposure assumptions were used to develop risk estimates based on the risk-ratio approach demonstrated in Section 5. The risk-ratio approach is a simple, efficient approach that allows for the quick of assessment of a multiple data sets or scenarios.

All HHRAs consist of four components: selection of chemicals of potential concern (COPCs), exposure assessment, toxicity assessment, and risk characterization. Sections 2 through 5 contain detailed discussions of the four components of this HHRA.

2.0 Selection of COPCs

COPC selection was performed for each medium evaluated (Tables A-3.1 through A-3.4). COPCs were selected by comparing maximum site concentrations to applicable screening criteria. For soil, screening criteria were based on USEPA RSLs for residential soil (USEPA, 2015) and Rhode Island Department of Environmental Management (RIDEM) Direct Exposure Criteria (RIDEM, 2011). For groundwater, screening criteria were based on USEPA RSLs for tap water (USEPA, 2015), USEPA Maximum Contaminant Levels (MCLs) (USEPA, 2012), and RIDEM GA and GB Groundwater Objectives (RIDEM, 2011). COPCs were selected based on the lowest screening level derived from these criteria. The screening concentrations based on the RSLs correspond to a systemic hazard quotient (HQ) of 0.1 for noncarcinogens or an incremental lifetime cancer risk (ILCR) of $1x10^{-6}$ for carcinogens. The noncarcinogenic RSLs represent an HQ of 0.1 to account for the potential cumulative effects of several chemicals affecting the same target organ or producing the same adverse noncarcinogenic effect.

Soil results were additionally compared to generic federal risk-based soil screening levels (SSLs) for groundwater protection designed to be protective of groundwater at most sites (as published in the USEPA RSL table). These groundwater protection SSLs allow an initial qualitative evaluation of the potential for chemical migration from soil to groundwater. Chemicals with concentrations exceeding the SSLs may potentially migrate from the soil to groundwater in sufficient quantities to pose groundwater quality problems.

Screening criteria for trivalent chromium were used to evaluate total chromium data in the HHRA because historical site activities for the CED Area do not suggest that hexavalent chromium would be a significant contaminant at any sites in the investigation area.

No formal site-specific background data sets are available for the soil or groundwater samples from the CED Area Drum Removal Area. For soil, site concentrations were compared to NCBC Davisville background values for comparison purposes only; chemicals detected in soil were not eliminated from COPC selection on the basis of background comparisons. For groundwater at Sites 02/03, chemical concentrations detected in upgradient wells (MW01-10S, MW01-13S, and MW01-14S) were considered for use in eliminating chemicals from COPC selection; however, due to uncertainty associated with the upgradient concentrations because a formal background data set has not been approved, if any chemicals are eliminated from COPC selection due to upgradient concentrations, groundwater risks were calculated both 1) excluding chemicals detected at concentrations greater than screening levels but less than upgradient concentrations, and 2) including all chemicals detected at concentrations greater than screening levels. Uncertainty associated with the lack of a formal background data set for both soil and groundwater is further discussed in Section 6.

The following COPCs were selected for each medium (Tables A-3.1 through A-3.4):

- **Direct Contact with Subsurface Soil:**
    - Metals: aluminum, cobalt, iron, and manganese.

- **Migration from Subsurface Soil to Groundwater:**
    - Volatiles: cis-1,2-dichloroethene and trichloroethene.
    - PCBs: Aroclor-1260.
    - Metals: antimony, cobalt, iron, lead, manganese, selenium, and silver.
    - Miscellaneous parameters: cyanide.

- **Direct Contact with Shallow Groundwater:**
    - Volatiles: trichloroethene
    - Metals: cobalt and manganese

- **Direct Contact with Intermediate Groundwater:**
    - Volatiles: 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, and vinyl chloride
    - Metals: cobalt, iron, and manganese

The maximum detected arsenic concentration in soil exceeds the toxicity screening levels, but all arsenic concentrations were less than the RIDEM Method 1 Direct Exposure Criterion for arsenic of 7.0 mg/kg, which is based on the 95-percent upper confidence limit of natural background across the state (RIDEM, 2011). Consequently, arsenic was not selected as a COPC for soil.

The COPCs for direct contact are further evaluated in the risk ratio tables presented in Section 5. COPCs for migration from soil to groundwater are qualitatively evaluated in Section 5. Groundwater results were also screened against criteria for vapor intrusion as part of the vapor intrusion evaluation (Attachment A-2).

3.0 Exposure Assessment

Current and future anticipated land use at the CED Area is industrial/commercial. There are no plans for the future residential development of the CED Area; residential receptors were included primarily to support risk-management decisions. Receptors evaluated in this HHRA are current and future

construction workers, future industrial workers, future recreational users (child, adult, and lifelong) and hypothetical future residents (child, adult, and lifelong).

All receptors were evaluated for exposures to soil at the site. Construction workers, industrial workers, recreational users, and hypothetical residents may be exposed to COPCs in soil via direct contact (i.e., incidental ingestion, dermal contact, and inhalation of volatiles/fugitive dust). All of these receptors were evaluated for exposures to subsurface soil; however, the construction worker is the only receptor likely to contact subsurface soil as part of excavation activities. Industrial workers, recreational users, and hypothetical residents would only contact subsurface soil if future excavation activities brought subsurface soil to the surface. The evaluation of industrial worker, recreational user, and hypothetical resident contact with subsurface soil is included in this HHRA to support risk-management decisions.

Three receptors were also evaluated for exposures to groundwater at the site. Construction workers could potentially be exposed to groundwater if present in trenches during excavation activities via incidental ingestion, dermal contact, or inhalation of VOCs. In addition, the hypothetical future resident could potentially be exposed to contaminants in groundwater via ingestion, dermal contact, and inhalation (i.e., showering/bathing), and indoor air (vapor intrusion) (see Attachment A-2 for vapor intrusion evaluation). Industrial workers could also potentially be exposed via inhalation to VOCs migrating from groundwater into indoor air (vapor intrusion) (evaluated in Attachment A-2). Recreational users are not expected to contact groundwater at the site.

Industrial worker and residential exposures were evaluated using current USEPA RSLs (USEPA, 2015). The methodology USEPA used to calculate the RSLs is based on default USEPA exposure assumptions and presented in the User Guide accompanying the January 2015 RSL table. Exposure assumptions for industrial worker and residential receptors are summarized in Table A-4.1 (Attachment A-4). For residents, carcinogenic RSLs represent lifelong (child + adult) exposures and non-carcinogenic RSLs represent child exposures to evaluate the most conservative receptors.

To evaluate construction worker and recreational exposures, RBCs representing a 1E-06 cancer risk level and an HQ of 1 (i.e., the no-adverse-effect concentration) were developed for carcinogens and non-carcinogens, respectively. RBCs for construction worker and recreational user direct contact (incidental ingestion, dermal contact, and inhalation) exposures with soil were calculated using methodology similar to that used by USEPA to develop the RSLs. The methodology and exposure assumptions used to calculate RBCs for construction workers and recreational users are presented in Attachment A-5 of this report. Exposure assumptions for soil developed in the *Human Health Risk Evaluation for Construction Equipment Department, Former Naval Construction Battalion Center Davisville, North Kingston, Rhode Island* (Tetra Tech, 2014) were updated to reflect current guidance (e.g., USEPA, 2014) and used to

calculate RBCs for the CED Area Drum Removal Area. Exposure assumptions for groundwater are based on current USEPA guidance (e.g., USEPA, 2014). Exposure assumptions for construction workers and recreational users are also summarized in Table A-4.1 (Attachment A-4). RBCs were calculated for construction workers and child, adult, and lifelong recreational users exposed to soil and construction workers exposed to groundwater.

All available subsurface soil data, collected between 2.5 and 4 feet bgs, were evaluated as a single data set. Groundwater data collected from shallow (approximately 20 feet bgs) and intermediate (50 feet bgs) were evaluated separately due to differences in concentrations detected (generally, higher concentrations were noted in intermediate groundwater) as well as potential exposures (construction workers are more likely to contact shallow groundwater).

The exposure point concentration (EPC) is defined as the concentration to which a receptor is exposed. In this HHRA, the 95-percent upper confidence limit (95% UCL) on the arithmetic mean was evaluated as the EPC for each data set, when appropriate. The maximum detected concentration was used as the EPC if there were an insufficient number of samples (i.e., less than five), as was the case for both the shallow and intermediate groundwater data sets with three samples each.

EPCs were calculated following USEPA's Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002) and using USEPA's ProUCL software Version 5.0.00 (USEPA, 2013). If ProUCL was unable to calculate a 95% UCL, then the maximum detected concentration was used as the EPC. Non-detected values were evaluated in accordance with the ProUCL guidance. EPCs for all data sets evaluated in this HHRA are presented in the risk-ratio tables described in Section 5. ProUCL outputs for all data sets evaluated in this HHRA are included at the end of this attachment.

4.0 Toxicity Assessment

The toxicity values used to calculate the RBCs are identified in Tables A-5.1 through A-5.4 in Attachment A-5 and are those values published in the January 2015 USEPA RSL table (USEPA, 2015).

5.0 Results of the Risk Characterization

Risk estimates were calculated using a simple risk-ratio methodology and the RBCs. The RBCs for receptor exposures to soil and groundwater represent, in effect, an HQ of 1 (i.e., the no-adverse-effect concentration) for non-carcinogens and a $1x10^{-6}$ target cancer risk level for carcinogens. Cancer and

non-cancer risk estimates were developed using the risk-ratio technique demonstrated in the following formula:

$$\frac{\text{RBC for Receptor}}{\text{EPC for Chemical}} = \frac{\text{Target HQ of 1 or Target Cancer Risk Estimate of 1E-06}}{\text{HQ or Cancer Risk Estimate}}$$

Solving this equation for HQ or cancer risk yields:

$$\text{HQ or Cancer Risk Estimate} = \frac{\text{EPC for Chemical x Target HQ of 1 or Target Cancer Risk Estimate of 1E-06}}{\text{RBC for Receptor}}$$

The following example calculations are provided for exposure to the maximum concentration of trichloroethene in the shallow groundwater data set (see Table A-3.10):

$$\text{Cancer risk estimate} = \frac{3.7 \text{ x } 1E\text{-}06}{0.49} = 7.6E\text{-}06$$

$$HQ = \frac{3.7 \text{ x } 1}{2.8} = 1.3$$

A hazard index (HI) was generated by summing the individual HQs for all chemicals. The HI is not a mathematical prediction of the severity of toxic effects, and therefore is not a true "risk"; it is simply a numerical indicator of the possibility of the occurrence of noncarcinogenic (threshold) effects. Calculated cancer risks were interpreted primarily using the USEPA's "target risk range" ($1x10^{-6}$ to $1x10^{-4}$) and the State of Rhode Island cancer risk benchmark of $1x10^{-5}$ (as a point of reference), and HIs were interpreted using a value of 1 (i.e., the no-adverse-effect level). If an HI exceeds unity, a segregation of target organ effects associated with exposure to the chemicals evaluated is typically performed. Only those chemicals that affect the same target organ(s) or exhibit similar critical effect(s) are regarded as truly additive. Consequently, it may be possible for a cumulative HI to exceed 1, but no adverse health effects are anticipated if the chemicals evaluated do not affect the same target organ or exhibit the same critical effect. The results of risk-ratio evaluations are presented in Tables A-3.5 through A-3.11. A summary of the results of the risk-ratio evaluations is provided below.

Summary of Cancer and Non-Cancer Risk Estimates and Risk Contributors[1] for Receptor Direct Contact with Subsurface Soil or Groundwater

Table Number	Data Set Evaluated	Receptor	Risk Estimates[2][3]	
			Cancer Risk Estimate	Hazard Index
A-3.5	Subsurface soil	Construction Worker	$2x10^{-7}$ / $9x10^{-8}$	0.7 / 0.7
A-3.7		Industrial Worker	$9x10^{-7}$ / $4x10^{-9}$	0.06 / 0.06
A-3.8		Recreational User[4]	$7x10^{-7}$ / $1x10^{-10}$	0.1 / 0.1
A-3.9		Hypothetical Resident[4]	$4x10^{-6}$ / $2x10^{-8}$	1 / 0.9
A-3.6	Shallow groundwater	Construction Worker	$7x10^{-7}$	0.4
A-3.10		Hypothetical Resident[4]	$8x10^{-6}$	**3[5]**
A-3.11	Intermediate groundwater	Hypothetical Resident[4]	**$1x10^{-3}$ (1,1,2,2-PCA, 1,1,2-TCA, TCE, VC)**	**82 (1,1,2-TCA, cis-1,2-DCE, TCE, Co)**

1 A noncarcinogenic risk contributor is a chemical that contributes substantially (i.e., greater than an HQ of 0.1) to a target organ-specific HI that exceeds 1. A carcinogenic risk contributor is a chemical with a calculated cancer risk estimate exceeding $1x10^{-6}$ when the medium-specific total cancer risk for the receptor exceeds $1x10^{-5}$.

2 Italicized carcinogenic risk estimates exceed the State of Rhode Island cancer risk limit of $1x10^{-5}$. Bolded carcinogenic risk estimates exceed USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$. Bolded HIs exceed the target level of 1. A chemical name presented in parentheses indicates the primary chemical driving risk.

3 Cancer risks and hazard indices are presented two ways: 1) with arsenic (for information purposes only), (2) without arsenic. As noted above, arsenic was not selected as a COPC. Risk estimates including arsenic are included at the end of this attachment.

4 The cancer risk and HI presented for the recreational user are for the lifelong recreational user and child recreational user (i.e., the most conservative recreational user receptors), respectively. The cancer risk and HI presented for the hypothetical resident are for the lifelong resident and child resident (i.e., the most conservative receptors), respectively.

5 Target organ HIs are equal to 1.

Definitions: 1,1,2,2-PCA = 1,1,2,2-Tetrachloroethane; 1,1,2-TCA = 1,1,2-Trichloroethane; cis-1,2-DCE = cis-1,2-Dichloroethene; TCE = Trichloroethene; VC = Vinyl Chloride; Co = Cobalt

As shown in the summary table, all HIs for subsurface soil and the HI for construction workers exposed to shallow groundwater are less than the target level of 1. The HI for residential exposure to shallow groundwater (HI = 3) exceeds 1, but target-organ specific HIs do not exceed 1. Therefore, no adverse noncarcinogenic effects are expected for exposures to subsurface soil or shallow groundwater. Summing construction worker HIs for subsurface soil (HI = 0.7) and shallow groundwater (HI = 0.4) to represent the cumulative risk associated with exposure to both of these media results in an HI less than 1. Summing industrial worker HIs for subsurface soil (HI = 0.06) and vapor intrusion from shallow groundwater (HI = 0.2) (Attachment A-2) to represent the cumulative risk associated with exposure to

both of these media results in an HI less than 1. Summing residential HIs for exposures to subsurface soil (HI = 0.9), shallow groundwater (HI = 3), and vapor intrusion from shallow groundwater (HI = 0.7) (Attachment A-2) to represent the cumulative risk associated with exposure to these media result in an HI greater than 1, and target organ HIs for the thyroid (HI = 2 due to cobalt) and cardiovascular system, fetotoxicity, and immune system (HIs = 2 due to trichloroethene) exceed 1. It should be noted that the maximum concentration of these chemicals were used as the EPC, which results in added uncertainty. Additionally, uncertainty is associated with the toxicity criteria used for cobalt. Section 5 discusses uncertainty associated with the HIs presented.

The HI for intermediate groundwater, estimated for hypothetical residents only, exceeds 1 (HI = 82). Target organ HIs for the kidney (HI = 3), cardiovascular system, fetotoxicity, and immune system (HI = 61), thyroid (HI = 3), and whole body (HI = 14) exceeded 1. Primary contributors to the HI exceedances are 1,1,2-trichloroethane, cis-1,2-dichloroethene, trichloroethene, and cobalt. Cumulative HIs for residential exposures to subsurface soil, intermediate groundwater, and vapor intrusion therefore also exceed 1. As stated previously, uncertainty is associated with the intermediate groundwater data set and is discussed in Section 5.

Cancer risk estimates for all subsurface soil and shallow groundwater evaluations are less than or within the USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$ and less than the State of Rhode Island cancer risk benchmark of $1x10^{-5}$. Summing construction worker cancer risks for subsurface soil (ILCR = $9x10^{-8}$) and shallow groundwater (ILCR = $7x10^{-7}$) to represent the cumulative risk associated with exposure to both of these media results in an ILCR less than USEPA's target cancer risk range and less than the State of Rhode Island cancer risk benchmark. Summing industrial worker cancer risks for subsurface soil (ILCR = $4x10^{-9}$) and vapor intrusion from shallow groundwater (ILCR = $5x10^{-7}$) (Attachment A-2) to represent the cumulative risk associated with exposure to both of these media results in an ILCR less than USEPA's target cancer risk range and less than the State of Rhode Island cancer risk benchmark. Summing residential cancer risks for exposures to subsurface soil (ILCR = $2x10^{-8}$), shallow groundwater (ILCR = $8x10^{-6}$), and vapor intrusion (ILCR = $3x10^{-6}$) (Attachment A-2) to represent the cumulative risk associated with exposure to these media results in an ILCR within USEPA's target risk range and equal to but not exceeding the State of Rhode Island cancer risk benchmark. Therefore, no risk drivers were identified based on cancer risk estimates under the defined exposure scenarios for subsurface soil and shallow groundwater.

The cancer risk for intermediate groundwater (ILCR = $1x10^{-3}$), estimated for hypothetical residents only, exceeds USEPA's target cancer risk range of $1x10^{-6}$ to $1x10^{-4}$ and Rhode Island's target cancer risk level of $1x10^{-5}$. 1,1,2,2-Tetrachloroethane, 1,1,2-trichloroethane, trichloroethene, and vinyl chloride are the primary risk contributors to the cancer risks. Cumulative cancer risks for residential exposures to

subsurface soil, intermediate groundwater, and vapor intrusion from intermediate groundwater (Attachment A-2) therefore also exceed USEPA's target cancer risk range and the State of Rhode Island target cancer risk benchmark. As stated previously, uncertainty is associated with the intermediate groundwater data set and is discussed in Section 5.

As noted in Section 2, the following analytes were selected as COPCs for migration from subsurface soil to groundwater:

- Volatiles: cis-1,2-dichloroethene and trichloroethene.
- PCBs: Aroclor-1260.
- Metals: antimony, cobalt, iron, lead, manganese, selenium, and silver.
- Miscellaneous parameters: cyanide.

Of the COPCs for migration to groundwater, Aroclor-1260, lead, and selenium were not detected in groundwater from the Drum Removal Area wells, and the metals antimony and silver were not selected as groundwater COPCs. Therefore, the groundwater data do not indicate that these COPCs have negatively influenced groundwater quality. Iron was selected as a COPC in shallow groundwater (but not detected in intermediate groundwater), and cobalt and manganese were selected as COPCs in both shallow and intermediate groundwater. The maximum concentrations of iron and manganese in groundwater exceed RSLs based on HQs of 0.1 but are less than RSLs based on HQs of 1. Therefore, groundwater data do not indicate that iron and manganese concentrations in soil have negatively impacted groundwater quality. The concentration of cobalt in shallow groundwater (detected in 1 of 3 samples, concentration = 7.6 ug/L) slightly exceeds the tap water RSL based on an HQ of 1 (6 ug/L); cobalt concentrations in intermediate groundwater are greater (maximum = 16.7 ug/L) and exceed the tap water RSL based on an HQ of 1. However, shallow groundwater concentrations are likely more representative of any leaching that has occurred. Additionally, uncertainty is associated with toxicity criteria for cobalt, and cobalt would not be a COPC if revised criteria were used (see Section 6). Based on these considerations, the groundwater data do not indicate cobalt concentrations in soil have negatively impacted groundwater quality. Cyanide was not a target analyte for the groundwater samples. Although subsurface soil concentrations of cyanide (maximum = 0.195 mg/kg) exceed the risk-based SSL (0.015 mg/kg), they do not exceed the MCL-based SSL (2 mg/kg). Therefore, cyanide concentrations in soil are not expected to negatively affect groundwater quality. The volatiles cis-1,2-dichloroethene and trichloroethene were both detected in shallow and intermediate groundwater samples; however, cis-1,2-dichloroethene was not selected as a groundwater COPC for the shallow-zone samples, and the maximum concentration of trichloroethene in shallow groundwater is less than the MCL and RIDEM GA objective. Additionally, the maximum concentration of cis-1,2-dichloroethene in subsurface soil is less than the MCL-based SSL, and the maximum concentrations of both cis-1,2-dichloroethene and trichloroethene in subsurface soil are

less than the RIDEM GA leachability criteria. Based on these considerations, subsurface soil concentrations of cis-1,2-dichloroethene and trichloroethene are not expected to negatively impact groundwater quality. As noted previously, intermediate-zone groundwater concentrations of volatiles, including cis-1,2-dichloroethene and trichloroethene, are greater than shallow-zone concentrations of volatiles, and uncertainty associated with the intermediate groundwater data set is discussed in Section 5. With regards to migration from soil to groundwater, shallow groundwater concentrations are likely more representative of any leaching that has occurred.

6.0 Uncertainty Analysis

The following sources of uncertainty should be considered when interpreting the results of the risk evaluations:

- No formal site-specific background data sets are available for the soil or groundwater samples from the CED Area Drum Removal Area. For soil, site concentrations were compared to NCBC Davisville background values for comparison purposes only; chemicals detected in soil were not eliminated from COPC selection on the basis of background comparisons. For groundwater at Sites 02/03, chemical concentrations detected in upgradient wells (MW01-10S, MW01-13S, and MW01-14S) were considered for use in eliminating chemicals from COPC selection. However, chemicals detected at concentrations greater than screening levels in subsurface soil and groundwater were also detected at concentrations greater than background or upgradient concentrations. Therefore, results of COPC selection are not affected by whether available background/upgradient concentrations are used to eliminate chemicals from COPC selection. No risk drivers were identified for subsurface soil under the defined exposure scenarios; therefore, risk assessment conclusions are not affected by the lack of a formal background data set for soil. For groundwater, upgradient concentrations were collected to provide background concentrations particularly for metals in groundwater. Of the metals selected as COPCs for groundwater, only cobalt was a risk driver (in intermediate groundwater only). Cobalt is a naturally occurring metal, and cobalt would not be identified as a risk driver if using alternative screening criteria for cobalt to account for the considerable uncertainty associated with the toxicity criteria for cobalt (see last bullet).

- Maximum concentrations were used as EPCs for groundwater exposures estimated in this HHRA because of the small number of samples available (i.e., there were only 3 samples available for the shallow groundwater and intermediate groundwater data sets). As noted previously, using maximum concentrations for EPCs is conservative and likely results in an overestimation of risk because it assumes that a receptor is continually exposed to the greatest concentration reported for a data set.

Consequently, risk estimates calculated using the 95% UCL as the EPC are likely to be more representative of actual exposure conditions.

- Intermediate groundwater data from the Drum Removal Area were evaluated in addition to shallow groundwater data for purposes of completeness. However, the intermediate groundwater data may be more representative of off-site sources of contamination, as a VOC plume emanating primarily from an upgradient United States Army Corps of Engineers (USACE) source area underlies soil at the CED Area.

- For purposes of risk characterization, screening levels were calculated for construction workers and recreational users using toxicity values from the January 2015 USEPA RSL table and exposure assumptions based on USEPA guidance when applicable. Some exposure assumptions (e.g., exposure frequency for construction workers) were based on professional judgment.

- Although the future land use of the CED Area is anticipated to be industrial/commercial or recreational, the residential land use scenario was evaluated in this HHRE primarily to support risk-management decisions. All receptors were evaluated for exposure to subsurface soil; however, the construction worker is the only receptor likely to have direct contact with subsurface soil. Exposure to subsurface soil for receptors other than construction workers would only occur if construction activities brought subsurface soil to the surface. However, subsurface soil exposures were evaluated for all receptors to support risk-management decisions.

- Arsenic concentrations in subsurface soil were less than the RIDEM Method 1 Direct Exposure Criterion for arsenic of 7.0 mg/kg, which is based on the 95-percent upper confidence limit of natural background across the state (RIDEM, 2011); therefore, arsenic was not selected as a COPC. To be conservative, risk estimates including arsenic were presented at the end of this attachment and summarized in Section 4. Medium-specific cancer risks and HIs for subsurface soil do not exceed benchmark levels even when arsenic is included in the calculations. Therefore, overall HHRA conclusions are not affected by whether arsenic is included or excluding in the quantitative HHRA.

- Toxicity criteria are available for different forms of chromium. Hexavalent chromium is considered to be highly toxic versus trivalent chromium. In COPC selection, total chromium was assumed to be present in the trivalent form because it is unlikely that hexavalent chromium is the dominant species in CED Area media. The following table compares EPCs used in the evaluations for total chromium to the corresponding screening criteria (based on an ILCR = $1x10^{-6}$ or an HQ of 0.1).

EPCs for Chromium	Residential RSLs – Cr III	Residential RSLs – Cr VI
Subsurface Soil (mg/kg)		
Maximum = 24.9	Noncancer: 12,000 Cancer: Not Applicable	Noncancer: 23 Cancer: 0.30
Shallow Groundwater (ug/L)		
Maximum = 1 (total) Maximum = 1.1 (dissolved)	Noncancer: 2,200 Cancer: Not Applicable	Noncancer: 4.4 Cancer: 0.035
Intermediate Groundwater (ug/L)		
Maximum = 1.4 (total) Maximum = 1 (dissolved)	Noncancer: 2,200 Cancer: Not Applicable	Noncancer: 4.4 Cancer: 0.035

If the screening criteria for hexavalent chromium had been used for COPC selection, chromium would have been selected as a COPC for both soil and groundwater data sets. However, as stated previously, it is unlikely that hexavalent chromium is the dominant species in CED Area media.

- Cobalt was selected as a COPC for soil and groundwater data sets based on exceedances of USEPA RSLs. Uncertainty is associated with selecting cobalt as a COPC because cobalt is a naturally-occurring metal and the conservative screening levels (based on USEPA criteria) are likely to be less than background levels of cobalt expected at some sites. For example, the Maryland Department of the Environment (MDE) selected revised criteria for cobalt of 50 mg/kg for soil and 100 ug/L for groundwater based on Agency for Toxic Substances and Disease Registry (ATSDR) toxicity values (MDE, 2013). These MDE values for cobalt are considerably greater than the current USEPA cobalt RSLs for residential soil (23 mg/kg) and groundwater (6 ug/L). Cobalt would not have been selected as a COPC for soil or groundwater at the Drum Removal Area if the MDE values for cobalt were used for COPC selection instead of the USEPA RSLs. Additionally, cobalt concentrations in intermediate groundwater exceeded those in shallow groundwater. Cobalt was not selected as a risk driver for shallow groundwater, and shallow groundwater concentrations are likely more representative of site-related contamination.

7.0 Summary and Conclusions

The HHRA for the CED Area Drum Removal Area evaluated potential risks and hazards for exposures to subsurface soil, shallow-zone groundwater, and intermediate-zone groundwater. Subsurface samples collected in October 2013 and groundwater samples collected in September/October 2014 were used in the HHRA and were compared to conservative screening levels for direct contact exposures and, for soil, risk-based screening levels for migration to groundwater. Vapor intrusion exposures for groundwater were evaluated separately (see Attachment A-2). Screening criteria for trivalent chromium were used to evaluate total chromium data in the HHRA because historical site activities for the CED Area do not

suggest that hexavalent chromium would be a significant contaminant at any sites in the investigation area.

Risk drivers for direct contact exposures are presented below.

Environmental Medium	Receptors Evaluated	Risk Drivers
Subsurface Soil	Construction Worker, Industrial Worker, Recreational User, Hypothetical Resident	None
Shallow Groundwater	Construction Worker, Hypothetical Resident	None
Intermediate Groundwater(1)	Hypothetical Resident	1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, cis-1,2-dichloroethene, trichloroethene, vinyl chloride, cobalt(2)

1 Intermediate groundwater samples (collected 50 feet bgs) may be more representative of off-site contamination sources than site-specific contamination.

2 Cobalt would not be identified as a COPC or a risk driver if revised criteria for cobalt from MDE (2013) had been used for COPC selection.

No unacceptable medium-specific risks or risk drivers were selected for subsurface soil or shallow groundwater based on the HHRA; therefore, no chemicals of concern (COCs) are selected for these media. Although unacceptable risks and risk drivers were identified for intermediate groundwater, the intermediate groundwater samples likely are more representative of off-site contamination than site-specific contamination. Thus, the risk drivers (COCs) identified above for the intermediate groundwater are not selected as COCs for the Drum Removal Area.

8.0 References

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USEPA, 2015. Regional Screening Levels for Chemical Contaminants at Superfund Sites, prepared by Oak Ridge National Laboratory. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table. January.

Tables and Figure

TABLE A-3.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	NCBC Davisville Background Value[4]	USEPA RSL Residential[5]	RIDEM Direct Contact Criteria Residential[9]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Drum Removal Area	**VOLATILES**													
	67-64-1	Acetone	9.3 J	9.3 J	UG/KG	DRUM-08-SOIL	1/18	2.1 - 3.3	9.3	NA	6100000 N	7800000	No	BSL
	156-59-2	cis-1,2-Dichloroethene	10.3	14.4	UG/KG	DRUM-12-SOIL	2/18	0.42 - 0.65	14.4	NA	16000 N	630000	No	BSL
	79-01-6	Trichloroethene	1.1 J	7	UG/KG	DRUM-12-SOIL	3/18	0.42 - 0.65	7	NA	410 N[8]	13000	No	BSL
	SEMIVOLATILES													
	84-66-2	Diethyl Phthalate	140 J	2100	UG/KG	TP-03-PIPE	4/18	34.8 - 37	2100	NA	4900000 N	340000	No	BSL
	131-11-3	Dimethyl Phthalate	220 J	770	UG/KG	DRUM-07-SOIL-D	16/18	-	770	NA	NA	1900000	No	BSL
	206-44-0	Fluoranthene	74.7 J	83.9 J	UG/KG	DRUM-01-SOIL	2/18	34.8 - 37.4	83.9	NA	230000 N	20000	No	BSL
	129-00-0	Pyrene	73.7 J	73.7 J	UG/KG	TP-08-SOIL	1/18	35.4 - 37.4	73.7	NA	170000 N	13000	No	BSL
	PCBS													
	11096-82-5	Aroclor-1260	12 J	72.2	UG/KG	DRUM-07-SOIL-D	18/18	-	72.2	NA	240 C	10000 [9]	No	BSL
	METALS													
	7429-90-5	**Aluminum**	1100 J	12000 J	MG/KG	TP-01-PIPE	18/18	-	12000	**8560**	**7700 N**	NA	**Yes**	ASL
	7440-36-0	Antimony	0.778 J	0.778 J	MG/KG	DRUM-09-SOIL	1/18	1.09 - 1.2	0.778	**ND**	3.1 N	10	No	BSL
	7440-38-2	Arsenic	1.46	5.62	MG/KG	DRUM-09-SOIL	18/18	-	5.62	8.1	**0.67 C**	7	No	[10]
	7440-39-3	Barium	12.4	20.9	MG/KG	TP-03-PIPE	18/18	-	20.9	**15.5**	1500 N	5500	No	BSL
	7440-41-7	Beryllium	0.182 J	0.532 J	MG/KG	TP-01-PIPE	18/18	-	0.532	0.66	16 N	1.5	No	BSL
	7440-43-9	Cadmium	0.133 J	0.143 J	MG/KG	DRUM-05-SOIL	2/18	0.13 - 0.144	0.143	0.46	7 N	39	No	BSL
	7440-70-2	Calcium	298 J	770 J	MG/KG	DRUM-09-SOIL	18/18	-	770	**629**	NA	NA	No	NUT
	7440-47-3	Chromium	5.98 J	24.9 J	MG/KG	DRUM-07-SOIL	18/18	-	24.9	**9.6**	12000 N[11]	1400 N[11]	No	BSL
	7440-48-4	**Cobalt**	4.6	11.7	MG/KG	TP-03-PIPE	18/18	-	11.7	**4.6**	**2.3 N**	NA	**Yes**	ASL
	7440-50-8	Copper	5.87	19.9 J	MG/KG	TP-03-PIPE	18/18	-	19.9	**15**	310 N	3100	No	BSL
	7439-89-6	**Iron**	2700 J	33400 J	MG/KG	DRUM-09-SOIL	18/18	-	33400	**12000**	**5500 N**	NA	**Yes**	ASL
	7439-92-1	Lead	15.3 J	128 J	MG/KG	DRUM-07-SOIL	18/18	-	128	**53.8**	400	150	No	BSL
	7439-95-4	Magnesium	995	3900 J	MG/KG	TP-01-PIPE	18/18	-	3900	**1220**	NA	NA	No	NUT
	7439-96-5	**Manganese**	104	371 J	MG/KG	TP-03-PIPE	18/18	-	371	**150**	**180 N**	390	**Yes**	ASL
	7439-97-6	Mercury	0.005 J	0.028	MG/KG	TP-08-SOIL	18/18	-	0.028	0.03	2.3 N[12]	23	No	BSL
	7440-02-0	Nickel	7.47	20.5	MG/KG	TP-03-PIPE	18/18	-	20.5	**5**	150 N	1000	No	BSL
	7440-09-7	Potassium	404 J	884	MG/KG	TP-01-PIPE, TP-03-PIPE	18/18	-	884	**728**	NA	NA	No	NUT
	7782-49-2	Selenium	0.411 J	1.51 J	MG/KG	TP-01-PIPE	14/18	0.454 - 0.465	1.51	**0.77**	39 N	390	No	BSL
	7440-22-4	Silver	0.724 J	2.13 J	MG/KG	DRUM-09-SOIL	18/18	-	2.13	**0.96**	39 N	200	No	BSL
	7440-23-5	Sodium	23.4 J	49.2 J	MG/KG	TP-04-SOIL	18/18	-	49.2	119	NA	NA	No	NUT
	7440-62-2	Vanadium	10.87	20.2	MG/KG	TP-03-PIPE	18/18	-	20.2	24.6	39 N	550	No	BSL
	7440-66-6	Zinc	36.9	56.5	MG/KG	TP-08-SOIL	18/18	-	56.5	172	2300 N	6000	No	BSL
	MISCELLANEOUS PARAMETERS													
	57-12-5	Cyanide	0.036 J	0.195 J	MG/KG	TP-09-SOIL	8/18	0.132 - 0.138	0.195	**ND**	2.1 N	200	No	BSL
	PETROLEUM HYDROCARBONS													
	–	TPH (C09-C40)	6961 J	106263 J	UG/KG	DRUM-09-SOIL	18/18	-	106263	NA	NA	500000	No	BSL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.

Definitions:
C = Carcinogen
COPC = Chemical of potential concern
J = Estimated value

TABLE A-3.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	NCBC Davisville Background Value[4]	USEPA RSL Residential[5]	RIDEM Direct Contact Criteria Residential[6]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]

4 - The maximum concentration from the soil background data set is presented for comparison only.
5 - United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015. Screening levels are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 0.1.
6 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
7 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
8 - One-tenth the noncarcinogenic value is less than the carcinogenic value; therefore, the noncarcinogenic value is presented.
9 - Value is for total PCBs.
10 - Arsenic concentrations were less than the RIDEM Method 1 Direct Exposure Criterion for arsenic of 7.0 mg/kg, which is based on the 95-percent upper confidence limit of natural background across the state (RIDEM, November 2011). Consequently, arsenic was not selected as a COPC for soil.
11 - Value is for trivalent chromium.
12 - Value is for mercuric chloride (and other mercury salts).

N = Noncarcinogen
NA = Not applicable/not available
ND = Not detected

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level and background

For elimination as a COPC:
BSL = Below screening level
NUT = Essential nutrient

Associated Samples:
DRUM-01-SOIL
DRUM-05-SOIL
DRUM-06-SOIL
DRUM-07-SOIL
DRUM-07-SOIL-D
DRUM-08-SOIL
DRUM-09-SOIL
DRUM-10-SOIL
DRUM-11-SOIL
DRUM-12-SOIL
TP-01-PIPE
TP-02-PIPE
TP-03-PIPE
TP-04-SOIL
TP-05-SOIL
TP-06-SOIL
TP-07-SOIL
TP-08-SOIL
TP-09-SOIL

TABLE A-3.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - MIGRATION FROM SUBSURFACE SOIL TO GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	USEPA SSL for Groundwater Protection[5]	RIDEM GA Leachability Criteria[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Drum Removal Area	**VOLATILES**													
	67-64-1	Acetone	9.3 J	9.3 J	UG/KG	DRUM-08-SOIL	1/19	2.1 - 3.3	9.3	NA	2900	NA	No	BSL
	156-59-2	**cis-1,2-Dichloroethene**	10.3	14.4	UG/KG	DRUM-12-SOIL	2/19	0.42 - 0.65	14.4	NA	**11**	1700	**Yes**	ASL
	79-01-6	**Trichloroethene**	1.1 J	7	UG/KG	DRUM-12-SOIL	3/19	0.42 - 0.65	7	NA	**0.18**	200	**Yes**	ASL
	SEMIVOLATILES													
	84-66-2	Diethyl Phthalate	140 J	2100	UG/KG	TP-03-PIPE	4/19	34.8 - 37	2100	NA	6100	NA	No	BSL
	131-11-3	Dimethyl Phthalate	220 J	770	UG/KG	DRUM-07-SOIL-D	19/19	-	770	NA	NA	NA	No	NTX
	206-44-0	Fluoranthene	74.7 J	83.9 J	UG/KG	DRUM-01-SOIL	2/19	34.8 - 37.4	83.9	NA	89000	NA	No	BSL
	129-00-0	Pyrene	73.7 J	73.7 J	UG/KG	TP-08-SOIL	1/19	35.4 - 37.4	73.7	NA	13000	NA	No	BSL
	PCBS													
	11096-82-5	**Aroclor-1260**	12 J	72.2	UG/KG	DRUM-07-SOIL-D	19/19	-	72.2	NA	**27**	10000 [6]	**Yes**	ASL
	METALS													
	7429-90-5	Aluminum	1100 J	12000 J	MG/KG	TP-01-PIPE	19/19	-	12000	**8560**	30000	NA	No	BSL
	7440-36-0	**Antimony**	0.778 J	0.778 J	MG/KG	DRUM-09-SOIL	1/19	1.09 - 1.2	0.778	**ND**	**0.35**	NA	**Yes**	ASL
	7440-38-2	Arsenic	1.46	5.62	MG/KG	DRUM-09-SOIL	19/19	-	5.62	8.1	**0.0015**	NA	No	[8]
	7440-39-3	Barium	12.4	20.9	MG/KG	TP-03-PIPE	19/19	-	20.9	**15.5**	160	NA	No	BSL
	7440-41-7	Beryllium	0.182 J	0.532 J	MG/KG	TP-01-PIPE	19/19	-	0.532	0.66	19	NA	No	BSL
	7440-43-9	Cadmium	0.133 J	0.143 J	MG/KG	DRUM-05-SOIL	2/19	0.13 - 0.144	0.143	0.46	0.69	NA	No	BSL
	7440-70-2	Calcium	298 J	770 J	MG/KG	DRUM-09-SOIL	19/19	-	770	**628**	NA	NA	No	NUT
	7440-47-3	Chromium	5.98 J	24.9 J	MG/KG	DRUM-07-SOIL	19/19	-	24.9	**9.6**	40000000 [10]	NA	No	BSL
	7440-48-4	**Cobalt**	4.6	11.7	MG/KG	TP-03-PIPE	19/19	-	11.7	**4.6**	**0.27**	NA	**Yes**	ASL
	7440-50-8	Copper	5.87	19.9 J	MG/KG	TP-03-PIPE	19/19	-	19.9	**15**	28	NA	No	BSL
	7439-89-6	**Iron**	2700 J	33400 J	MG/KG	DRUM-09-SOIL	19/19	-	33400	**12000**	**350**	NA	**Yes**	ASL
	7439-92-1	**Lead**	15.3 J	128 J	MG/KG	DRUM-07-SOIL	19/19	-	128	**53.8**	**14** [11]	NA	**Yes**	ASL
	7439-95-4	Magnesium	995	3900 J	MG/KG	TP-01-PIPE	19/19	-	3900	**1220**	NA	NA	No	NUT
	7439-96-5	**Manganese**	104	371 J	MG/KG	TP-03-PIPE	19/19	-	371	**150**	**28**	NA	**Yes**	ASL
	7439-97-6	Mercury	0.005 J	0.028	MG/KG	TP-08-SOIL	19/19	-	0.028	0.03	0.033	NA	No	BSL
	7440-02-0	Nickel	7.47	20.5	MG/KG	TP-03-PIPE	19/19	-	20.5	**5**	26	NA	No	BSL
	7440-09-7	Potassium	404 J	884	MG/KG	TP-01-PIPE, TP-03-PIPE	19/19	-	884	**728**	NA	NA	No	NUT
	7782-49-2	**Selenium**	0.411 J	1.51 J	MG/KG	TP-01-PIPE	15/19	0.454 - 0.465	1.51	**0.77**	**0.52**	NA	**Yes**	ASL
	7440-22-4	**Silver**	0.724 J	2.13 J	MG/KG	DRUM-09-SOIL	19/19	-	2.13	**0.06**	**0.8**	NA	**Yes**	ASL
	7440-23-5	Sodium	23.4 J	49.2 J	MG/KG	TP-04-SOIL	19/19	-	49.2	119	NA	NA	No	NUT
	7440-62-2	Vanadium	10.87	20.2	MG/KG	TP-03-PIPE	19/19	-	20.2	24.6	86	NA	No	BSL
	7440-66-6	Zinc	36.9	56.5	MG/KG	TP-08-SOIL	19/19	-	56.5	172	370	NA	No	BSL
	MISCELLANEOUS PARAMETERS													
	57-12-5	**Cyanide**	0.036 J	0.195 J	MG/KG	TP-09-SOIL	8/19	0.132 - 0.138	0.195	**ND**	**0.015**	NA	**Yes**	ASL
	PETROLEUM HYDROCARBONS													
	–	TPH (C09-C40)	6961 J	106263 J	UG/KG	DRUM-09-SOIL	19/19	-	106263	NA	NA	500000	No	BSL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.

Definitions:
COPC = Chemical of potential concern
J = Estimated value
NA = Not applicable/not available

TABLE A-3.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - MIGRATION FROM SUBSURFACE SOIL TO GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	USEPA SSL for Groundwater Protection[5]	RIDEM GA Leachability Criteria[6]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]

4 - The maximum concentration from the soil background data set is presented for comparison only.
5 - United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.
Protection of groundwater values are risk-based soil screening levels (SSLs) representing a dilution attenuation factor (DAF) of 1.
6 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
7 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
8 - Value is for total PCBs.
9 - Arsenic concentrations were less than the RIDEM Method 1 Direct Exposure Criterion for arsenic of 7.0 mg/kg, which is based on the 95-percent upper confidence limit of natural background across the state (RIDEM, November 2011). Consequently, arsenic was not selected as a COPC for soil.
10 - Value is for trivalent chromium.
11 - Value is Maximum Contaminant Level (MCL)-based SSL.

ND = Not detected

Rationale Codes:
For selection as a COPC:
ASL = Above screening level

For elimination as a COPC:
BSL = Below screening level
NUT = Essential nutrient
NTX = No toxicity criteria

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Associated Samples:
DRUM-01-SOIL
DRUM-05-SOIL
DRUM-06-SOIL
DRUM-07-SOIL
DRUM-07-SOIL-D
DRUM-08-SOIL
DRUM-09-SOIL
DRUM-10-SOIL
DRUM-11-SOIL
DRUM-12-SOIL
TP-01-PIPE
TP-02-PIPE
TP-03-PIPE
TP-04-SOIL
TP-05-SOIL
TP-06-SOIL
TP-07-SOIL
TP-08-SOIL
TP-09-SOIL

TABLE A-3.3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - SHALLOW GROUNDWATER
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Upgradient/ Background Concentrations[4]	USEPA RSL - Tap Water[5]	USEPA MCL[6]	RIDEM GA Groundwater Objective[7]	RIDEM GB Groundwater Objective[7]	COPC Flag	Rationale for Contaminant Deletion or Selection[8]
Drum Removal Area	VOLATILES															
	156-59-2	cis-1,2-Dichloroethene	1.3	1.3	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	1/3	0.5 - 0.5	1.3	NA	3.6 N	70	70	2400	No	BSL
	79-01-6	Trichloroethene	1.1	3.7	ug/L	MW03-17S-NWG-093014-D	3/3	-	3.7	NA	0.28 N[9]	5	5	540	Yes	ASL
	METALS															
	7429-90-5	Aluminum	23.3	37.6	ug/L	MW03-17S-NWG-093014-D	2/3	17.8 - 17.8	37.6	NA	2000 N	NA	NA	NA	No	BSL
	7440-36-0	Antimony	0.21 J	0.21 J	ug/L	MW03-17S-NWG-093014-D	1/3	0.2 - 0.2	0.21	NA	0.78 N	NA	6	NA	No	BSL
	7440-39-3	Barium	8.6 J	15.6	ug/L	MW03-17S-NWG-093014-D	2/3	5.2 - 5.2	15.6	NA	380 N	2000	2000	NA	No	BSL
	7440-43-9	Cadmium	0.12 J	0.7 J	ug/L	MW03-15S-NWG-100114	2/3	0.15 - 0.15	0.7	NA	0.92 N	5	5	NA	No	BSL
	7440-70-2	Calcium	3490	7140	ug/L	MW03-16S-NWG-100614	3/3	-	7140	NA	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.81 J	1 J	ug/L	MW03-17S-NWG-093014-D	3/3	-	1	NA	2200 N[10]	100	100	NA	No	BSL
	7440-48-4	Cobalt	7.3	7.3	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	1/3	0.034 - 0.64	7.3	NA	0.6 N	NA	NA	NA	Yes	ASL
	7440-50-8	Copper	1.5 J	1.9 J	ug/L	MW03-17S-NWG-093014-D	1/3	0.38 - 0.46	1.9	NA	80 N	1300	NA	NA	No	BSL
	7439-95-4	Magnesium	1010	2240	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	3/3	-	2240	NA	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	10.6	110	ug/L	MW03-17S-NWG-093014, MW03-17S-NWG-093014-D	3/3	-	110	NA	43 N	NA	NA	NA	Yes	ASL
	7440-02-0	Nickel	0.95 J	10.5	ug/L	MW03-17S-NWG-093014	3/3	-	10.5	NA	39 N	NA	100	NA	No	BSL
	7440-09-7	Potassium	772	1490	ug/L	MW03-17S-NWG-093014-D	3/3	-	1490	NA	NA	NA	NA	NA	No	NUT
	7440-23-5	Sodium	6690	11400	ug/L	MW03-17S-NWG-093014-D	3/3	-	11400	NA	NA	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	0.77 J	0.84 J	ug/L	MW03-15S-NWG-100114, MW03-16S-NWG-100614	3/3	1 - 1	0.84	NA	8.6 N	NA	NA	NA	No	BSL
	7440-66-6	Zinc	1.2 J	11.2	ug/L	MW03-17S-NWG-093014	3/3	-	11.2	NA	600 N	NA	NA	NA	No	BSL
	DISSOLVED METALS															
	7429-90-5	Aluminum	33.6	35	ug/L	MW03-17S-NWG-093014-D	1/3	15.2 - 20.7	35	NA	2000 N	NA	NA	NA	No	BSL
	7440-36-0	Antimony	0.21 J	0.21 J	ug/L	MW03-17S-NWG-093014-D	1/3	0.2 - 0.2	0.21	NA	0.78 N	NA	6	NA	No	BSL

TABLE A-3.3
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REMOVAL AREA - SHALLOW GROUNDWATER
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Upgradient/ Background Concentrations[4]	USEPA RSL - Tap Water[5]	USEPA MCL[6]	RIDEM GA Groundwater Objective[7]	RIDEM GB Groundwater Objective[7]	COPC Flag	Rationale for Contaminant Deletion or Selection[8]
Drum Removal Area	7440-39-3	Barium	8.2 J	15.8	ug/L	MW03-17S-NWG-093014-D	2/3	5.4 - 5.4	15.8	NA	380 N	2000	2000	NA	No	BSL
	7440-43-9	Cadmium	0.13 J	0.92 J	ug/L	MW03-17S-NWG-093014	1/3	0.15 - 0.15	0.92	NA	0.92 N	5	5	NA	No	BSL
	7440-70-2	Calcium	3610	6840	ug/L	MW03-17S-NWG-093014-D	3/3	-	6840	NA	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.84 J	1.1 J	ug/L	MW03-15S-NWG-100114	3/3	-	1.1	NA	2200 C[10]	100	100	NA	No	BSL
	7440-48-4	Cobalt	7.2	7.4	ug/L	MW03-17S-NWG-093014-D	1/3	0.051 - 0.66	7.4	NA	0.6 N	NA	NA	NA	No	Reg. I[11]
	7440-50-8	Copper	1.2 J	3.1	ug/L	MW03-17S-NWG-093014-D	2/3	1 - 1	3.1	NA	80 N	1300	NA	NA	No	BSL
	7439-95-4	Magnesium	969	2280	ug/L	MW03-17S-NWG-093014-D	3/3	-	2280	NA	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	10.1	107	ug/L	MW03-17S-NWG-093014-D	3/3	-	107	NA	43 N	NA	NA	NA	No	Reg. I[11]
	7440-02-0	Nickel	1.8	11	ug/L	MW03-17S-NWG-093014-D	3/3	-	11	NA	39 N	NA	100	NA	No	BSL
	7440-09-7	Potassium	808	1550	ug/L	MW03-17S-NWG-093014-D	3/3	-	1550	NA	NA	NA	NA	NA	No	NUT
	7440-23-5	Sodium	6430	11700	ug/L	MW03-17S-NWG-093014-D	3/3	-	11700	NA	NA	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	1 J	1 J	ug/L	MW03-16S-NWG-100614, MW03-17S-NWG-093014-D	2/3	1 - 1	1	NA	8.6 N	NA	NA	NA	No	BSL
	7440-66-6	Zinc	2	14.2	ug/L	MW03-17S-NWG-093014-D	3/3	-	14.2	NA	600 N	NA	NA	NA	No	BSL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - No background data are available for Drum Removal Area groundwater.
5 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient (HQ) of 0.1.
6 - Federal Maximum Contaminant Levels (MCLs), 2012 Edition of the Drinking Water Standards and Health Advisories. Office of Water, Washington, D.C. EPA 822-S-12-001. April.
7 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
8 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level and is greater than upgradient/background concentrations.
9 - One-tenth the noncarcinogenic screening level is less than the carcinogenic screening level; therefore, the noncarcinogenic screening level is presented.
10 - The screening value is for trivalent chromium.
11 - In accordance with USEPA Region I guidance, only total metals groundwater results are used in the risk assessment; dissolved metals results are presented for information purposes only and are not used for COPC selection.
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
Reg. I = USEPA Region I guidance

Associated Samples:
MW03-15S-NWG-100114
MW03-16S-NWG-100614
MW03-17S-NWG-093014
MW03-17S-NWG-093014-D

TABLE A-3.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REVMOAL AREA - INTERMEDIATE GROUNDWATER
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Upgradient/ Background Concentrations[4]	USEPA RSL - Tap Water[5]	USEPA MCL[6]	RIDEM GA Groundwater Objective[7]	RIDEM GB Groundwater Objective[7]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Drum Removal Area	VOLATILES															
	79-34-5	1,1,2,2-Tetrachloroethane	65	65	ug/L	MW03-16I-NWG-102814	1/3	0.5 - 0.5	65	NA	0.076 C	NA	NA	NA	Yes	ASL
	79-00-5	1,1,2-Trichloroethane	5.6	5.6	ug/L	MW03-16I-NWG-102814	1/3	1 - 1	5.6	NA	0.041 N[9]	5	5	NA	Yes	ASL
	156-59-2	cis-1,2-Dichloroethene	100	100	ug/L	MW03-16I-NWG-102814	1/3	0.5 - 0.5	100	NA	3.6 N	70	70	2400	Yes	ASL
	156-60-5	trans-1,2-Dichloroethene	44	44	ug/L	MW03-16I-NWG-102814	1/3	1 - 1	44	NA	36 N	100	100	2800	Yes	ASL
	79-01-6	Trichloroethene	4.9	170	ug/L	MW03-16I-NWG-102814	2/3	0.5 - 0.5	170	NA	0.28 N[9]	5	5	540	Yes	ASL
	75-01-4	Vinyl Chloride	2.4	2.4	ug/L	MW03-16I-NWG-102814	1/3	0.5 - 0.5	2.4	NA	0.019 C	2	2	2	Yes	ASL
	METALS															
	7429-90-5	Aluminum	21	88.2	ug/L	MW03-15I-NWG-092914	3/3	-	88.2	NA	2000 N	NA	NA	NA	No	BSL
	7440-36-0	Antimony	0.22 J	0.53 J	ug/L	MW03-15I-NWG-092914	3/3	-	0.53	NA	0.78 N	NA	6	NA	No	BSL
	7440-39-3	Barium	10.8	18	ug/L	MW03-15I-NWG-092914	3/3	-	18	NA	380 N	2000	2000	NA	No	BSL
	7440-43-9	Cadmium	0.29 J	0.29 J	ug/L	MW03-15I-NWG-092914	1/3	0.15 - 0.15	0.29	NA	0.92 N	5	5	NA	No	BSL
	7440-70-2	Calcium	7390	9590	ug/L	MW03-16I-NWG-102814	3/3	-	9590	NA	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	1.2 J	1.4 J	ug/L	MW03-15I-NWG-092914	2/3	0.25 - 0.25	1.4	NA	2200 N[10]	100	100	NA	No	BSL
	7440-48-4	Cobalt	7.2	16.7	ug/L	MW03-15I-NWG-092914	3/3	-	16.7	NA	0.6 N	NA	NA	NA	Yes	ASL
	7440-50-8	Copper	0.29 J	0.29 J	ug/L	MW03-16I-NWG-102814	1/3	0.38 - 0.68	0.29	NA	80 N	1300	NA	NA	No	BSL
	7439-89-6	Iron	1500	10800	ug/L	MW03-16I-NWG-102814	3/3	-	10800	NA	1400 N	NA	NA	NA	Yes	ASL
	7439-95-4	Magnesium	2380	3700	ug/L	MW03-16I-NWG-102814	3/3	-	3700	NA	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	40.3	373	ug/L	MW03-16I-NWG-102814	3/3	-	373	NA	43 N	NA	NA	NA	Yes	ASL
	7440-02-0	Nickel	16.8	25.3	ug/L	MW03-15I-NWG-092914	3/3	-	25.3	NA	39 N	NA	100	NA	No	BSL
	7440-09-7	Potassium	1510	1670	ug/L	MW03-16I-NWG-102814	3/3	-	1670	NA	NA	NA	NA	NA	No	NUT
	7440-23-5	Sodium	16300	22300	ug/L	MW03-15I-NWG-092914	3/3	-	22300	NA	NA	NA	NA	NA	No	NUT
	7440-62-2	Vanadium	0.63 J	0.63 J	ug/L	MW03-17I-NWG-100214	1/3	1 - 1	0.63	NA	8.6 N	NA	NA	NA	No	BSL
	7440-66-6	Zinc	22.1	60.5 J	ug/L	MW03-16I-NWG-102814	3/3	-	60.5	NA	600 N	NA	NA	NA	No	BSL

TABLE A-3.4
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DRUM REVMOAL AREA - INTERMEDIATE GROUNDWATER
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Upgradient/ Background Concentrations[4]	USEPA RSL - Tap Water[5]	USEPA MCL[6]	RIDEM GA Groundwater Objective[7]	RIDEM GB Groundwater Objective[7]	COPC Flag	Rationale for Contaminant Deletion or Selection[7]
Drum Removal Area	DISSOLVED METALS															
	7440-36-0	Antimony	0.32 J	0.32 J	ug/L	MW03-16I-NWG-102814	1/3	0.2 - 0.2	0.32	NA	0.78 N	NA	6	NA	No	BSL
	7440-39-3	Barium	10.9	18.7	ug/L	MW03-15I-NWG-092914	3/3	-	18.7	NA	380 N	2000	2000	NA	No	BSL
	7440-70-2	Calcium	7520	9880	ug/L	MW03-16I-NWG-102814	3/3	-	9880	NA	NA	NA	NA	NA	No	NUT
	7440-47-3	Chromium	0.83 J	1 J	ug/L	MW03-15I-NWG-092914	2/3	0.25 - 0.25	1	NA	2200 N[10]	100	100	NA	No	BSL
	7440-48-4	Cobalt	7.4	17.2	ug/L	MW03-15I-NWG-092914	3/3	-	17.2	NA	0.6 N	NA	NA	NA	No	Reg. I[11]
	7440-50-8	Copper	0.74 J	0.85 J	ug/L	MW03-16I-NWG-102814	2/3	1.1 - 1.1	0.85	NA	80 N	1300	NA	NA	No	BSL
	7439-89-6	Iron	1490	10900	ug/L	MW03-16I-NWG-102814	3/3	-	10900	NA	1400 N	NA	NA	NA	No	Reg. I[11]
	7439-95-4	Magnesium	2420	3770	ug/L	MW03-16I-NWG-102814	3/3	-	3770	NA	NA	NA	NA	NA	No	NUT
	7439-96-5	Manganese	40	377	ug/L	MW03-16I-NWG-102814	3/3	-	377	NA	43 N	NA	NA	NA	No	Reg. I[11]
	7440-02-0	Nickel	17.2	25.5	ug/L	MW03-15I-NWG-092914	3/3	-	25.5	NA	39 N	NA	100	NA	No	BSL
	7440-09-7	Potassium	1540	1750	ug/L	MW03-16I-NWG-102814	3/3	-	1750	NA	NA	NA	NA	NA	No	NUT
	7440-23-5	Sodium	16800	22200	ug/L	MW03-15I-NWG-092914	3/3	-	22200	NA	NA	NA	NA	NA	No	NUT
	7440-66-6	Zinc	21.1	85.7 J	ug/L	MW03-16I-NWG-102814	3/3	-	85.7	NA	600 N	NA	NA	NA	No	BSL

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - No background data are available for Drum Removal Area groundwater.
5 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015. RSLs are based on a lifetime cancer risk of 1E-06 or a noncancer hazard quotient
6 - Federal Maximum Contaminant Levels (MCLs), 2012 Edition of the Drinking Water Standards and Health Advisories. Office of Water, Washington, D.C. EPA 822-S-12-001. April.
7 - Rhode Island Department of Environmental Management (RIDEM), DEM-DSR-01-93, November 2011.
8 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level and is greater than upgradient/background concentrations.
9 - One-tenth the noncarcinogenic screening level is less than the carcinogenic screening level; therefore, the noncarcinogenic screening level is presented.
10 - The screening value is for trivalent chromium.
11 - In accordance with USEPA Region I guidance, only total metals groundwater results are used in the risk assessment; dissolved metals results are presented for information purposes only and are not used for COPC selection.
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level

For elimination as a COPC:
BSL = Below COPC Screening Level
NUT = Essential nutrient
Reg. I = USEPA Region I guidance

Associated Samples:
MW03-15I-NWG-092914
MW03-16I-NWG-102814
MW03-16I-NWG-102814-D
MW03-17I-NWG-100214

TABLE A-3.5

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	Construction Worker RBC[1] (mg/kg)	Estimated ILCR	Primary Target Organs	Construction Worker RBC[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	Central Nervous System	47000	0.23
Cobalt	7.2	79	9.1E-08	Thyroid	180	0.040
Iron	17900	NA	NA	Gastrointestinal System	410000	0.044
Manganese	177	NA	NA	Central Nervous System	490	0.36
		Total ILCR	9E-08		Total HI	0.7

1 - Risk-based concentrations (RBCs) were calculated using toxicity criteria from USEPA, January 2015 and exposure assumptions based on USEPA guidance when applicable (see text).

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RBC = Risk-Based Concentration
UCL = Upper Confidence Limit

TABLE A-3.6

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SHALLOW GROUNDWATER
HUMAN HEALTH RISK EVALUATION - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	Maximum Concentration[1] (ug/L)	Construction Worker PRG[2] (ug/L)	Estimated ILCR	Primary Target Organs	Construction Worker PRG[2] (ug/L)	Estimated HQ
Trichloroethene	3.7	5.1	7.3E-07	Cardiovascular System, Fetotoxicity, Immune	1400	0.0026
Cobalt	7.3	NA	NA	Thyroid	58	0.13
Manganese	110	NA	NA	Central Nervous System	470	0.23
		Total ILCR	7E-07		Total HI	0.4

1 - The maximum concentration was used in place of the 95% UCL concentration because there were only three samples in the data set.
2 - Preliminary remediation goals (PRGs) were calculated using toxicity criteria from USEPA, January 2015 and exposure assumptions based on USEPA guidance when applicable (see text).

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
PRG = Preliminary Remediation Goal
UCL = Upper Confidence Limit

TABLE A-3.7

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	USEPA Industrial RSL[1] (mg/kg)	Estimated ILCR	Primary Target Organs	USEPA Industrial RSL[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	Central Nervous System	1100000	0.0097
Cobalt	7.2	1900	3.8E-09	Thyroid	350	0.021
Iron	17900	NA	NA	Gastrointestinal System	820000	0.022
Manganese	177	NA	NA	Central Nervous System	26000	0.0068
		Total ILCR	4E-09		Total HI	0.06

1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

TABLE A-3.8

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	Recreational RBC[1] (mg/kg)	Estimated ILCR	Primary Target Organs	Recreational RBC[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	Central Nervou System	550000	0.019
Cobalt	7.2	72000	1.0E-10	Thyroid	160	0.045
Iron	17900	NA	NA	Gastrointestinal System	380000	0.047
Manganese	177	NA	NA	Central Nervou System	13000	0.014
		Total ILCR	1E-10		Total HI	0.1

1 - Risk-based concentrations (RBCs) were calculated using toxicity criteria from USEPA, January 2015 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic RBCs are for the lifelong recreational user. Non-carcinogenic RBCs are for the child recreational user.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RBC = Risk-Based Concentration
UCL = Upper Confidence Limit

TABLE A-3.9

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	USEPA Residential RSL[1] (mg/kg)	Estimated ILCR	Primary Target Organs	USEPA Residential RSL[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	Central Nervous System	77000	0.14
Cobalt	7.2	420	1.7E-08	Thyroid	23	0.31
Iron	17900	NA	NA	Gastrointestinal System	55000	0.33
Manganese	177	NA	NA	Central Nervous System	1800	0.10
		Total ILCR	2E-08		Total HI	0.9

1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

TABLE A-3.10

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SHALLOW GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	Maximum Concentration[1] (ug/L)	USEPA Tap Water RSL[2] (ug/L)	Estimated ILCR	Primary Target Organs	USEPA Tap Water RSL[2] (ug/L)	Estimated HQ
Trichloroethene	3.7	0.49	7.6E-06	Cardiovascular System, Fetotoxicity, Immune	2.8	1.3
Cobalt	7.3	NA	NA	Thyroid	6	1.2
Manganese	110	NA	NA	Central Nervous System	430	0.3
		Total ILCR	8E-06		Total HI	**3**

1 - The maximum concentration was used in place of the 95% UCL concentration because were only three samples in the data set.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Organ HIs

Total CNS HI =	0.3
Total Kidney HI =	1
Total Liver HI =	1
Total Thyroid HI =	1

TABLE A-3.11

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO INTERMEDIATE GROUNDWATER
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	Maximum Concentration[1] (ug/L)	USEPA Tap Water RSL[2] (ug/L)	Estimated ILCR	Primary Target Organs	USEPA Residential RSL[2] (ug/L)	Estimated HQ
1,1,2,2-Tetrachloroethane[3]	65	0.076	8.6E-04	Liver	360	0.18
1,1,2-Trichloroethane	5.6	0.28	2.0E-05	Whole Body	0.41	14
cis-1,2-Dichloroethene	100	NA	NA	Kidney	36	2.8
trans-1,2-Dichloroethene	44	NA	NA	Blood	360	0.12
Trichloroethene[3]	170	0.49	3.5E-04	Cardiovascular System, Fetotoxicity, Immune	2.8	61
Vinyl chloride[3]	2.4	0.019	1.3E-04	Liver	44	0.055
Cobalt	16.7	NA	NA	Thyroid	6	2.8
Iron	10800	NA	NA	Gastrointestinal System	14000	0.8
Manganese	373	NA	NA	Central Nervous System	430	0.9
		Total ILCR	**1E-03**		Total HI	**82**

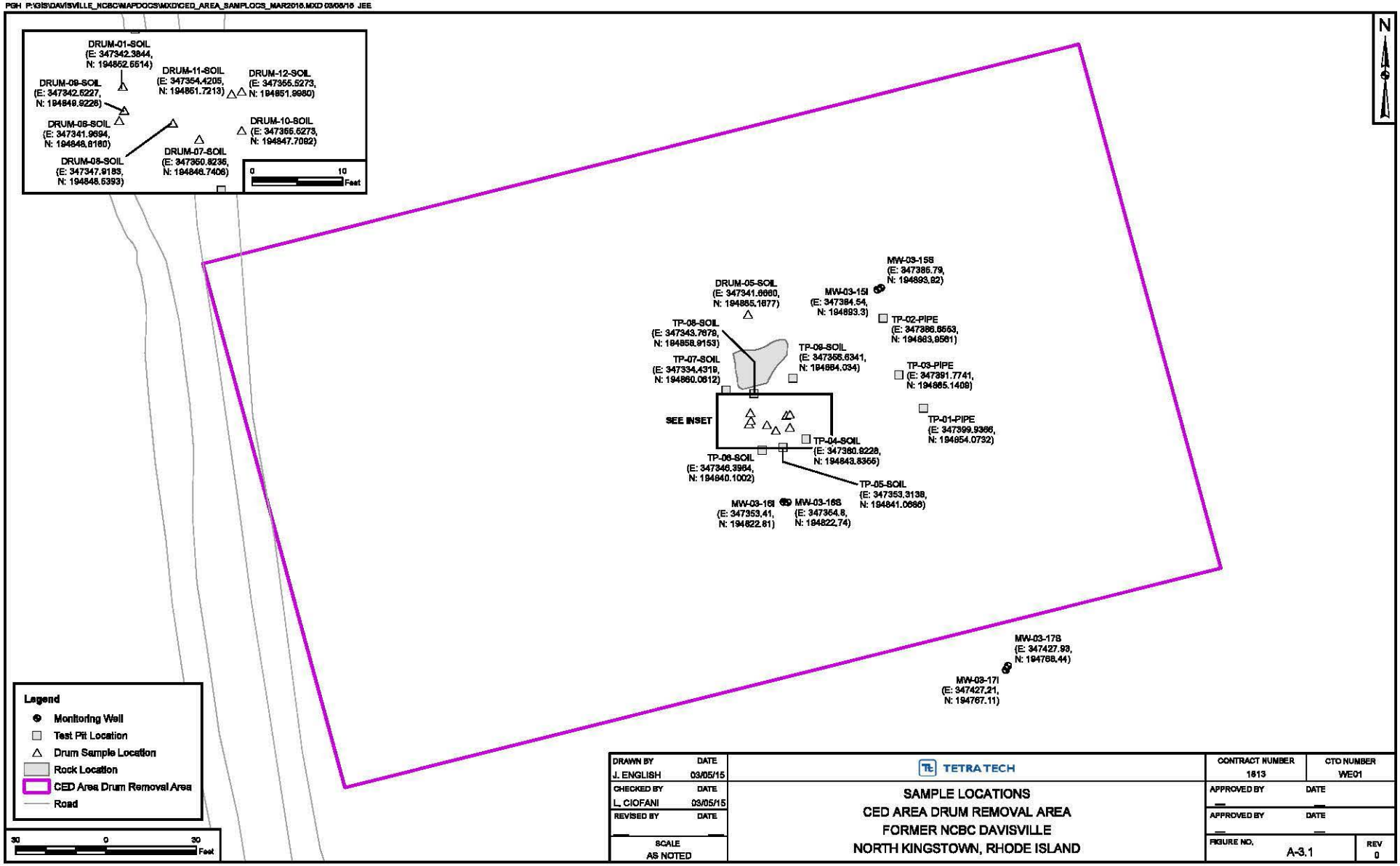
1 - The maximum concentration was used in place of the 95% UCL concentration because were only three samples in the data set.
2 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Organ His

Total Blood HI =	0.1
Total Cardiovascular System HI =	61
Total Central Nervous System HI =	0.9
Total Fetotoxicity HI =	61
Total Gastrointestinal System HI =	0.8
Total Immune HI =	61
Total Kidney HI =	3
Total Liver HI =	0.2
Total Thyroid HI =	3
Total Whole Body HI =	14

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\CED_AREA_SAMPLOCS_MAR2015.MXD 03/05/15 JEE



DRAWN BY: J. ENGLISH	DATE: 03/05/15	TETRA TECH	CONTRACT NUMBER: 1813 / CTO NUMBER: WE01
CHECKED BY: L. CIOFANI	DATE: 03/05/15	SAMPLE LOCATIONS CED AREA DRUM REMOVAL AREA FORMER NCBC DAVISVILLE NORTH KINGSTOWN, RHODE ISLAND	APPROVED BY / DATE
REVISED BY	DATE		APPROVED BY / DATE
SCALE: AS NOTED			FIGURE NO.: A-3.1 / REV: 0

Risk Estimates Including Arsenic

TABLE A-3.12

SUMMARY OF CONSTRUCTION WORKER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - INCLUDING ARSENIC
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	Construction Worker RBC[1] (mg/kg)	Estimated ILCR	Primary Target Organs	Construction Worker RBC[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	CNS	47000	0.23
Arsenic	2.7	32	8.4E-08	Skin, CVS	96	0.028
Cobalt	7.2	79	9.1E-08	Thyroid	180	0.040
Iron	17900	NA	NA	GS	410000	0.044
Manganese	177	NA	NA	CNS	490	0.36
		Total ILCR	2E-07		Total HI	0.7

1 - Risk-based concentrations (RBCs) were calculated using toxicity criteria from USEPA, January 2015 and exposure assumptions based on USEPA guidance when applicable (see text).

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RBC = Risk-Based Concentration
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE A-3.13

SUMMARY OF INDUSTRIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL - INCLUDING ARSENIC
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	USEPA Industrial RSL[1] (mg/kg)	Estimated ILCR	Primary Target Organs	USEPA Industrial RSL[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	CNS	1100000	0.0097
Arsenic	2.7	3.0	9.0E-07	Skin, CVS	480	0.0056
Cobalt	7.2	1900	3.8E-09	Thyroid	350	0.021
Iron	17900	NA	NA	GS	820000	0.022
Manganese	177	NA	NA	CNS	26000	0.0068
		Total ILCR	9E-07		Total HI	0.06

1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE A-3.14

SUMMARY OF RECREATIONAL USER RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	Recreational RBC[1] (mg/kg)	Estimated ILCR	Primary Target Organs	Recreational RBC[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	CNS	550000	0.019
Arsenic	2.7	4.1	6.6E-07	Skin, CVS	216	0.013
Cobalt	7.2	72000	1.0E-10	Thyroid	160	0.045
Iron	17900	NA	NA	GS	380000	0.047
Manganese	177	NA	NA	CNS	13000	0.014
		Total ILCR	7E-07		Total HI	0.1

1 - Risk-based concentrations (RBCs) were calculated using toxicity criteria from USEPA, January 2015 and exposure assumptions based on USEPA guidance when applicable (see text).
Carcinogenic RBCs are for the lifelong recreational user. Non-carcinogenic RBCs are for the child recreational user.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RBC = Risk-Based Concentration
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

TABLE A-3.16

SUMMARY OF RESIDENTIAL RISKS AND HAZARD INDICES FOR EXPOSURES TO SUBSURFACE SOIL
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

	Incremental Lifetime Carcinogenic Risk (ILCR)			Estimated Non-Carcinogenic Hazard Quotient (HQ)		
Chemical	95% UCL (mg/kg)	USEPA Residential RSL[1] (mg/kg)	Estimated ILCR	Primary Target Organs	USEPA Residential RSL[1] (mg/kg)	Estimated HQ
Aluminum	10700	NA	NA	CNS	77000	0.14
Arsenic	2.7	0.67	4.0E-06	Skin, CVS	34	0.079
Cobalt	7.2	420	1.7E-08	Thyroid	23	0.31
Iron	17900	NA	NA	GS	55000	0.33
Manganese	177	NA	NA	CNS	1800	0.10
		Total ILCR	4E-06		Total HI	1

1 - USEPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, January 2015.

HI = Hazard Index
HQ = Hazard Quotient
ILCR = Incremental Lifetime Carcinogenic Risk
NA = Not Applicable
RSL = Regional Screening Level
UCL = Upper Confidence Limit

Target Levels: cumulative ILCR = 1E-05 for carcinogens, cumulative HI = 1 for noncarcinogens

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
GS = Gastrointestinal System

ProUCL Output – Subsurface Soil

PROUCL OUTPUT - SUBSURFACE SOIL

UCL Statistics for Uncensored Full Data Sets	
User Selected Options	
Date/Time of Computation	8/6/2014 1:34:41 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aluminum

General Statistics			
Total Number of Observations	18	Number of Distinct Observations	14
		Number of Missing Observations	1
Minimum	1100	Mean	6506
Maximum	12000	Median	7600
SD	4052	Std. Error of Mean	955.1
Coefficient of Variation	0.623	Skewness	-0.355

Normal GOF Test		
Shapiro Wilk Test Statistic	0.845	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.229	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8167	95% Adjusted-CLT UCL (Chen-1995)	7991
		95% Modified-t UCL (Johnson-1978)	8154

Gamma GOF Test		
A-D Test Statistic	1.888	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.755	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.298	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.207	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	1.669	k star (bias corrected MLE)	1.428
Theta hat (MLE)	3899	Theta star (bias corrected MLE)	4557
nu hat (MLE)	60.07	nu star (bias corrected)	51.39
MLE Mean (bias corrected)	6506	MLE Sd (bias corrected)	5445
		Approximate Chi Square Value (0.05)	35.93
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	34.69

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	9306	95% Adjusted Gamma UCL (use when n<50)	9638

Aluminum (continued)

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.749	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.324	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.209	Data Not Lognormal at 5% Significance Level	
Data Not Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	7.003	Mean of logged Data	8.452
Maximum of Logged Data	9.393	SD of logged Data	0.959
Assuming Lognormal Distribution			
95% H-UCL	13516	90% Chebyshev (MVUE) UCL	12524
95% Chebyshev (MVUE) UCL	14952	97.5% Chebyshev (MVUE) UCL	18321
99% Chebyshev (MVUE) UCL	24941		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution (0.05)			
Nonparametric Distribution Free UCLs			
95% CLT UCL	8077	95% Jackknife UCL	8167
95% Standard Bootstrap UCL	8021	95% Bootstrap-t UCL	8066
95% Hall's Bootstrap UCL	7974	95% Percentile Bootstrap UCL	8050
95% BCA Bootstrap UCL	7933		
90% Chebyshev(Mean, Sd) UCL	9371	95% Chebyshev(Mean, Sd) UCL	10669
97.5% Chebyshev(Mean, Sd) UCL	12470	99% Chebyshev(Mean, Sd) UCL	16009
Suggested UCL to Use			
95% Chebyshev (Mean, Sd) UCL	10669		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PROUCL OUTPUT - SUBSURFACE SOIL

Arsenic			
General Statistics			
Total Number of Observations	18	Number of Distinct Observations	17
		Number of Missing Observations	1
Minimum	1.46	Mean	2.226
Maximum	5.62	Median	1.925
SD	0.973	Std. Error of Mean	0.229
Coefficient of Variation	0.437	Skewness	2.951
Normal GOF Test			
Shapiro Wilk Test Statistic	0.604	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.35	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.209	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.625	95% Adjusted-CLT UCL (Chen-1995)	2.774
		95% Modified-t UCL (Johnson-1978)	2.651
Gamma GOF Test			
A-D Test Statistic	1.982	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.74	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.296	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.204	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	8.805	k star (bias corrected MLE)	7.374
Theta hat (MLE)	0.253	Theta star (bias corrected MLE)	0.302
nu hat (MLE)	317	nu star (bias corrected)	265.5
MLE Mean (bias corrected)	2.226	MLE Sd (bias corrected)	0.82
		Approximate Chi Square Value (0.05)	228.7
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	225.5
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	2.584	95% Adjusted Gamma UCL (use when n<50)	2.621
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.758	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.265	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.209	Data Not Lognormal at 5% Significance Level	
Data Not Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	0.378	Mean of logged Data	0.742
Maximum of Logged Data	1.726	SD of logged Data	0.315

Arsenic (continued)											
Assuming Lognormal Distribution											
95% H-UCL					2.546	90% Chebyshev (MVUE) UCL					2.699
95% Chebyshev (MVUE) UCL					2.925	97.5% Chebyshev (MVUE) UCL					3.238
99% Chebyshev (MVUE) UCL					3.852						
Nonparametric Distribution Free UCL Statistics											
Data do not follow a Discernible Distribution (0.05)											
Nonparametric Distribution Free UCLs											
95% CLT UCL					2.603	95% Jackknife UCL					2.625
95% Standard Bootstrap UCL					2.588	95% Bootstrap-t UCL					3.601
95% Hall's Bootstrap UCL					4.544	95% Percentile Bootstrap UCL					2.638
95% BCA Bootstrap UCL					2.891						
90% Chebyshev(Mean, Sd) UCL					2.914	95% Chebyshev(Mean, Sd) UCL					3.225
97.5% Chebyshev(Mean, Sd) UCL					3.658	99% Chebyshev(Mean, Sd) UCL					4.507
Suggested UCL to Use											
95% Student's-t UCL					2.625	or 95% Modified-t UCL					2.651
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

PROUCL OUTPUT - SUBSURFACE SOIL

Cobalt			
General Statistics			
Total Number of Observations	18	Number of Distinct Observations	18
		Number of Missing Observations	1
Minimum	4.6	Mean	6.389
Maximum	11.7	Median	5.69
SD	1.985	Std. Error of Mean	0.468
Coefficient of Variation	0.311	Skewness	1.879
Normal GOF Test			
Shapiro Wilk Test Statistic	0.76	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.253	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.209	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.203	95% Adjusted-CLT UCL (Chen-1995)	7.38
		95% Modified-t UCL (Johnson-1978)	7.237
Gamma GOF Test			
A-D Test Statistic	1.142	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.739	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.208	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.203	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	13.87	k star (bias corrected MLE)	11.59
Theta hat (MLE)	0.461	Theta star (bias corrected MLE)	0.551
nu hat (MLE)	499.3	nu star (bias corrected)	417.4
MLE Mean (bias corrected)	6.389	MLE Sd (bias corrected)	1.876
		Approximate Chi Square Value (0.05)	371
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	366.8
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	7.187	95% Adjusted Gamma UCL (use when n<50)	7.269
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.855	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.189	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.209	Data appear Lognormal at 5% Significance Level	
Data appear Approximate Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.526	Mean of logged Data	1.818
Maximum of Logged Data	2.46	SD of logged Data	0.264

Cobalt (continued)											
Assuming Lognormal Distribution											
95% H-UCL					7.169	90% Chebyshev (MVUE) UCL					7.565
95% Chebyshev (MVUE) UCL					8.108	97.5% Chebyshev (MVUE) UCL					8.863
99% Chebyshev (MVUE) UCL					10.34						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					7.159	95% Jackknife UCL					7.203
95% Standard Bootstrap UCL					7.133	95% Bootstrap-t UCL					7.937
95% Hall's Bootstrap UCL					11.11	95% Percentile Bootstrap UCL					7.204
95% BCA Bootstrap UCL					7.406						
90% Chebyshev(Mean, Sd) UCL					7.793	95% Chebyshev(Mean, Sd) UCL					8.429
97.5% Chebyshev(Mean, Sd) UCL					9.311	99% Chebyshev(Mean, Sd) UCL					11.04
Suggested UCL to Use											
95% Student's-t UCL					7.203	or 95% Modified-t UCL					7.237
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

PROUCL OUTPUT - SUBSURFACE SOIL

Iron

General Statistics

Total Number of Observations	18	Number of Distinct Observations	16
		Number of Missing Observations	1
Minimum	2700	Mean	14261
Maximum	33400	Median	14250
SD	8994	Std. Error of Mean	2120
Coefficient of Variation	0.631	Skewness	0.382

Normal GOF Test

Shapiro Wilk Test Statistic	0.922	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.158	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17949	95% Adjusted-CLT UCL (Chen-1995)	17952
		95% Modified-t UCL (Johnson-1978)	17981

Gamma GOF Test

A-D Test Statistic	1.008	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.753	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.247	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.206	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.97	k star (bias corrected MLE)	1.679
Theta hat (MLE)	7238	Theta star (bias corrected MLE)	8494
nu hat (MLE)	70.93	nu star (bias corrected)	60.44
MLE Mean (bias corrected)	14261	MLE Sd (bias corrected)	11006
		Approximate Chi Square Value (0.05)	43.56
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	42.19

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	19786	95% Adjusted Gamma UCL (use when n<50)	20431

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.834	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.288	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.209	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	7.901	Mean of logged Data	9.291
Maximum of Logged Data	10.42	SD of logged Data	0.858

Iron (continued)

Assuming Lognormal Distribution	
95% H-UCL	26014
90% Chebyshev (MVUE) UCL	25310
95% Chebyshev (MVUE) UCL	29867
97.5% Chebyshev (MVUE) UCL	36192
99% Chebyshev (MVUE) UCL	48617
Nonparametric Distribution Free UCL Statistics	
Data appear to follow a Discernible Distribution at 5% Significance Level	
Nonparametric Distribution Free UCLs	
95% CLT UCL	17748
95% Jackknife UCL	17949
95% Standard Bootstrap UCL	17595
95% Bootstrap-t UCL	18246
95% Hall's Bootstrap UCL	18255
95% Percentile Bootstrap UCL	17694
95% BCA Bootstrap UCL	17733
90% Chebyshev(Mean, Sd) UCL	20621
95% Chebyshev(Mean, Sd) UCL	23501
97.5% Chebyshev(Mean, Sd) UCL	27500
99% Chebyshev(Mean, Sd) UCL	35353
Suggested UCL to Use	
95% Student's-t UCL	17949

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SUBSURFACE SOIL

Manganese			
General Statistics			
Total Number of Observations	18	Number of Distinct Observations	17
		Number of Missing Observations	1
Minimum	104	Mean	152.2
Maximum	371	Median	135.5
SD	59.59	Std. Error of Mean	14.05
Coefficient of Variation	0.391	Skewness	3.169
Normal GOF Test			
Shapiro Wilk Test Statistic	0.633	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.209	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	176.7	95% Adjusted-CLT UCL (Chen-1995)	186.5
		95% Modified-t UCL (Johnson-1978)	178.4
Gamma GOF Test			
A-D Test Statistic	1.18	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.739	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.192	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.203	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data follow Appr. Gamma Distribution at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	10.65	k star (bias corrected MLE)	8.916
Theta hat (MLE)	14.29	Theta star (bias corrected MLE)	17.07
nu hat (MLE)	383.6	nu star (bias corrected)	321
MLE Mean (bias corrected)	152.2	MLE Sd (bias corrected)	50.98
		Approximate Chi Square Value (0.05)	280.5
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	276.8
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	174.2	95% Adjusted Gamma UCL (use when n<50)	176.5
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.818	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.167	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.209	Data appear Lognormal at 5% Significance Level	
Data appear Approximate Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	4.644	Mean of logged Data	4.978
Maximum of Logged Data	5.916	SD of logged Data	0.29

Manganese (continued)											
Assuming Lognormal Distribution											
95% H-UCL	172.3					90% Chebyshev (MVUE) UCL	182.3				
95% Chebyshev (MVUE) UCL	196.5					97.5% Chebyshev (MVUE) UCL	216.1				
99% Chebyshev (MVUE) UCL	254.8										
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL	175.3					95% Jackknife UCL	176.7				
95% Standard Bootstrap UCL	174.5					95% Bootstrap-t UCL	203.4				
95% Hall's Bootstrap UCL	270					95% Percentile Bootstrap UCL	178.4				
95% BCA Bootstrap UCL	189.2										
90% Chebyshev(Mean, Sd) UCL	194.4					95% Chebyshev(Mean, Sd) UCL	213.4				
97.5% Chebyshev(Mean, Sd) UCL	239.9					99% Chebyshev(Mean, Sd) UCL	292				
Suggested UCL to Use											
95% Adjusted Gamma UCL	176.5										
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

ATTACHMENT A-4

EXPOSURE ASSUMPTIONS

TABLE A-4.1

SUMMARY OF EXPOSURE ASSUMPTIONS
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Parameter	Current/Future Construction Worker	Future Industrial Worker[1]	Future Recreational User		Hypothetical On-Site Resident	
			Child	Adult	Child[1]	Adult[1]
All Exposures						
C_{soil} (mg/kg)	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]
C_{gw} (mg/L)	Maximum or 95% UCL[2]	--	--	--	Maximum or 95% UCL[2]	Maximum or 95% UCL[2]
ED (years)	1[3]	25[4]	6[4]	20[4]	6[4]	20[4]
BW (kg)	80[4]	80[4]	15[4]	80[4]	15[4]	80[4]
AT_n (days)	365[4]	9,125[4]	2,190[4]	7,300[4]	2,190[4]	7,300[4]
AT_c (days)	25,550[4]	25,550[4]	25,550[4]	25,550[4]	25,550[4]	25,550[4]
Incidental Ingestion/Dermal Contact with Soil						
IR (mg/day)	330[5]	100[4]	200[4]	100[4]	200[4]	100[4]
EF-Soil (days/year)	150[3]	250[4]	100[6]	100[6]	350[4]	350[4]
FI (unitless)	1	1	0.5[7]	0.5[7]	1	1
SA (cm^2/day)	3,470[4]	3,470[4]	2,690[4]	6,032[4]	2,690[4]	6,032[4]
AF (mg/cm^2)	0.3[8]	0.12[4]	0.2[4]	0.07[4]	0.2[4]	0.07[4]
ABS (unitless)	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]	chemical-specific[8]
CF (kg/mg)	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Inhalation Fugitive Dust/Volatile Emissions from Soil						
C_{air} (mg/m^3)	calculated[5]	calculated[5]	calculated[5]	calculated[5]	calculated[5]	calculated[5]
ET (hours/day)	8[9]	8[4]	4[3]	4[3]	24[4]	24[4]
EF (days/year)	150[3]	250[4]	100[6]	100[6]	350[4]	350[4]
PEF (m^3/kg)	1.40E+6[5]	1.36E+9[10]	1.36E+9[11]	1.36E+9[11]	1.36E+9[10]	1.36E+9[10]
VF (m^3/kg)	chemical-specific[10]	chemical-specific[11]	chemical-specific[10]	chemical-specific[10]	chemical-specific[11]	chemical-specific[11]

TABLE A-4.1

SUMMARY OF EXPOSURE ASSUMPTIONS
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Parameter	Current/Future Construction Worker	Future Industrial Worker[1]	Future Recreational User		Hypothetical On-Site Resident	
			Child	Adult	Child[1]	Adult[1]
Ingestion/Dermal Contact with Groundwater						
IR (L/day)	0.05[3]	--	--	--	0.78[4]	2.5[4]
EF (days/year)	30[3]	--	--	--	350[4]	350[4]
ET (hours/day)	4[3]	--	--	--	0.54[4]	0.71[4]
EV (events/day)	1[3]	--	--	--	1[3]	1[3]
SA (cm^2)	3,470[4]	--	--	--	6,378[4]	20,900[4]
Kp (cm/hour), t* (hour/event), t (hour), and B (unitless)	chemical-specific[8]	--	--	--	chemical-specific[8]	chemical-specific[8]
Inhalation of Volatiles from Groundwater						
C_{air} (mg/m^3)	calculated[12]	--	--	--	calculated[13]	calculated[13]
ET (hours/day)	4[3]	--	--	--	24[4]	24[4]
EF (days/year)	30[3]	--	--	--	350[4]	350[4]
VF (L/m^3)	chemical-specific[12]	--	--	--	0.5[13]	0.5[13]

Notes:
1 - Exposure assumptions for this receptor are incorporated into the Regional Screening Levels (RSLs) (USEPA, January 2015) used in the risk ratio evaluation.
2 - USEPA, 2002. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.
3 - Professional judgment (e.g., assumes that construction activities take place for 150 days for one year, construction workers have contact with groundwater for 4 hours/day for 30 days/year with an ingestion rate of 0.05 L/day, and recreational users are on-site for four hours per day).
4 - USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.
5 - USEPA, 2002: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9365.4-24.
6 - Assumes that recreational users visit the site approximately four days per month during the warmer weather months (April through September).
7 - Assumes recreational users are at the site only a portion of the day.
8 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.
9 - Assumes an eight hour workshift.
10 - USEPA, 2015: RSL Calculator Internet site at http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search. Site-specific values for Hartford, Connecticut.

TABLE A-4.1

SUMMARY OF EXPOSURE ASSUMPTIONS
HUMAN HEALTH RISK ASSESSMENT - CED AREA DRUM REMOVAL AREA
FORMER NAVAL CONSTRUCTION BATTALION CENTER DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Exposure Parameter	Current/Future Construction Worker	Future Industrial Worker[(1)]	Future Recreational User		Hypothetical On-Site Resident	
			Child	Adult	Child[(1)]	Adult[(1)]

11 - Default value used in RSL calculation (USEPA, January 2015).
12 - VDEQ, May 2013. Virginia Department of Environmental Quality (VDEQ, online - http://www.deq.state.va.us/Programs/LandProtectionRevitalization/RemediationProgram/VoluntaryRemediationProgram.aspx).
13 - USEPA, 1991: Human Health Evaluation Manual, Part B: Development of Risk-based Preliminary Remediation Goals. OSWER Directive 9285.7-01B.

ABS	Absorption factor
AF	Soil-to-skin adherence factor
AT_c	Averaging time for carcinogenic effects
AT_n	Averaging time for noncarcinogenic effects
B	Dimensionless constant
BW	Body weight
CF	Conversion factor
$C_{soil/gw/air}$	Exposure concentration for soil/groundwater/air
ED	Exposure duration
EF	Exposure frequency
ET	Exposure time
EV	Event frequency
FI	Fraction ingested from contaminated source
IR	Ingestion rate
Kp	Permeability constant
PEF	Particulate Emission Factor
SA	Skin surface area available for contact
t	Lag time
t*	Time to reach steady state
VF	Volatilization Factor

ATTACHMENT A-5

RISK-BASED CONCENTRATIONS CALCULATIONS

ATTACHMENT A-5

RISK-BASED CONCENTRATION CALCULATION METHODOLOGY

1.0 Incidental Ingestion of Soil

Direct physical contact with soil at the CED Area Drum Removal Area may result in the incidental ingestion of chemicals. Chemical intake for the incidental ingestion of soil is estimated according to standard United States Environmental Protection Agency (USEPA) guidance and the equations presented in the risk-based concentration (RBC) calculation sheets in Attachment A-5.

Most of the exposure assumptions used to estimate chemical intakes from incidental ingestion of soil (and thus to calculate RBCs presented in Attachment A-5) are based on default assumptions described in the standard USEPA guidance and are summarized in the construction worker and recreational user calculation spreadsheets (Attachment A-5). The following paragraph briefly discusses the non-default receptor-specific exposure assumptions for incidental ingestion of soil used in this Human Health Risk Assessment (HHRA).

The selected exposure frequency assumptions consider anticipated receptor activities at the study areas and sites evaluated. It is assumed that construction workers assigned to future excavation projects at the study areas/sites are exposed to soil for 150 days per year for 1 year. It is assumed that recreational users are exposed to soil approximately 4 days per week during the warmer weather months (April through September, or 100 days per year). A fraction ingested (FI) of 0.5 was used for child and adult recreational users exposed to soil, which assumes that recreational receptors are at the study area/site for only a portion of the day.

As noted in the construction worker and recreational user calculation spreadsheets (Attachment A-5), a value of 0.6 was used for the relative bioavailability (RBA) for arsenic (USEPA, 2012). An RBA value of 1 was used for all other chemicals.

2.0 Dermal Contact with Soil

Direct physical contact with soil may result in the dermal absorption of chemicals. Exposure associated with dermal contact with soil is estimated using USEPA guidance (USEPA, 2004) according to the equation presented in the RBC calculation sheets.

Most of the exposure assumptions used to estimate chemical intakes from dermal contact with soil are based on the default assumptions described in the standard USEPA guidance and are summarized in the construction worker and recreational user calculation spreadsheets. The following paragraphs briefly

discuss non-default receptor-specific exposure assumptions for dermal contact with soil used in the HHRA.

The same exposure frequencies and durations recommended for the evaluation of incidental ingestion of soil are used to estimate chemical intakes for dermal contact with soil. The soil adherence factors presented are those listed in Exhibits 3.3 and 3.5 of Risk Assessment Guidance for Superfund (RAGS) Part E. To the extent possible, chemical-specific dermal absorption factors provided in RAGS Part E were used to evaluate the chemicals of potential concern (COPCs) for soil. However, dermal absorption factors are only available for the short list of chemicals listed in Exhibit 3-4 of RAGS Part E. A value of "0" was used for the absorption factor for chemicals lacking dermal absorption factors in RAGS Part E.

For the constituents identified as COPCs in soil, the following dermal absorption factors were used (USEPA, 2004):

- Polycyclic aromatic hydrocarbons (PAHs) - 0.13
- Arsenic - 0.03

3.0 Inhalation of Air Containing Fugitive Dust/Volatiles Emitted from Soil

Inhalation exposures have been included in calculation of the USEPA Regional Screening Levels (RSLs) used to evaluate hypothetical future residents and industrial workers, and inhalation exposures were also included in RBC calculations for construction workers and recreational users. The RBC calculation spreadsheets present the equations used for both particulates and vapors/gases (USEPA, 2009).

Some of the exposure assumptions used to estimate chemical intakes from inhalation of fugitive dusts/volatile emissions from surface and subsurface soils are based on default assumptions described in the standard USEPA guidance and are summarized in the RBC calculation sheets. The same exposure frequencies and durations used to estimate incidental ingestion of soil intakes are used to estimate exposure via inhalation of fugitive dust/volatile emissions for subsurface soils. The concentrations of chemicals in air resulting from emissions from soil are developed following procedures presented in USEPA's Soil Screening Guidance (USEPA, 2002) and are calculated using the equations presented in the RBC calculation sheets.

The particulate emissions factor (PEF) used in the equation relates the concentration of the chemical in soil to the concentration in dust particles in air. A PEF value of $1.36 \times 10^{+09}$ m^3/kg was obtained from USEPA's RSL Calculator Internet site at http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search. This is the default value for Hartford, Connecticut, which is the closest city to Former NCBC Davisville listed on the Internet site. Because air emissions resulting from fugitive dust emissions settings will be different than

dust emissions generated during construction activities, a separate PEF was used for construction activities. The PEF for construction workers ($1.40 \times 10^{+6}$ m^3/kg) was calculated using the equations presented in the supplemental SSL guidance document (USEPA, 2002). The PEF for the construction worker is more conservative than the PEF used for other receptors because it is assumed that construction workers are exposed to dusty conditions. A sample calculation for the PEF is presented in Attachment A-5.

Ambient air concentrations resulting from the volatilization of COPCs from soil were not calculated in this HHRA because no volatile chemicals were selected as COPCs.

4.0 Direct/Incidental Ingestion of Groundwater

Direct ingestion of groundwater at the CED Area Drum Removal Area and Sites 02/03 is likely limited to exposure that would occur under a future residential scenario. Incidental ingestion of groundwater by construction workers may occur during excavation activities if groundwater is encountered in a trench. Ingestion exposures have been included in calculation of the USEPA RSLs for tap water used to evaluate hypothetical future residents. Incidental ingestion exposures were also included in RBC calculations for construction workers. The RBC calculation spreadsheets present the equations used for incidental ingestion of groundwater (USEPA, 1989).

Construction workers were assumed to be exposed to groundwater for 30 days per year for 1 year, which is less frequent than soil exposures. A shorter exposure frequency is recommended for a construction worker exposed to groundwater than that recommended for exposure to soil because it is unlikely that a construction worker would have direct contact with groundwater on a daily basis during a construction project. An ingestion rate of 0.05 L/day was assumed for construction workers exposed to groundwater.

5.0 Dermal Contact with Groundwater

Dermal contact with groundwater at the CED Area Drum Removal Area and Sites 02/03 is limited to exposure that would occur under residential and construction scenarios. Hypothetical future site residential receptors are assumed to use groundwater for domestic purposes (e.g., bathing, showering, and dish washing) that could result in dermal exposure. Short-term dermal exposure is assumed to occur for the construction worker during excavation activities. Dermal contact exposures have been included in calculation of the USEPA RSLs for tap water used to evaluate hypothetical future residents. Dermal contact exposures were also included in RBC calculations for construction workers. The RBC calculation spreadsheets present the equations used for dermal contact with groundwater (USEPA, 1989).

USEPA has not established default exposure frequency assumptions for a construction worker exposed to groundwater. Consequently, it was assumed that the construction worker would be exposed to groundwater for 4 hours per day for 30 days per year. A shorter exposure frequency is recommended for a construction worker exposed to groundwater than that recommended for exposure to soil because it is unlikely that a construction worker would have direct contact with groundwater on a daily basis during a construction project. The exposed surface area of the body available for contact is based on assumed activities and is similar to the assumptions outlined for dermal contact with soil.

The absorbed dose per event (DA_{event}) was estimated using a non-steady-state approach for organic compounds and a traditional steady-state approach for inorganics. Equations for the calculation of DA_{event} are presented in the RBC calculation spreadsheets. Values for chemical-specific parameters (t^*, K_p, FA, τ, and B) were obtained from the current dermal guidance (USEPA, 2004, Exhibit B-3) and presented summarized in the construction worker calculation spreadsheets (Attachment A-5). If published values were not available for a particular compound, they were calculated using equations provided in the USEPA dermal guidance. The dermal permeability (K_p) values recommended in the USEPA dermal guidance (USEPA, 2004) were used to calculate DA_{event} values for inorganic COPCs.

6.0 Inhalation of Volatiles from Groundwater

Groundwater exposure may also result in chemical intake through inhalation if the water resource is used as a domestic water supply or is exposed during construction activities, and volatiles are present in the groundwater. This exposure route is plausible for residential receptors that may be exposed while showering, bathing, washing dishes, etc., or for construction workers contacting shallow groundwater during excavation activities. Inhalation exposures have been included in calculation of the USEPA RSLs for tap water used to evaluate hypothetical future residents. Inhalation exposures were also included in RBC calculations for construction workers. The RBC calculation spreadsheets present the equations used for construction worker inhalation of groundwater (USEPA, 2009).

Construction workers may be exposed to COPCs that have volatilized from groundwater when an excavation exposes the shallow water table. The same exposure frequencies and times used to estimate intake from dermal contact with groundwater were used to evaluate intake from inhalation of volatiles from groundwater during construction.

No well-established models are available for estimating migration of volatiles from groundwater into a construction or utility trench. To estimate the EPCs for air in a construction trench, the HHRA used an approach suggested by the Virginia Department of Environmental Quality (VDEQ) (VDEQ, 2007), which is based on a combination of a vadose zone model (to estimate volatilization of gases from contaminated

groundwater into a trench), and a box model (to estimate contaminant dispersion from the air inside the trench to the above-ground atmosphere). The VDEQ methodology is described in the following paragraphs.

The airborne concentration of a contaminant in a trench can be estimated using the following equation:

$$C_{air} = C_{GW} \times VF$$

where:

C_{air}	=	contaminant concentration in air in the trench ($\mu g/m^3$)
C_{GW}	=	concentration of contaminant in groundwater ($\mu g/L$)
VF	=	volatilization factor (L/m^3)

It was assumed that a construction project could excavate to 15 feet bgs or less. If the depth to groundwater at a site is less than 15 feet, the VDEQ model assumes that a worker would encounter groundwater when digging an excavation or trench. The worker would then be directly exposed to the groundwater. The worker would also be exposed to contaminants in the air inside the trench as a result of volatilization from groundwater pooling in the trench bottom.

The following equation is used to calculate the volatilization factor (VF) for a trench less than 15 feet deep:

$$VF = (Ki \times A \times F \times 10^{-3} \times 10^{4} \times 3{,}600)/(ACH \times V)$$

Where:

Ki	=	contaminant's overall mass-transfer coefficient (cm/s)
A	=	trench area (m^2)
F	=	fraction of floor through which contaminant can enter (unitless)
ACH	=	air changes per hour (h^{-1}) = 360 h^{-1}
V	=	trench volume (m^3)
10^{-3}	=	conversion factor (L/cm^3)
10^{4}	=	conversion factor (cm^2/m^2)
3,600	=	conversion factor (seconds/hour)

Studies of urban canyons suggest that if the ratio of trench width (relative to wind direction) to trench depth is less than or equal to one, a circulation cell(s) will be created in the trench which limits the degree of gas exchanged with the atmosphere. Thus, measured building ventilation rates lead to an assumption

of two air changes per hour (ACH). If the width-to-depth ratio of the trench is greater than one, the air exchange between the trench and above-ground atmosphere is unrestricted, based on the ratio of trench depth to average wind speed; therefore, the ACH is assumed to be 360. The exposure assessment in this HHRA assumes that the width-to-trench depth ratio is greater than one; thus, the ACH is set at 360.

K_i is calculated using the following equation:

$$K_i = 1/\{(1/k_iL) + [(RT)/(H_i\ k_iG)]\}$$

Where:

K_i	=	contaminant's overall mass-transfer coefficient (cm/s)
k_iL	=	liquid-phase mass-transfer coefficient of i (cm/s)
R	=	ideal gas constant (atm-m^3/mole-°K) = 8.2×10^{-5}
T	=	average system absolute temperature (°K) (Default = 298°K)
H_i	=	Henry's Law Constant of i (atm-m^3/mole)
k_iG	=	gas-phase mass-transfer coefficient of i (cm/s)

Formulae for calculating k_iL and k_iG are as follows:

$$k_iL = (MWO_2/MW_i)^{0.5}\times(T/298)\times kL,O_2$$

Where:

k_iL	=	liquid-phase mass-transfer coefficient of component i (cm/s)
MWO_2	=	molecular weight of oxygen (g/mole)
MW_i	=	molecular weight of component i (g/mole)
kL,O_2	=	liquid-phase mass-transfer coefficient of oxygen at 25°C (cm/s) = 0.002 cm/s

$$k_iG = (MWH_2O/MW_i)^{0.335}\times(T/298)^{1.005\times}kG,H_2O$$

Where:

k_iG	=	gas-phase mass-transfer coefficient of component i (cm/s)
MWH_2O	=	molecular weight of water (g/mole)
kG,H_2O	=	gas-phase mass-transfer coefficient of water vapor at 25°C (cm/s)
	=	0.833 cm/s (USEPA, 1988)

Chemical properties were obtained from the USEPA RSL Table (USEPA, 2015) and are presented in the RBC calculation spreadsheets (Appendix A-6).

7.0 Calculation of Risk-Based Concentrations

RBCs were calculated using a target cancer risk of 1E-06 for carcinogens and a target hazard index (1) for non-carcinogens. The cancer slope factors (CSFs), inhalation unit risks (IURs), reference doses (RfDs), and reference concentrations (RfCs) used in the equations were obtained from EPA literature sources using the hierarchy specified in USEPA guidance (USEPA, 2003). Tables A-6.1 through A-6.4 present the toxicity criteria used in the RBC calculations.

8.0 References

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SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: CONSTRUCTION WORKERS
MEDIA: SUBSURFACE SOIL
DATE: AUGUST 6, 2014

THIS SPREADSHEET CALCULATES RISK-BASED CONCENTRATIONS FOR EXPOSURES TO SOIL
THE INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION ROUTES OF EXPOSURE ARE CONSIDERED.

RELEVANT EQUATION:

Carcinogens

$$RBC_{soil} = \frac{TCR}{IntakeFac_{oral} \cdot CSF_{oral} + IntakeFac_{derm} \cdot CSF_{derm} + IntakeFac_{inh} \cdot CSF_{inh}}$$

NonCarcinogens

$$RBC_{soil} = \frac{THI}{\left(\frac{IntakeFac_{oral}}{RfD_{oral}}\right) + \left(\frac{IntakeFac_{derm}}{RfD_{derm}}\right) + \left(\frac{IntakeFac_{inh}}{RfD_{inh}}\right)}$$

$$IntakeFac_{oral} = \frac{IR \times RBA \times EF \times ED \times FI \times CF}{BW \times AT}$$

$$IntakeFac_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$$

$$IntakeFac_{inh} = \frac{EF \times ED \times ET \times (1/VF + 1/PEF)}{AT \times 24\ hours/day}$$

WHERE:

RBC = :		Concentration in soil (mg/kg)
TCR = :	1.0E-06	Target Cancer Risk
THI = :	1	Target Hazard Index
RBA = :	Chemical Specific	Relative Bioavailability (unitless)
IR = :	330	Soil Ingestion Rate (mg/day)
CF = :	1.0E-06	Conversion Factor (kg/mg)
FI = :	1	Fraction from contaminated source (unitless)
SA = :	3470	Skin surface available for contact (cm^2/day)
AF = :	0.3	Soil to skin adherence factor (mg/cm^2)
ABS = :	Chemical Specific	Absorption factor (unitless)
ET = :	8	Exposure time (hr/day)
EF = :	150	Exposure Frequency (days/year)
ED = :	1	Exposure Duration (years)
BW = :	80	Body Weight (kg)
ATc = :	25,550	Averaging time for carcinogenic exposures (days)
ATn = :	365	Averaging time for noncarcinogenic exposures (days)
PEF = :	1.40E+06	Particulate emission factor (m^3/kg)
VF = :	Chemical Specific	Volatilization Factor (m^3/kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral $(mg/kg/day)^{-1}$	Dermal $(mg/kg/day)^{-1}$	Inhalation $(ug/m^3)^{-1}$	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m^3)
Aluminum	0	NA	NA	NA	1.0E+00	1.0E+00	5.0E-03
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05
Cobalt	0	NA	NA	9.0E-03	3.0E-03	3.0E-03	2.0E-05
Iron	0	NA	NA	NA	7.0E-01	7.0E-01	NA
Manganese (Non-diet)	0	NA	NA	NA	2.4E-02	9.6E-04	5.0E-05

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: CONSTRUCTION WORKERS
MEDIA: SUBSURFACE SOIL
DATE: AUGUST 6, 2014

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intakes Factors		
	Oral[1] (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/kg/day)	Oral[1] (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/kg/day)
Aluminum	2.42E-08	0.00E+00	1.40E-09	1.70E-06	0.00E+00	9.78E-08
Arsenic	1.45E-08	2.29E-09	1.40E-09	1.02E-06	1.60E-07	9.78E-08
Cobalt	2.42E-08	0.00E+00	1.40E-09	1.70E-06	0.00E+00	9.78E-08
Iron	2.42E-08	0.00E+00	1.40E-09	1.70E-06	0.00E+00	9.78E-08
Manganese (Non-diet)	2.42E-08	0.00E+00	1.40E-09	1.70E-06	0.00E+00	9.78E-08

CHEMICAL	Soil Concentration		Risk-Based[2]
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)	Cleanup Level (mg/kg)
Aluminum	NA	47026	47026
Arsenic	32	96	32
Cobalt	79	183	79
Iron	NA	412929	412929
Manganese (Non-diet)	NA	493	493

Notes:
1 - A value of 0.6 was used for the RBA for arsenic (USEPA, December 2012). A value of 1 was used as the RBA for all other chemicals.
2 - Risk-based cleanup level is the lower of the carcinogenic soil concentration and noncarcinogenic soil concentration.

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$PEF = \frac{3600}{0.036 \times (1 - V) \times (U_m / U_t)^3 \times F(x)}$$

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS		
Parameter	**Value**	**Definition**
Q/C = :	81.9	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).
T = :	3.2E+07	Exposure interval (seconds).
pb = :	1.5	Dry soil bulk density (g/cm^3).
ps = :	2.65	soil particle density (g/cm^3).
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).
H' = :	Chemical specific	Dimensionless Henry's Law Constant.
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).
foc = :	0.006	Fraction organic carbon in soil (g/g).

Chemical	**Volatile**	**Chemical Properties**					**Intermediate Calculations**			
		Koc (cm^3/g)	**Di (cm^2/sec)**	**Dw (cm^2/sec)**	**S (mg/L)**	**H'**	**Kd (cm^3/g)**	**Da (cm^2/sec)**	**VF (m^3/kg)**	**Csat (mg/kg)**
Subsurface Soil										
Aluminum	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Arsenic	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cobalt	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Iron	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Manganese	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA

CLIENT:	**JOB NUMBER:**
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND	112G01813
SUBJECT: CALCULATION OF PARTICULATE EMISSION FACTOR FOR CONSTRUCTION WORKERS	
BASED ON: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, December 2002)	
BY: L. CIOFANI	**CHECKED BY:** **DATE:** 8/6/2014

Equation 5-5
Derivation of the Particulate Emission Factor
Construction Scenario - Construction Worker

$$PEF_{sc} = Q/C_{sr} \times \frac{1}{F_D} \times \left[\frac{T \times A_R}{556 \times (W/3)^{0.4} \times \frac{(365 d/yr - p)}{365 d/yr} \times \Sigma VKT} \right]$$

Parameter/Definition (units)	Default
PEF_{sc}/subchronic road particulate emission factor (m^3/kg)	site-specific
Q/C_{sr}/ inverse of the ratio of the 1-h geometric mean air concentration to the emission flux along a straight road segment bisecting a square site (g/m^2-s per kg/m^3)	23.02* (Equation 5-6)
F_D/dispersion correction factor (unitless)	0.185 (Appendix E)
T/total time over which construction occurs (s)	site-specific
A_R/surface area of contaminated road segment (m^2) L_R/length of road segment (ft) W_R/width of road segment (ft)	274.213 ($A_R = L_R \times W_R \times 0.092903 m^2/ft^2$)
W/mean vehicle weight (tons)	site-specific
p/number of days with at least 0.01 inches of precipitation (days/year)	site-specific (Exhibit 5-2)
ΣVKT/sum of fleet vehicle kilometers traveled during the exposure duration (km)	site-specific

* Assumes a 0.5 acre site

Calculation of PEF for Construction Workers

Q/C	23.02	(g/m^2-s per kg/m^3)	
Fd	0.185	dispersion correction factor (unitless)	
T	4.32E+06	sec	3600 sec/hr x 8hr/day x 150 days/yr
A_R	274.213	m^2	
W	8	tons	
p	135	day/year	
VKT	202.5	km	30 vehicles x 0.045 km/day x 150 days

PEF = 1.40E+06 m^3/kg

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE ONE OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: CHILD RECREATIONAL USERS
MEDIA: SUBSURFACE SOIL
DATE: AUGUST 6, 2014

THIS SPREADSHEET CALCULATES SCREENING LEVELS FOR EXPOSURES TO SOIL VIA INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION.

RELEVANT EQUATIONS:

Carcinogens

$$RBC_{soil} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + EC_{air} \cdot IUR}$$

Noncarcinogens

$$RBC_{SOIL} = \frac{THI}{\left(\frac{Intake_{oral}}{RfD_{oral}}\right) + \left(\frac{Intake_{derm}}{RfD_{derm}}\right) + \left(\frac{EC_{air}}{RfC}\right)}$$

$$Intake_{oral} = \frac{IR \times RBA \times EF \times ED \times FI \times CF}{BW \times AT}$$

$$Intake_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$$

$$EC_{air} = \frac{ET \times EF \times ED \times [1/PEF + 1/VF]}{AT \times 24\ hours/day}$$

Mutagenic

$$RBC_{soil} = \frac{TCR}{Intake_{ages\,0-2} + Intake_{ages\,2-6} + Intake_{ages\,6-16} + Intake_{ages\,16-30}}$$

INPUT ASSUMPTIONS:

	Parameter	Value	Definition
General	SL = :		Screening level in soil (mg/kg)
	TCR = :	1E-06	Target Cancer Risk
	THI = :	1	Target Hazard Index
	EFc = :	100	Exposure Frequency - Child (days/year)
	EDc = :	6	Exposure Duration - Child (years)
	ED 0-2 =:	2	Exposure Duration - Small Child (years)
	ED 2-6 =:	4	Exposure Duration - Child (years)
	BWc = :	15	Body Weight - Child (kg)
	ATc = :	25,550	Averaging time for carcinogenic exposures (days)
	ATn = :	2,190	Averaging time for noncarcinogenic exposures (days)
	CF = :	1.0E-06	Conversion Factor (kg/mg)
Incidental Ingestion	IRc = :	200	Soil Ingestion Rate - Child (mg/day)
	FIc = :	0.5	Fraction from contaminated source - Child (unitless)
	RBA = :	Chemical Specific	Relative Bioavailability (unitless)
Dermal Contact	SAc = :	2,690	Skin surface available for contact - Child (cm^2/day)
	AFc = :	0.2	Soil to skin adherence factor - Child (mg/cm^2)
	ABS = :	Chemical Specific	Absorption factor (unitless)
Inhalation	ETc = :	4	Exposure time - Child (hours/day)
	PEF = :	1.10E+10	Particulate emission factor (m^3/kg)
	VF = :	Chemical Specific	Volatilization factor (m^3/kg)

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE TWO OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: CHILD RECREATIONAL USERS
MEDIA: SUBSURFACE SOIL
DATE: AUGUST 6, 2014

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral $(mg/kg/day)^{-1}$	Dermal $(mg/kg/day)^{-1}$	Inhalation $(ug/m^3)^{-1}$	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m^3)
Aluminum	0	NA	NA	NA	1.0E+00	1.0E+00	5.0E-03
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05
Cobalt	0	NA	NA	9.0E-03	3.0E-04	3.0E-04	6.0E-06
Iron	0	NA	NA	NA	7.0E-01	7.0E-01	NA
Manganese (Non-diet)	0	NA	NA	NA	2.4E-02	9.6E-04	5.0E-05

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE THREE OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: CHILD RECREATIONAL USERS
MEDIA: SUBSURFACE SOIL
DATE: AUGUST 6, 2014

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors			Mutagenic Intake Factors		
	Oral[(1)] (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)	Oral[(1)] (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)
Aluminum	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Arsenic	9.39E-08	2.53E-08	3.56E-13	1.10E-06	2.95E-07	4.15E-12	NA	NA	NA
Cobalt	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Iron	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Manganese (Non-diet)	1.57E-07	0.00E+00	3.56E-13	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA

1 - A value of 0.6 was used for the RBA for arsenic (USEPA, December 2012). A value of 1 was used as the RBA for all other chemicals.

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE FOUR OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: CHILD RECREATIONAL USERS
MEDIA: SUBSURFACE SOIL
DATE: AUGUST 6, 2014

CHEMICAL	Soil Concentration		
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)	Mutagenic (mg/kg)
Aluminum	NA	547251	NA
Arsenic	5.6	216	NA
Cobalt	312278	164	NA
Iron	NA	383250	NA
Manganese (Non-diet)	NA	13126	NA

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE FIVE OF FIVE)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

$$PEF = \frac{3600}{0.036 \times (1 - V) \times (U_m / U_t)^3 \times F(x)}$$

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS		
Parameter	**Value**	**Definition**
Q/C = :	60.63828	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).
T = :	9.5E+08	Exposure interval (seconds).
pb = :	1.5	Dry soil bulk density (g/cm^3).
ps = :	2.65	soil particle density (g/cm^3).
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).
H' = :	Chemical specific	Dimensionless Henry's Law Constant.
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).
foc = :	0.006	Fraction organic carbon in soil (g/g).

Chemical	Volatile	Chemical Properties					Intermediate Calculations			
		Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)
Subsurface Soil										
Aluminum	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Arsenic	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cobalt	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Iron	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Manganese	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE ONE OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
MEDIA: SOIL
DATE: AUGUST 6, 2014

THIS SPREADSHEET CALCULATES SCREENING LEVELS FOR EXPOSURES TO SOIL
VIA INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:

Carcinogens

$$RBC_{soil} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + EC_{air} \cdot IUR}$$

Noncarcinogens

$$RBC_{SOIL} = \frac{THI}{\left(\frac{Intake_{oral}}{RfD_{oral}}\right) + \left(\frac{Intake_{derm}}{RfD_{derm}}\right) + \left(\frac{EC_{air}}{RfC}\right)}$$

$Intake_{oral}$ = $\frac{IR \times RBA \times EF \times ED \times FI \times CF}{BW \times AT}$

$Intake_{derm}$ = $\frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$

EC_{air} = $\frac{ET \times EF \times ED \times [1/PEF + 1/VF]}{AT \times 24\ hours/day}$

Mutagenic

$$RBC_{soil} = \frac{TCR}{Intake_{ages_{0-2}} + Intake_{ages2-6} + Intake_{ages6-16} + Intake_{ages16-26}}$$

INPUT ASSUMPTIONS:

	Parameter	Value	Definition
General	SL = :		Screening level in soil (mg/kg)
	TCR = :	1E-06	Target Cancer Risk
	THI = :	1	Target Hazard Index
	EFc = :	100	Exposure Frequency - Child (days/year)
	EFa = :	100	Exposure Frequency - Adult (days/year)
	EDc = :	6	Exposure Duration - Child (years)
	EDa = :	20	Exposure Duration - Adult (years)
	ED 0-2 =:	2	Exposure Duration - Small Child (years)
	ED 2-6 =:	4	Exposure Duration - Child (years)
	ED 6-16 =:	10	Exposure Duration - Adolescent/Adult (years)
	ED 16-26 =:	10	Exposure Duration - Adult (years)
	BWc = :	15	Body Weight - Child (kg)
	BWa = :	80	Body Weight - Adult (kg)
	ATc = :	25,550	Averaging time for carcinogenic exposures (days)
	ATn = :	2,190	Averaging time for noncarcinogenic exposures (days)
	CF = :	1.0E-06	Conversion Factor (kg/mg)
Incidental Ingestion	IRc = :	200	Soil Ingestion Rate - Child (mg/day)
	IRa = :	100	Soil Ingestion Rate - Adult (mg/day)
	FIc = :	0.5	Fraction from contaminated source - Child (unitless)
	FIa = :	0.5	Fraction from contaminated source - Adult (unitless)
	RBA = :	Chemical Specific	Relative Bioavailability (unitless)
Dermal Contact	SAc = :	2,690	Skin surface available for contact - Child (cm^2/day)
	SAa = :	6,032	Skin surface available for contact - Adult (cm^2/day)
	AFc = :	0.2	Soil to skin adherence factor - Child (mg/cm^2)
	AFa = :	0.07	Soil to skin adherence factor - Adult (mg/cm^2)
	ABS = :	Chemical Specific	Absorption factor (unitless)
Inhalation	ETc = :	4	Exposure time - Child (hours/day)
	ETa = :	4	Exposure time - Adult (hours/day)
	PEF = :	1.10E+10	Particulate emission factor (m^3/kg)
	VF = :	Chemical Specific	Volatilization factor (m^3/kg)

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE TWO OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
MEDIA: SOIL
DATE: AUGUST 6, 2014

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral $(mg/kg/day)^{-1}$	Dermal $(mg/kg/day)^{-1}$	Inhalation $(ug/m^3)^{-1}$	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m^3)
Aluminum	0	NA	NA	NA	1.0E+00	1.0E+00	5.0E-03
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05
Cobalt	0	NA	NA	9.0E-03	3.0E-04	3.0E-04	6.0E-06
Iron	0	NA	NA	NA	7.0E-01	7.0E-01	NA
Manganese (Non-diet)	0	NA	NA	NA	2.4E-02	9.6E-04	5.0E-05

RISK ASSESSMENT SPREADSHEET - CALCULATION OF PRG FOR SOIL (PAGE THREE OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
MEDIA: SOIL
DATE: AUGUST 6, 2014

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors			Mutagenic Intake Factors		
	Oral[(1)] (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)	Oral[(1)] (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m^3)
Aluminum	2.05E-07	0.00E+00	1.54E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Arsenic	1.23E-07	3.77E-08	1.54E-12	1.10E-06	2.95E-07	4.15E-12	NA	NA	NA
Cobalt	2.05E-07	0.00E+00	1.54E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Iron	2.05E-07	0.00E+00	1.54E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA
Manganese (Non-diet)	2.05E-07	0.00E+00	1.54E-12	1.83E-06	0.00E+00	4.15E-12	NA	NA	NA

1 - A value of 0.6 was used for the RBA for arsenic (USEPA, December 2012). A value of 1 was used as the RBA for all other chemicals.

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE FOUR OF FIVE)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
EXPOSURE POINT: CED AREA DRUM REMOVAL AREA
EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
MEDIA: SOIL
DATE: AUGUST 6, 2014

CHEMICAL	Soil Concentration		
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)	Mutagenic (mg/kg)
Aluminum	NA	547251	NA
Arsenic	4.1	216	NA
Cobalt	72064	164	NA
Iron	NA	383250	NA
Manganese (Non-diet)	NA	13126	NA

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE FIVE OF FIVE)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

$$PEF = \frac{3600}{0.036 \times (1 - V) \times (U_m / U_t)^3 \times F(x)}$$

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS		
Parameter	**Value**	**Definition**
Q/C = :	60.63828	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).
T = :	9.5E+08	Exposure interval (seconds).
pb = :	1.5	Dry soil bulk density (g/cm^3).
ps = :	2.65	soil particle density (g/cm^3).
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).
H' = :	Chemical specific	Dimensionless Henry's Law Constant.
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).
foc = :	0.006	Fraction organic carbon in soil (g/g).

Chemical	Volatile	Chemical Properties					Intermediate Calculations			
		Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)
Subsurface Soil										
Aluminum	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Arsenic	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Cobalt	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Iron	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA
Manganese	N	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	1E+99	NA

CALCULATION OF RISK-BASED PRELIMINARY CLEANUP LEVELS (PAGE 1 OF 3)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
LOCATION: CED AREA
EXPOSURE SCENARIO: CONSTRUCTION WORKERS
MEDIA: GROUNDWATER
DATE: JANUARY 21, 2015

THIS SPREADSHEET CALCULATES RISK-BASED CLEANUP GOALS FOR EXPOSURES TO GROUNDWATER THROUGH INCDIENTAL INGESTION, DERMAL CONTACT, AND INHALATION.

RELEVANT EQUATION:

Carcinogens

$$PRG_{GW} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} \cdot CF + Intake_{derm} \cdot CSF_{derm} \cdot CF + Intake_{inh} \cdot IUR}$$

NonCarcinogens

$$PRG_{GW} = \frac{THI}{\left[\left(\frac{Intake_{oral}}{RfD_{oral}}\right) + \left(\frac{Intake_{derm}}{RfD_{derm}}\right) + \left(\frac{Intake_{inh}}{RfC}\right)\right] \cdot CF}$$

$$Intake_{oral} = \frac{IR \times EF \times ED}{BW \times AT}$$

$$Intake_{derm} = \frac{DA_{Event} \times EV \times ED \times EF \times SA}{BW \times AT}$$

$$Intake_{inh} = \frac{VF \times ET \times EF \times ED}{AT \times 24\ hr/day}$$

For Inorganics DAevent = Kp x CF2 x tevent

For Organics

$$\text{If } tevent \le t^*, \text{ then : } DAevent = 2 \times FA \times Kp \times CF \times \sqrt{\frac{6 \times tau \times tevent}{\pi}}$$

$$\text{If } tevent > t^*, \text{ then : } DAevent = FA \times Kp \times CF \times \left[\frac{tevent}{1+B} + 2 \times tau \times \left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

Where:			
TCR = :	1.0E-06	Target Cancer Risk
THI = :	1	Target Hazard Index
IR = :	0.05	Incidental ingestion rate of groundwater (L/day)
SA = :	3,470	Skin surface available for contact (cm^2)
CF = :	0.001	Conversion Factor (mg/ug or L/cm^3)
DAevent = :		Chemical specific absorbed dose per event (mg/cm^2-event)
EV = :	1	Event frequency (events/days)
ET = :	4	Exposure time (hours/day)
EF = :	30	Exposure frequency (days/year)
ED = :	1	Exposure duration (years)
BW = :	80	Body weight (kg)
ATc = :	25,550	Averaging time for carcinogenic exposures (days)
ATn = :	365	Averaging time for noncarcinogenic exposures (days)
Kp =:		Chemical specific permeability coefficient (cm/hr)
tevent = :	4	duration of event (hr/event)
tau = :		Chemical specific lag time (hr)
t* = :		Chemical specific time it takes to reach steady state (hr)
B = :		Chemical specific dimensionless constant
VF = :		Chemical specific volatilization factor (L/m3) (See Page 3)
CSF_{oral} = :		oral carcinogenic slope factor ($(mg/kg/day)^{-1}$)
RfD_{oral} = :		oral noncarcinogenic reference dose (mg/kg/day)
CSF_{derm} = :		dermal carcinogenic slope factor ($(mg/kg/day)^{-1}$)
RfD_{derm} = :		dermal noncarcinogenic reference dose (mg/kg/day)
IUR = :		inhalation unit risk ($(ug/m^3)^{-1}$)
RfC = :		inhalation reference concentration (mg/m^3)

CALCULATION OF RISK-BASED PRELIMINARY CLEANUP LEVELS (PAGE 2 OF 3)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
LOCATION: CED AREA
EXPOSURE SCENARIO: CONSTRUCTION WORKERS
MEDIA: GROUNDWATER
DATE: JANUARY 21, 2015

CHEMICAL	Organic or Inorganic	Estimated Kp (cm/hr)	FA	tau-event (hr)	B	t* (hr)	DAevent (L/cm^2 - event)
Trichloroethene	Organic	1.16E-02	1.00E+00	5.72E-01	5.11E-02	1.37E+00	5.81E-05
Naphthalene	Organic	4.66E-02	1.00E+00	5.49E-01	2.03E-01	1.32E+00	2.16E-04
Cobalt	Inorganic	4.00E-04	1.00E+00	NA	NA	NA	1.60E-06
Manganese	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	4.00E-06

CHEMICAL	VF	Cancer Slope Factor			Reference Dose		
		Oral	Dermal	Inhalation	Oral	Dermal	Inhalation
	(L/m3)	$(mg/kg/day)^{-1}$	$(mg/kg/day)^{-1}$	$(ug/m^3)^{-1}$	(mg/kg/day)	(mg/kg/day)	(mg/m^3)
Trichloroethene	3.22E-02	4.6E-02	4.6E-02	4.1E-06	5.0E-04	5.0E-04	2.0E-03
Naphthalene	2.90E-02	NA	NA	3.4E-05	6.0E-01	6.0E-01	3.0E-03
Cobalt	0.00E+00	NA	NA	9.0E-03	3.0E-03	0.0E+00	2.0E-05
Manganese	0.00E+00	NA	NA	NA	2.4E-02	9.6E-04	5.0E-04

CHEMICAL	Carcinogenic Intakes			Noncarcinogenic Intakes		
	Oral	Dermal	Inhalation	Oral	Dermal	Inhalation
	(L/kg/day)	(L/kg/day)	(L/m^3)	(L/kg/day)	(L/kg/day)	(L/m^3)
Trichloroethene	7.34E-07	2.96E-06	6.30E-06	5.14E-05	2.07E-04	4.41E-04
Naphthalene	7.34E-07	1.10E-05	5.68E-06	5.14E-05	7.71E-04	3.98E-04
Cobalt	7.34E-07	8.15E-08	0.00E+00	5.14E-05	5.70E-06	0.00E+00
Manganese	7.34E-07	2.04E-07	0.00E+00	5.14E-05	1.43E-05	0.00E+00

CHEMICAL	Groundwater Concentration		Risk-Based[(1)]
	Carcinogenic	Noncarcinogenic	Cleanup Level
	(ug/L)	(ug/L)	(ug/L)
Trichloroethene	5.1	1356	5.1
Naphthalene	5174	7462	5174
Cobalt	NA	58	58
Manganese	NA	467	467

Notes:
(1) - Risked-based cleanup level is the lower of the carcinogenic and noncarcinogenic groundwater concentration.

CALCULATION OF RISK-BASED PRELIMINARY CLEANUP LEVELS (PAGE 3 OF 3)

SITE NAME: FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND
LOCATION: CED AREA
EXPOSURE SCENARIO: CONSTRUCTION WORKERS
MEDIA: GROUNDWATER
DATE: JANUARY 21, 2015

CALCULATION OF VOLATILIZATION FACTOR FOR CONSTRUCTION WORKERS EXPOSED TO GROUNDWATER
SOURCE: VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (http://www.deq.state.va.us/vrprisk/raguide.html)
Table 3.8 Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater less than 15 feet deep

For Mass-Transfer Coefficients			For Emission Flux and Concentration in Trench			Trench dimensions		
Kg,H2O	0.833	cm/s	CF1	1.00E-03	L/cm3	Length	**8**	ft
MWH2O	18		CF2	1.00E+04	cm2/m2		2.44	m
Kg,O2	0.002	cm/s	CF3	3600	s/hr	Width	**11**	ft
MWO2	32		F	**1**			3.35	m
T	**77**	F	ACH	360	hr-1	Depth	**10**	ft
T	298	K					3.05	m
R	8.20E-05	atm-m3/mol-K				Width/Depth	1.10	

	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3
Volatile Organic Compounds (VOCs)									
Trichloroethene	79-01-6	131.39	9.85E-03	4.28E-01	9.87E-04	9.81E-04	1.00E+00	3.22E-02	3.22E-02

TABLE A-5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal[2]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Volatiles										
1,1,2,2-Tetrachloroethane	Subchronic	5.0E-01	mg/kg/day	1	5.0E-01	mg/kg/day	Liver	1000/1	ATSDR	9/2008
	Chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	Liver	1000/1	IRIS	1/26/2015
1,1,2-Trichloroethane	Chronic	4.0E-03	mg/kg/day	1	4.0E-03	mg/kg/day	Blood	1000/1	IRIS	1/26/2015
cis-1,2-Dichloroethene	Subchronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	Kidney	300/1	PPRTV	2/3/2011
	Chronic	2.0E-03	mg/kg/day	1	2.0E-03	mg/kg/day	Kidney	3000/1	IRIS	1/26/2015
trans-1,2-Dichloroethene	Subchronic	2.0E-01	mg/kg/day	1	2.0E-01	mg/kg/day	Liver	1000/1	ATSDR	8/2006
	Chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	Blood	3000/1	IRIS	1/26/2015
Trichloroethene	Chronic	5.0E-04	mg/kg/day	1	5.0E-04	mg/kg/day	Cardiovascular System, Fetotoxicity, Immune	10 to 100/1	IRIS	1/26/2015
Vinyl Chloride	Chronic	3.0E-03	mg/kg/day	1	3.0E-03	mg/kg/day	Liver	30/1	IRIS	1/26/2015
Polycyclic Aromatic Hydrocarbons										
Naphthalene	Subchronic	6.0E-01	mg/kg/day	1	6.0E-01	mg/kg/day	Central Nervous System	90/1	ATSDR	9/2005
	Chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	Body Weight	3000/1	IRIS	1/26/2015
Metals										
Aluminum	Subchronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	Central Nervous System	30/1	ATSDR	9/2008
	Chronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	Central Nervous System	100/1	PPRTV	10/23/2006
Arsenic	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Skin, Cardiovascular System	3/1	IRIS	1/26/2015
Cobalt	Subchronic	3.0E-03	mg/kg/day	1	3.0E-03	mg/kg/day	Thyroid	300/1	PPRTV	8/25/2008
	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Thyroid	3000/1	PPRTV	8/25/2008
Iron	Subchronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
	Chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
Manganese[3]	Subchronic	2.4E-02	mg/kg/day	0.04	9.6E-04	mg/kg/day	Central Nervous System	1	IRIS	1/26/2015
	Chronic	2.4E-02	mg/kg/day	0.04	9.6E-04	mg/kg/day	Central Nervous System	1	IRIS	1/26/2015

Notes:

1 - U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

2 - Adjusted dermal RfD = Oral RfD x Oral Absorption Efficiency for Dermal.

3 - Adjusted IRIS value in accordance with IRIS.

Definitions:

ATSDR = Agency for Toxic Substances and Disease Registry
HEAST = Health Effects Assessment Summary Tables
IRIS = Integrated Risk Information System
NA = Not available
PPRTV = Provisional Peer Reviewed Toxicity Value
RfD = Reference dose

TABLE A-5.2

NON-CANCER TOXICITY DATA -- INHALATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD[(1)]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Volatiles									
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	Subchronic	2.0E-03	mg/m^3	5.7E-04	(mg/kg/day)	Respiratory	300	PPRTV	4/1/2011
	Chronic	2.0E-04	mg/m^3	5.7E-05	(mg/kg/day)	Respiratory	3000	PPRTV	4/1/2011
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	Subchronic	5.4E-01	mg/m^3	1.5E-01	(mg/kg/day)	CNS	300/1	ATSDR	9/1997
	Chronic	2.0E-03	mg/m^3	5.7E-04	(mg/kg/day)	CVS, Immune	10 to 100/1	IRIS	1/26/2015
Vinyl Chloride	Subchronic	7.7E-02	mg/m^3	2.2E-02	(mg/kg/day)	Liver	30/1	ATSDR	7/2006
	Chronic	1.0E-01	mg/m^3	2.9E-02	(mg/kg/day)	Liver	30/1	IRIS	1/26/2015
Polycyclic Aromatic Hydrocarbons									
Naphthalene	Chronic	2.0E-02	mg/m^3	5.7E-03	(mg/kg/day)	Nasal	3000/1	IRIS	1/26/2015
Metals									
Aluminum	Chronic	5.0E-03	mg/m^3	1.4E-03	(mg/kg/day)	Central Nervous System	300/1	PPRTV	10/23/2006
Arsenic	Subchronic	1.5E-05	mg/m^3	4.3E-06	(mg/kg/day)	None Reported	NA	Cal EPA	9/2009
	Chronic	1.5E-05	mg/m^3	4.3E-06	(mg/kg/day)	None Reported	NA	Cal EPA	9/2009
Cobalt	Subchronic	2.0E-05	mg/m^3	5.7E-06	(mg/kg/day)	Respiratory	100/1	PPRTV	8/25/2008
	Chronic	6.0E-06	mg/m^3	1.7E-06	(mg/kg/day)	Respiratory	300/1	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	Chronic	5.00E-05	mg/m^3	1.4E-05	(mg/kg/day)	Central Nervous System	1000/1	IRIS	1/26/2015

Notes:

1 - Extrapolated RfD = RfC *$20 m^3$/day / 70 kg.

Definitions:

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009

IRIS = Integrated Risk Information System

NA = Not applicable

PPRTV = Provisional Peer Reviewed Toxicity Value.

RfC = Reference concentration

TABLE A-5.3

CANCER TOXICITY DATA -- ORAL/DERMAL
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal[2]		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Volatiles								
1,1,2,2-Tetrachloroethane	2.0E-01	$(mg/kg/day)^{-1}$	1	2.0E-01	$(mg/kg/day)^{-1}$	C / Possible human carcinogen	IRIS	1/26/2015
1,1,2-Trichloroethane	5.7E-02	$(mg/kg/day)^{-1}$	1	5.7E-02	$(mg/kg/day)^{-1}$	C / Possible human carcinogen	IRIS	1/26/2015
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene - non-mutagen[3]	3.7E-02	$(mg/kg/day)^{-1}$	1	3.7E-02	$(mg/kg/day)^{-1}$	Carcinogenic to humans	IRIS	1/26/2015
Trichloroethene - mutagen[3][4]	9.3E-03	$(mg/kg/day)^{-1}$	1	9.3E-03	$(mg/kg/day)^{-1}$	Carcinogenic to humans	IRIS	1/26/2015
Vinyl Chloride	7.2E-01	$(mg/kg/day)^{-1}$	1	7.2E-01	$(mg/kg/day)^{-1}$	A / Known/likely human carcinogen	IRIS	1/26/2015
Polycyclic Aromatic Hydrocarbons								
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA
Metals								
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.5E+00	$(mg/kg/day)^{-1}$	1	1.5E+00	$(mg/kg/day)^{-1}$	A / human carcinogen	IRIS	1/26/2015
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	1/26/2015

Notes:

1 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

2 - Adjusted cancer slope factor for dermal = Oral cancer slope factor / Oral absorption efficiency for dermal.

3 - See text for a discussion of trichloroethene toxicity.

4 - Trichloroethene is considered to act via the mutagenic mode of action. It is evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Definitions:

CSF = Cancer slope factor

IRIS = Integrated Risk Information System

NA = Not available

USEPA(1) = Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons, July 1993 EPA/600/R-93/089.

USEPA(2) = USEPA, PCBs: Cancer Dose-Response Assessment and Applications to Environmental Mixtures, September 1996, EPA/600/P-96/001F.

TABLE A-5.4

CANCER TOXICITY DATA -- INHALATION
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor[1]		Weight of Evidence/ Cancer Guideline Description	Unit Risk: Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Volatiles							
1,1,2,2-Tetrachloroethane	5.8E-05	$(ug/m^3)^{-1}$	2.0E-01	$(mg/kg/day)^{-1}$	C / Possible human carcinogen	IRIS	1/26/2015
1,1,2-Trichloroethane	1.6E-05	$(ug/m^3)^{-1}$	5.6E-02	$(mg/kg/day)^{-1}$	C / Possible human carcinogen	IRIS	1/26/2015
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA
Trichloroethene - non-mutagen[2]	3.1E-06	$(ug/m^3)^{-1}$	1.1E-02	$(mg/kg/day)^{-1}$	Carcinogenic to humans	IRIS	1/26/2015
Trichloroethene - mutagen[2][3]	1.0E-06	$(ug/m^3)^{-1}$	3.5E-03	$(mg/kg/day)^{-1}$	Carcinogenic to humans	IRIS	1/26/2015
Vinyl Chloride	4.4E-06	$(ug/m^3)^{-1}$	1.5E-02	$(mg/kg/day)^{-1}$	A / Known/likely human carcinogen	IRIS	1/26/2015
Polycyclic Aromatic Hydrocarbons							
Naphthalene	3.4E-05	$(ug/m^3)^{-1}$	1.2E-01	$(mg/kg/day)^{-1}$	C / Possible human carcinogen	IRIS	1/26/2015
Metals							
Aluminum	NA	NA	NA	NA	NA	NA	NA
Arsenic	4.3E-03	$(ug/m^3)^{-1}$	1.5E+01	$(mg/kg/day)^{-1}$	A / Known human carcinogen	IRIS	1/26/2015
Cobalt	9.0E-03	$(ug/m^3)^{-1}$	3.2E+01	$(mg/kg/day)^{-1}$	NA	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	D / Not classifiable as to human carcinogenicity	IRIS	1/26/2015

Notes:

1 - Inhalation CSF = Unit Risk* 70 kg / $20m^3$/day.

2 - See text for a discussion of trichloroethene toxicity.

3 - Trichloroethene is considered to act via the mutagenic mode of action. It is evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Definitions:

IRIS = Integrated Risk Information System

NA = Not available

CSF = Cancer slope factor

PPRTV = Provisional Peer Reviewed Toxicity Value

USEPA(1) = USEPA, PCBs: Cancer Dose-Response Assessment and Applications to Environmental Mixtures, September 1996, EPA/600/P-96/001F.

ATTACHMENT B

FIELD SAMPLING FORMS

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB001

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194308.977

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348448.517

TRANSCRIBED BY: J.Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	3.9' / 4'	03SS0010002	Poorly graded sand	Loose	Tan/Brown	S-1A (0-0.6') SAND (Medium sand, trace coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
2		0900 S-1	Well graded sand w/gravel	Loose	Brown	S-1B (0.6-2.0') SAND, SOME GRAVEL, TRACE SILT (Fine-coarse sand, well graded; fine and coarse subrounded gravel, 1/4 - 1"; trace silt at bottom)	SW	Dry, no stains, no odors	0 PPM
3		03SB0010204	Well graded sand	Loose	Brown	S-2A (2-2.8') SAND, TRACE GRAVEL, (Fine to coarse sand, well graded; fine gravel to 1/2", subrounded)	SW	Dry, no stains, no odors	0 PPM
4		0905 S-2	Poorly graded sand Well graded sand w/gravel	Loose	Tan	S-2B (2.8-3.4') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
5	2' / 2'	03SB0010406	Well graded sand	Loose	Tan	S-2C (3.4-3.9) SAND, SOME GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel, subrounded1/4 -1", broken rock fragments)	SW	Dry, no stains, no odors	0 PPM
6		0910 S-3	Poorly graded sand w/gravel	Loose	Tan	S-3A (0-1') SAND (Fine to coarse sand, well graded)	SW	Dry, no stains, no odors	0 PPM
7	4' / 4'	03SB0010610	Poorly graded sand	Denser	Dk Brown	S-3B (1-2') SAND, SOME GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine and coarse	SP/GW	Dry, no stains, no odors	0 PPM
8				Denser	Dk Brown	S-4A (0-0.7') Similar to S-3B	SP/GW	Dry, no stains, no odors	0 PPM
9				Loose	Light Tan	S-4B (0.7 to 1.9') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
10		0920 S-4	Well graded sand w/gravel	Loose	Tan	S-4C (1.9-3.2') SAND (Fine sand, poorly graded, similar to S-4B except for color)	SP	Dry, no stains, no odors	0 PPM
			EOB @ 10 '			S-4D (3.2-4') SAND, SOME GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel, 1/4 -1")	SW	Dry, no stains, no odors	0 PPM
						End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid Sample Location. Soil appears to be fill or re-worked material.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB002

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194327.341 REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348490.938

TRANSCRIBED BY: J.Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	3.5' / 4'	03SS0020002	Poorly graded sand w/gravel	Loose	Brown	S-1A (0-0.5) TOP SOIL, SAND, LITTLE GRAVEL (Fine to medium sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
1					Tan/Brown	S-1B (0.5-1.7') SAND, LITTLE GRAVEL (Fine sand, poorly graded; fine and coarse gravel, 1/2-1", subrounded, broken rock fragments)		Dry, no stains, no odors	0 PPM
2		0930 S-1	Well graded sand & gravel		Gray/Brown	S-1C (1.7-2') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse gravel, 1/4 -1", subrounded; white broken rock fragments at bottom of liner)	SW/GW	Dry, no stains, no odors	0 PPM
3		03SB0020204				S-2 (2-3.5') Similar to S-1C		Dry, no stains, no odors	0 PPM
4		0935 S-2							
	1.8' / 2'	03SB0020406	Poorly graded sand w/gravel		Gray/Brown	S-3A (0-0.5') SAND, LITTLE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine gravel, 1/2", subrounded)	SP	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Gray	S-3B (0.5-0.65') BROKEN ROCK	Broken Rock	Dry, no stains, no odors	0 PPM
5			Poorly graded sand w/gravel	Denser	Brown	S-3C (0.65-0.9') SAND, LITTLE/FEW GRAVEL (Similar to S-3A with more gravel)	SP	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	White	S-3D (0.9-1.2') BROKEN ROCK	Broken Rock	Dry, no stains, no odors	0 PPM
6		0940 S-3	Silty Sand w/ gravel	Denser	Dk Gray	S-3E(1.2-1.8') SAND, SOME SILT, SOME GRAVEL (Fine to coarse sand, well graded; 15% non-plastic fines; fine and coarse gravel, 1/4 -1", subrounded; broken rock fragments)	SM	Dry, no stains, no odors	0 PPM
	4' / 4'	03SB0020610	Poorly graded sand w/ silt & gravel			S-4A (0-0.9) SAND, LITTLE SILT, SOME GRAVEL (Similar to S-3E with less silt (10%))	SP-SM	Dry, no stains, no odors	0 PPM
7			Broken Rock	Loose	Light Gray	S-4B (0.9-1.6) BROKEN ROCK (Crushed cobble)	Broken Rock	Dry, no stains, no odors	0 PPM
8			Well graded sand & gravel		Gray/Brown	S-4C (1.6-2') SAND AND GRAVEL (Fine to coarse sand; fine and coarse subrounded gravel to 1/2", broken rock)	SW/GW	Dry, no stains, no odors	0 PPM
9					Brown	S-4D (2-3.5') SAND AND GRAVEL (Similar to S-4C but different color)		Dry, no stains, no odors	0 PPM
					Tan	S-4E (3.5-3.8') SAND, LITTLE GRAVEL (Fine to coarse sand, well graded; less gravel than above)		Dry, no stains, no odors	0 PPM
10		0945 S-4				S-4F (3.8-4') SAND, LITTLE GRAVEL (Similar to S-4E with more gravel at the bottom)		Dry, no stains, no odors	0 PPM
			EOB @ 10 '			End of Boring @ 10 ft bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 5.2 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB002

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB003

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194341.343

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348411.940

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	3.5' / 4'	03SS0030002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.7') TOP SOIL/SAND, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; < 5% fines)	SP	Dry, no stains, no odor	0 PPM
2		1000 S-1		Denser	Tan/Brown	S-1B (0.7-2') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odor	0 PPM
		03SB0030204			Dk Tan/ Brown	S-2A (0-0.6') SAND, LITTLE GRAVEL (Fine to medium sand mostly, trace coarse sand, poorly graded; fine gravel 1/4"-1/2", subrounded)	SP	Dry, no stains, no odor	0 PPM
3			Poorly graded sand w/gravel	Loose	Gray/Brown	S-2B (0.6'-0.9) SAND, SOME GRAVEL, TRACE SILT (Similar to S-2A with more gravel and some broken rock)	SP/GP	Dry, no stains, no odor	0 PPM
			Broken Rock		Dk Gray	S-2C (0.9-1.2') BROKEN ROCK (meta-sandstone?)	Broken Rock	Dry, no stains, no odor	0 PPM
			Poorly graded sand w/gravel		Gray/Brown	S-2D (1.2.'-1.4) SAND, SOME GRAVEL, TRACE SILT (Similar to S-2B)	SP/GP	Dry, no stains, no odor	0 PPM
4		1005 S-2	Poorly graded sand		Reddish - Brown	S-2E (1.4-1.5') SAND, TRACE GRAVEL (Fine to medium sand mostly, trace coarse sand, poorly graded; fine gravel, subrounded, 1/2" (only 1 piece))	SP	Dry, no stains, no odor	0 PPM
	0.8' / 2'	03SB0030406	Well graded sand	Loose	Gray/Brown	S-3A (0-0.2') SAND, TRACE GRAVEL (Fine to coarse sand, well graded; fine gravel, subrounded, 1/2")	SW	Dry, no stains, no odor	0 PPM
			Poorly graded sand	Denser	Brown	S-3B (0.2-0.8') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odor	0 PPM
5									
6		1010 S-3							
		03SB0030610	Poorly graded sand	Loose	Brown	S-4A (0-0.3') SAND (Fine sand, trace medium sand, poorly graded)	SP	Dry, no stains, no odor	0 PPM
7	3.4' / 4'		Well graded sand w/gravel		Gray Brown	S-4B (0.3-0.8') SAND AND GRAVEL (Fine to coarse sand, well graded; fine gravel, subrounded, 1/2")	SW	Dry, no stains, no odor	0 PPM
			Poorly graded sand			S-4C (0.8-1.2') SAND (Medium sand, poorly graded)	SP	Dry, no stains, no odor	0 PPM
8			Well graded sand w/gravel		Gray Brown	S-4D (1.2-2.4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine gravel, 1/4-1/2", subrounded)	SW	Dry, no stains, no odor	0 PPM
9			Poorly graded sand		Tan	S-4E (2.4-3.1') SAND, TRACE GRAVEL (Medium sand, trace coarse sand, poorly graded; fine gravel, 1/4-1/2",subrounded)	SP	Dry, no stains, no odor	0 PPM
				Loose	Tan	S-4F (3.1-3.4') SAND AND GRAVEL (Fine to coarse well graded sand; fine and coarse gravel, 1/2 to 1", subrounded, rock fragments)	SW	Dry, no stains, no odor	0 PPM
10		1015 S-4	Well graded sand w/gravel						
			EOB @ 10 ft			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Soil appears to be fill or re-worked material.

Tetra Tech, Inc.

BORING NO.: SB003

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB004

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194349.724 REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348433.204

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	3.5' / 4'	03SS0040002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.6) TOP SOIL/SAND, TRACE GRAVEL (Fine to medium sand, trace coarse sand; fine gravel, 1/8-1/4", subrounded; roots)	SP	Dry, no stains, no odors	0 PPM
					Tan/Brown	S-1B (0.6-1.6') SAND, TRACE GRAVEL (Fine sand, poorly graded; fine gravel, 1/4-1/2", subrounded, < 5 pieces)	SP	Dry, no stains, no odors	0 PPM
2		1050 S-1			Tan/Gray	S-1C (1.6-2') SAND, TRACE GRAVEL (Fine sand, poorly graded; trace coarse gravel, 1", subrounded, only 1 piece)	SP	Dry, no stains, no odors	0 PPM
		03SB0040204 FD01-101014 (DUP 01)			Tan/Gray	S-2A (0-0.6') Similar to S-1C	SP	Dry, no stains, no odors	0 PPM
3			Well graded sand w/gravel		Gray/Brown	S-2B (0.6 -1.5') SAND AND GRAVEL, BROKEN ROCK (Fine to coarse sand, well graded; fine and coarse gravel, 1/2-1 1/4", subrounded, rock fragments)	SW/GW	Dry, no stains, no odors	0 PPM
4		1055 S-2							
5	2' / 2'	03SB0040406	Porly graded sand		Gray/Brown	S-3A (0-0.3') SAND AND GRAVEL (Similar to S-2B)	SW/GW	Dry, no stains, no odors	0 PPM
				Loose	Reddish Brown	S-3B (0.3-0.7) SAND (Medium sand, poorly graded; trace fine gravel, to 1/4", subrounded)	SP	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel	Denser	Dk Gray/ Red	S-3C (0.7-1.7') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel, 1/2-1 1/4", subrounded, broken rock fragments, oxidized grains)	SW/GW	Dry, no stains, no odors	0 PPM
6		1100 S-3	Broken Rock	Loose	Gray	S-3D (1.7-2') BROKEN ROCK FRAGMENTS (Cobble)	Broken Rock	Dry, no stains, no odors	0 PPM
7	4' / 4'	03SB0040610	Well graded sand w/gravel		Gray/Brown with Red	S-4 (0-4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel, 1/4-1", subrounded, oxidized broken rock fragments)	SW/GW	Dry, no stains, no odors	0 PPM
8									
9									
10		1105 S-4							
			EOB @ 10 '			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous soil sampling to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	Not Encountered
OTHER OBSERVATIONS::	PID reading over soil core. Biased sample location. Potential fill or re-worked material.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB005

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194374.693

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348471.949

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	3.1' / 4'	03SS0050002	Poorly graded sand	Loose	Brown	S-1 (0-2') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine and coarse subrounded gravel 1/2 - 1"; < 5% fines)	SP	Dry, no stains, no odor	0 PPM
2		1115 S-1							
3		03SB0050204		Denser	Brown	S-2 (0-1.1') SAND, LITTLE GRAVEL (Similar to S-1, except material is denser)	SP	Dry, no stains, no odor	0 PPM
4		1120 S-2							
5	2' / 2'	03SB0050406	Well graded sand w/gravel	Denser	Brown	S-3A (0-1') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4-1 1/2"; white cobble at 0.8')	SW	Dry, no stains, no odor	0 PPM
				Loose	Red, Brown and Tan	S-3B (1-1.7') SAND AND GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel, to 1/2")	SW	Dry, no stains, no odor	0 PPM
			Poorly graded sand w/silt	Denser	Dk Gray	S-3C (1.7-1.85') SAND, LITTLE GRAVEL, SOME SILT (Fine sand mostly, trace medium, trace coarse sand, poorly graded; 10% non-plastic fines; fine gravel, 1/2", subrounded)	SP-SM	Dry, no stains, no odor	0 PPM
6		1125 S-3	Poorly graded sand	Loose	Tan to Red/ Brown	S-3D (1.85-2') SAND, TRACE GRAVEL (Medium sand with trace coarse sand; fine gravel, 1/2", subrounded)	SP	Dry, no stains, no odor	0 PPM
	3' / 4'	03SB0050610		Loose	Tan to Red/ Brown	S-4A (0-0.3') SAND, TRACE GRAVEL (Similar to S-3D)	SP	Dry, no stains, no odor	0 PPM
			Poorly graded sand w/silt	Denser	Dk Brown	S-4B (0.3-0.9') SAND, LITTLE SILT, TRACE GRAVEL (Fine to medium sand, trace coarse sand; 10% non-plastic fines; fine gravel to 1/2", subrounded)	SP-SM	Dry, no stains, no odor	0 PPM
7			Poorly graded sand	Loose	Gray/ Reddish	S-4C (0.9-1.4') SAND, LITTLE GRAVEL (Medium to coarse sand, poorly graded; fine and coarse gravel, 1/4-3/4", subrounded)	SP	Dry, no stains, no odor	0 PPM
			Broken rock	Loose	White/Off White	S-4D (1.4-1.7') BROKEN ROCK (Oxidized cobble)	Broken Rock	Dry, no stains, no odor	0 PPM
			Silty sand	Denser	Dk Gray	S-4E (1.7-1.9') SILTY SAND (Fine sand, poorly graded, oxidized grains; >15% non-plastic fines)	SM	Dry, no stains, no odor	0 PPM
8			Well graded sand	Loose	Light Gray	S-4F (1.9-2.7') SAND (Fine to coarse sand, well graded; trace fine gravel to 1/2", subrounded)	SW	Dry, no stains, no odor	0 PPM
			Well graded sand w/gravel	Loose	Tan/Brown with Red	S-4G (2.7-3') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel to 1/2", subrounded, broken rock fragments	SW	Dry, no stains, no odor	0 PPM
9									
10		1330 S-4							
			EOB @ 10 ft			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 6.3 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB006

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194384.169

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348523.469

TRANSCRIBED BY: J.Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	3.4' / 4'	03SS0060002	Poorly graded sand	Denser	Dk Brown	S-1A (0-0.3) ROOT MAT WITH GRASS, SAND, TRACE GRAVEL (Fine to medium sand, poorly graded; fine gravel to 1/2", subrounded, roots)	SP	Dry, no stains, no odors	0 PPM
					Brown	S-1B (0.3-1.1') SAND, TRACE GRAVEL (Fine to medium sand, poorly graded; fine subrounded gravel to 1/2"; roots)	SP	Dry, no stains, no odors	0 PPM
2		1145 S-1	Well graded sand w/gravel	Denser	Gray/Brown	S-1C (1.1-2') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/2 - 1 1/4"; broken rock fragments)	SW	Dry, no stains, no odors	0 PPM
3		03SB0060204	Poorly graded sand	Loose	Tan/Brown	S-2A (0-0.9') SAND, TRACE GRAVEL (Medium sand, with trace coarse sand, poorly graded; trace fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
					Tan/Brown	S-2B (0.9-1.2') SAND, LITTLE GRAVEL (Fine sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
4		1150 S-2			Light Gray	S-2C (1.2-1.4') SAND (Fine sand at bottom of interval, poorly graded)	SP	Dry, no stains, no odors	0 PPM
5	2' / 2'	03SB0060406		Loose	Light Gray	S-3A (0-0.8') SAND (Similar to S-2C)	SP	Dry, no stains, no odors	0 PPM
6		1155 S-3	Silty sand	Denser	Dk Gray	S-3B (0.8-2') SILTY SAND, TRACE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; trace fine gravel to 1/2", two pieces of coarse gravel to 1 1/4")	SM	Dry, no stains, no odors	0 PPM
7	4' / 4'	03SB0060610	Well graded sand w/silt and gravel	Denser	Dk Brown/ Gray	S-4A (0-0.8') SAND AND GRAVEL, LITTLE SILT (Fine to coarse sand, well graded; fine gravel, subrounded to 1/2"; about 10% non-plastic fines)	SW-SM	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	White	S-4B (0.8-1.1') BROKEN ROCK/COBBLE	Broken Rock	Dry, no stains, no odors	0 PPM
8			Well graded sand w/gravel	Loose	Gray/Brown	S-4C (1.1-3.4') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse gravel, subrounded and subangular, 1/4' -1 1/2" with oxidized rock fragments; <10% non-plastic fines)	SW/GW	Dry, no stains, no odors	0 PPM
9									
			Silty sand	Dense	Black/ Dk Gray	S-4D (3.4-3.6') SILTY SAND (Fine sand with oxidized grains)	SM	Dry, no stains, no odors	0 PPM
10		1200 S-4	Well graded sand w/gravel	Loose	Gray/Brown	S-4E (3.6-4') SAND AND GRAVEL, TRACE SILT (Similar to S-4C)	SW/GW	Dry, no stains, no odors	0 PPM
			EOB @ 10 ft			End of Boring at 10 ft bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to approximately 5 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB006

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB007

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194389.671

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348559.029

TRANSCRIBED BY: J.Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8' / 2'	03SS0070002 Lab QC #1	Poorly graded sand w/gravel	Loose	Dark Brown	S-1A (0-0.3') TOP SOIL, SAND, SOME GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine and coarse gravel, subrounded 1/4 to 1 1/4"; 5% silt)	SP	Dry, no stains, no odors	0 PPM
			Broken Rock	--	Gray	S-1B (0.3-0.5') ANGULAR BROKEN ROCK/SMALL COBBLE	Broken Rock	Dry, no stains, no odors	0 PPM
1			Poorly graded sand w/gravel	Denser	Tan/Brown	S-1C (0.5-1.8') SAND, LITTLE GRAVEL (Fine sand mostly, trace medium sand, poorly graded; fine gravel to 1/2", subrounded; oxidized sand grains)	SP	Dry, no stains, no odors	0 PPM
2		1215 S-1							
3	2' / 2'	03SB0070204	Well graded sand	Loose	Gray/Brown	S-2 (0-2') SAND AND GRAVEL (Fine to coarse well graded sand; fine and coarse subrounded gravel 1/4 to 1")	SW/GW	Dry, no stains, no odors	0 PPM
4		1220 S-2							
5	2' / 2'	03SB0070406		Loose	Gray/Brown	S-3 (0-2') SAND AND GRAVEL (Similar to S-2A, with some oxidized rock fragments)	SW/GW	Dry, no stains, no odors	0 PPM
6		1225 S-3							
7	4' / 4'	03SB0070610		Loose	Gray	S-4A (0-0.8') SAND AND GRAVEL (Fine to coarse sand, well graded; fine gravel to 1/2", subrounded)	SW/GW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Tan to Red/Brown	S-4B (0.8-1.4') SAND (Medium sand mostly, trace coarse sand with oxidized grains, poorly graded)	SP	Dry, no stains, no odors	0 PPM
				Denser	Tan/Brown	S-4C (1.4-1.6') SAND (Fine sand, poorly graded, no oxidized grains)	SP	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel						
8				Dense	Gray/Brown	S-4D (1.6-2.7') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel 1/4 - 1 1/4", subrounded; broken and oxidized rock fragments)	SW/GW	Dry, no stains, no odors	0 PPM
9									
			Broken Rock	Dense	White	S-4E (2.7-3.2') BROKEN ROCK/COBBLE	Broken Rock	Dry, no stains, no odors	0 PPM
			Well graded sand w/ gravel	Dense	Gray/Brown	S-4F (3.2-4') SAND AND GRAVEL (Similar to S-4D)	SW/GW	Dry, no stains, no odors	0 PPM
10		1200 S-4							
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Pin flag marking location was disturbed; location is estimated. Biased sample location. Soil appears to be fill or re-worked material.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB007a

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194401.617

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348571.170

TRANSCRIBED BY: J.Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS007a-0002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.5) ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine gravel to 1/4", subrounded; roots)	SP	Dry, no stains, no odors	0 PPM
1				Loose	Gray/Brown	S-1B (0.5-1') SAND, TRACE GRAVEL, TRACE SILT (Fine sand, trace medium sand, poorly graded; fine gravel to 1/2", subrounded; <5% fines)	SP	Dry, no stains, no odors	0 PPM
				Loose	Brown	S-1C (1-1.4') SAND (Fine to medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
2		1015 S-1		Loose	Brown	S-1D (1.4-2') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine gravel to 1/2", one piece to 1"; <5% fines; one rock fragment)	SP	Dry, no stains, no odors	0 PPM
3	1' / 2'	03SB007a-0204	Poorly graded sand w/gravel	Loose	Brown	S-2 (0-1') SAND, FEW GRAVEL, TRACE SILT (Fine to medium sand; more coarse sand compared to S-1D; more gravel relative to S-1D; rock fragment)	SP	Dry, no stains, no odors	0 PPM
4		1020 S-2							
5	0.5' / 2'	03SB007a-0406	Poorly graded sand	Loose	Brown	S-3 (0-0.5') SAND, TRACE GRAVEL, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; fine gravel to 1/2", subrounded; < 5% fines)	SP	Dry, no stains, no odors	0 PPM
6		1025 S-3							
7	2.3' / 2.5'	03SB007a-0610	Well graded sand w/gravel	Loose	Brown	S-4A (0-1') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse gravel, 1/4 to 1", subrounded; <5% fines)	SW/GW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Tan	S-4B (1-1.3') SAND, LITTLE GRAVEL (Mostly fine sand; one piece of coarse subrounded gravel to 1 1/2")	SP	Dry, no stains, no odors	0 PPM
			Silty sand	Dense	Dk Gray	S-4C (1.3-1.6') SILTY SAND, LITTLE GRAVEL (Mostly silt; fine sand, poorly graded; oxidized sand grains; fine and coarse subangular and subrounded gravel)	SM	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Gray	S-4D (1.6-1.85') BROKEN ROCK/COBBLE	Broken Rock	Dry, no stains, no odors	0 PPM
8.5		1030 S-4	Poorly graded sand w/ broken rock	Loose	Light Gray/ Brown	S-4E (1.85-2.3') SAND, ROCK FRAGMENTS (fine to medium sand, trace coarse sand, poorly graded; rock fragments)	SP, Broken Rock	Dry, no stains, no odors	0 PPM
			Refusal @ 8.5 ft			Refusal - hit a rock at 8.5' bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLIN: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Remeasured orig. loc. for SB007 and advanced a 2nd boring. Biased sample location. Pot. fill or re-worked mat'l. to 7.3 ftbgs

w/till-like constituents below.

Tetra Tech, Inc.

BORING #: SB007a

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB008

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/10/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/10/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194402.493

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348518.144

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0080002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.3) ROOT MAT, SAND, TRACE GRAVEL (Fine sand mostly, trace medium and coarse sand, poorly graded; fine gravel to 1/2", subrounded; roots)	SP	Dry, no stains, no odors	0 PPM
				Loose	Brown	S-1B (0.3-1.4') SAND, LITTLE GRAVEL (Fine sand mostly, trace coarse sand, poorly graded; fine and coarse gravel, 1/4-3/4", subrounded)	SP	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Off-White	S-1C (1.4-1.6') BROKEN ROCK (Quartz fragments)	Broken Rock	Dry, no stains, no odors	0 PPM
2		1245 S-1	Poorly graded sand	Loose	Tan/Brown	S-1D (1.6-2') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
3	1.4' / 2'	03SB0080204/FD02		Loose	Tan/Brown	S-2 (0 -1.4 ') SAND, TRACE GRAVEL (Fine sand, trace medium sand, poorly graded; fine gravel to 1/2", subrounded; trace coarse sand at bottom of liner)	SP	Dry, no stains, no odors	0 PPM
4		1250/0000 S-2							
5	2' / 2'	03SB0080406		Loose	Light Tan/ Brown	S-3A (0-0.5') SAND Fine sand with trace medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
				Loose	Light Tan/ Brown	S-3B (0.5-1.6') SAND, TRACE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine gravel to 1/2", subrounded)	SP	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel	Loose	Gray/Brown	S-3C (1.6 -2') SAND and GRAVEL, ROCK FRAGMENT (Fine to coarse sand, well graded; fine gravel to 1/2", trace coarse gravel to 1", subrounded; broken quartz pebble)	SW	Dry, no stains, no odors	0 PPM
6		1250 S-3							
7	3.6' / 4'	03SB0080610	Poorly graded sand w/silt and gravel	Denser	Dk Gray	S-4A (0-1.6') SAND AND GRAVEL, SOME SILT (Fine to medium sand mostly, trace coarse sand, poorly graded; fine subrounded gravel to 1/2", oxidized; abpout 10% non-plastic fines)	SP-SM	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	White/Gray Black	S-4B (1.6-2.1) BROKEN ROCK (cobble)	Broken Rock	Dry, no stains, no odors	0 PPM
8									
9			Well graded sand w/gravel and broken rock	Denser	Gray/Red-dish Brown	S-4C (2.1-3.2') SAND and GRAVEL (Fine to coarse sand, well graded (coarse grains oxidized); fine and coarse gravel, 1/4" to 1 1/2", subrounded; rock fragments)	SW/GW, Broken Rock	Dry, no stains, no odors	0 PPM
			Broken Rock						
10		1300 S-4		Loose	Off White/ Pink	S-4E (3.2-3.4') BROKEN ROCK FRAGMENTS (Cobble, oxidized)	Broken Rock	Dry, no stains, no odors	0 PPM
			EOB @ 10 ft			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 6 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194412.715 Easting 348552.633

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB009

START DATE: 10/10/14

COMPLETION DATE: 10/10/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0090002	Well graded sand	Loose	Dk Brown	S-1A (0-0.65') SAND, TRACE GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2"; roots)	SW	Dry, no stains, no odor	0 PPM
2		1315 S-1	Poorly graded sand	Loose	Tan/Brown	S-1B (0.65- 2') SAND, TRACE GRAVEL (Mostly fine sand, trace medium sand, poorly graded; fine subrounded gravel, 1/4 - 1/2"; some oxidized grains)	SP	Dry, no stains, no odor	0 PPM
3	1.7' / 2'	03SB0090204		Denser	Tan/Brown	S-2A (0-0.7') SAND, LITTLE GRAVEL (Mostly fine sand,trace medium sand, poorly graded; fine and coarse subrounded gravel to 1" (only 2 pieces of coarse gravel); rock fragments)	SP	Dry, no stains, no odor	0 PPM
			Well graded sand w/gravel	Loose	Gray/Bown	S-2B (0.7-1.4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/2-3/4", rock fragments)	SW/GW	Dry, no stains, no odor	0 PPM
4		1320 S-2	Poorly graded sand		Gray	S-2C (1.4-1.7') SAND, TRACE GRAVEL (Medium sand, trace coarse sand, poorly graded; fine gravel to 1/2", subrounded)	SP	Dry, no stains, no odor	0 PPM
5	1.8' / 2'	03SB0090406	Well graded sand w/gravel		Tan/Brown	S-3A (0-0.8') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4 to 1 1/2")	SW/GW	Dry, no stains, no odor	0 PPM
			Poorly graded sand			S-3B (0.8-1.5') SAND, TRACE GRAVEL (Mostly medium sand with trace coarse sand, poorly graded; trace fine gravel to 1/2", subrounded)	SP	Dry, no stains, no odor	0 PPM
6		1325 S-3	Well graded sand w/gravel	Loose	Tan/Brown	S-3C (1.5-1.8') SAND AND GRAVEL (Similar to S-3A)	SW/GW	Dry, no stains, no odor	0 PPM
	3.7' / 4'	03SB0090610	Poorly graded sand	Denser	Brown/Gray	S-4A (0-0.4') SAND (Fine sand, poorly graded with oxidized grains)	SP	Dry, no stains, no odor	0 PPM
			Well graded sand		Brown Gray	S-4B (0.4-0.9') SAND, TRACE GRAVEL (Fine to coarse sand, well graded, oxidized grains; fine subrounded gravel to 1/2")	SW	Dry, no stains, no odor	0 PPM
7			Silty sand w/gravel	Denser	Dk Gray	S-4C (0.9-1.7') SILTY SAND, LITTLE GRAVEL (Fine sand, trace medium sand, poorly graded; >15% non-plastic fines; fine and coarse subrounded gravel 1/4-1", with oxidized grains)	SM	Dry, no stains, no odor Can't roll soil out w/o breaking	0 PPM
8			Poorly graded sand	Loose	Gray/Brown	S-4D (1.7-2.1') SAND, LITTLE GRAVEL (Fine sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odor	0 PPM
			Well graded sand w/gravel		Dk Gray	S-4E (2.1-2.5') SAND AND GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2"; rock fragments with oxidized grains)	SW	Dry, no stains, no odor	0 PPM
9					Red/Brown	S-4F (2.5-3.3') SAND AND GRAVEL (Similar to S-4E except color)	SW	Dry, no stains, no odor	0 PPM
10		1330 S-4	Broken Rock	Loose	Dk Gray	S-4G (3.3-3.7) BROKEN ROCK FRAGMENT (Cobble)	Broken Rock	Dry, no stains, no odor	0 PPM
			EOB @ 10 ft			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System (DP) ; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Pin flag marking location was disturbed; location is estimated. Biased sample location. Potential fill or re-worked material to about 7 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194419.334 Easting 348563.788

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB009a

START DATE: 10/13/14

COMPLETION DATE: 10/13/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS009a0002 0955 S-1	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.5') ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL, TRACE SILT (Fine to medium sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines; roots)	SP	Dry, no stains, no odor	0 PPM
2				Loose	Brown	S-1B (0.5- 2') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand mostly, little coarse sand; fine and coarse subrounded gravel, 1/2 - 1"; <5% fines; 1/4" thick dark-colored interval of fine sand at base)	SP	Dry, no stains, no odor	0 PPM
3	1.4' / 2'	03SB009a0204 1000 S-2	Poorly graded sand w/silt	Loose	Brown	S-2 (0-1.4') SAND, LITTLE GRAVEL, LITTLE SILT (Similar to above except more non-plastic fines - 10-15%)	SP-SM	Dry, no stains, no odor	0 PPM
4									
5	1.6' / 2'	03SB009a0406 1005 S-3	Poorly graded sand	Loose	Brown	S-3 (0-1.6') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand mostly, little coarse sand; fine and coarse subrounded gravel, 1/4 to 1", < 5% fines)	SP	Dry, no stains, no odor	0 PPM
6									
7	3.4' / 4'	03SB009a0610		Loose	Brown	S-4A (0-2.3') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand mostly, trace coarse; fine and coarse subrounded gravel, 1/4 to 1 1/4")	SP	Dry, no stains, no odor	0 PPM
8									
9			Silty sand	Denser	Dk Gray	S-4B (2.3-2.6') SILTY SAND, TRACE GRAVEL (Fine sand, trace medium sand; 15% non-plastic fines; subrounded gravel - one large piece to 1 1/2")	SM	Dry, no stains, no odor	0 PPM
10		1010 S-4	Well graded sand w/silt and gravel	Loose	Gray/Brown Light GrayBrn w/Red	S-4C (2.6-3.4') SAND AND GRAVEL, LITTLE SILT (Fine to coarse sand, well graded, oxidized grains; fine and coarse subrounded gravel, 1/4 to 1 1/4"; 10% fines)	SW-SM	Dry, no stains, no odor	0 PPM
			EOB @ 10 ft			End of Boring at 10 feet bgs; backfilled boring			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous soil sampling to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	Not Encountered
OTHER OBSERVATIONS::	PID reading over soil core. Remeasured original location for SB009 and advanced a 2nd boring. Biased sample location. Pot. fill or re-worked material to about 8 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194423.690 Easting 348582.350

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB010

START DATE: 10/13/14

COMPLETION DATE: 10/13/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
			Asphalt surface			Asphalt surface - removed top 1 to 1.5" with dedicated bit prior to drilling			
0	2' / 2'	03SS0100002 Lab QC #2	Well graded sand	Loose	Brown	S-1A (0-1.7) SAND, LITTLE GRAVEL, TRACE SILT (fine to coarse sand, well graded; fine gravel to1/2", subrounded; <5% fines)	SW	Dry, no stains, no odors; Roadbase material?	0 PPM
1									
2		0930 S-1	Poorly graded sand w/silt	Denser		S-1B (1.7-2') SAND, LITTLE SILT (Fine sand, poorly graded; 10% non-plastic fines)	SP/SM	Dry, no stains, no odors	0 PPM
	1' / 2'	03SB0100204				S-2A (0 -0.3') SAND, LITTLE SILT (Similar to S-1B)		Dry, no stains, no odors	0 PPM
3			Poorly graded sand w/silt & gravel	Denser		S-2B (0.3 -1') SAND, SOME GRAVEL, LITTLE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine and coarse gravel, 1/4 to 1", subrounded; 10% non-plastic fines)	SP/SM	Dry, no stains, no odors	0 PPM
4		0935 S-2							
5	1.7' / 2'	03SB0100406	Well graded sand w/gravel	Loose	Brown	S-3A (0-1.5') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse gravel, subrounded 1/4 to 1"; <5% fines)	SW/GW	Dry, no stains, no odors	0 PPM
6		0940 S-3			Light Gray	S-3B (1.5-1.7') SAND AND GRAVEL, TRACE SILT (Similar to S-3A, except for color)		Dry, no stains, no odors	0 PPM
		03SB0100610			Tan Brown	S-4A (0-0.5') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4 -3/4")	SW/GW	Dry, no stains, no odors	0 PPM
7			Poorly graded sand		Gray Tan	S-4B (0.5-1') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
	4' / 4'			Loose	Dk Tan	S-4C (1-1.8') SAND (Similar to S-4B except color; with oxidized layers about 1/4" thick, fine to medium sand with trace coarse sand at bottom	SP	Dry, no stains, no odors	0 PPM
8			Silty sand w/gravel	Denser	Dk Gray	S-4D (1.8-2.4') SILTY SAND AND GRAVEL (Fine sand, trace medium and coarse; fine and coarse subrounded gravel, 1/4 -1"; 15% non-plastic fines)	SM	Dry, no stains, no odors	0 PPM
9			Well graded sand w/silt & gravel	Denser	Dk Red/Brn and Gray	S-4E (2.4-4') SAND AND GRAVEL, LITTLE SILT (Fine to coarse well graded sand; fine and coarse subrounded gravel, 1/4 -1"; 10% non-plastic fines)	SW-SM	Dry, no stains, no odors	0 PPM
10		0945 S-4							
			EOB @ 10 ft			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Pot. fill or re-worked material to about 7.8 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB011

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194433.209

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348521.086

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0110002	Poorly graded sand	Denser	Dk Brown	S-1A (0-0.2) ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL, TRACE SILT (fine sand, trace medium sand; fine gravel to 1/4"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
2		1110 S-1	Poorly graded sand w/gravel	Loose	Brown	S-1B (0.2-2') SAND, SOME GRAVEL, TRACE SILT (Mostly fine sand, trace medium and coarse sand, poorly graded; fine and coarse gravel, 1/4 to 1 1/4", subrounded; <5% fines)	SP	Dry, no stains, no odors	0 PPM
3	1.4' / 2'	03SB0110204		Loose	Light Brown	S-2A (0-1') SAND, SOME GRAVEL, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; fine and coarse gravel, 1/4 to 1 1/2", subrounded; <5% fines)	SP	Dry, no stains, no odors	0 PPM
4		1115 S-2	Poorly graded sand	Loose	Light Brown	S-2B (1-1.4') SAND (Mostly medium sand, trace fine and coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
5	2' / 2'	03SB0110406	Well graded sand w/gravel	Loose	Gray/Brown	S-3A (0-0.6') SAND, SOME GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel, 1/4 to 1", subrounded; <5% fines)	SW	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	White	S-3B (0.6-0.8') BROKEN QUARTZ PEBBLE	Broken Rock	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Red/Brown	S-3C (0.8-1.1') SAND (Mostly medium sand, trace fine and coarse coarse; oxidized zone)	SP	Dry, no stains, no odors	0 PPM
6		1120 S-3	Well graded sand w/gravel	Loose	Tan/Brown	S-3D (1.1-1.6') SAND, SOME GRAVEL (Fine to coarse sand, well graded; fine gravel to 1/2", subrounded; <5% fines)	SW	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Off White	S-3E (1.6-1.7') BROKEN ROCK FRAGMENT	Broken Rock	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel	Loose	Gray/Brown	S-3F (1.7-2') SAND, FEW GRAVEL (Similar to S-3D with less gravel and color change).	SW	Dry, no stains, no odors	0 PPM
7		03SB0110610		Loose	Tan/Brown	S-4A (0-1') SAND AND GRAVEL (Fine to coarse well graded sand; fine subrounded gravel to 1/2"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
8	4' / 4'		Poorly graded sand	Loose	Reddish Brown	S-4B (1-1.5') SAND (Medium sand, poorly graded; oxidized grains)	SP	Dry, no stains, no odors	0 PPM
			Silty sand w/gravel	Denser	Dk Gray	S-4C (1.5-2.5') SILTY SAND, SOME GRAVEL (Fine sand, trace medium sand; fine and coarse subrounded gravel to 1 1/2"; >15% non-plastic fines)	SM	Dry, no stains, no odors	0 PPM
9			Broken Rock	Loose	White	S-4D (2.5-3') BROKEN COBBLE, PULVERIZED	Broken Rock	Dry, no stains, no odors	0 PPM
10		1125 S-4	Silty sand w/gravel	Denser	Dk Brown	S-4E (3-3.4') SILTY SAND, SOME GRAVEL (Fine to coarse sand; fine subrounded gravel to 1/2"; broken rock fragments; 10-15% non-plastic fines)	SM	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Gray	S-4F (3.4-3.7') PULVERIZED ROCK	Broken Rock	Dry, no stains, no odors	0 PPM
			Silty sand w/gravel	Denser	Dk Gray	S-4G (3.7 -4') SITLY SAND, SOME GRAVEL (Similar to S-4C with oxidized spots)	SM	Dry, no stains, no odors	0 PPM

EOB @ 10 feet

End of Boring at 10 feet bgs; boring backfilled

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Pot. fill or re-worked material to 7.5 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB012

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194401.657

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348406.655

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0120002 1040 S-1	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.25') ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL (Fine to med sand, trace coarse sand; fine subrounded gravel to 1/2"; roots)	SP	Dry, no stains, no odor	0 PPM
2				Loose	Light Brown	S-1B (0.25- 2') SAND, TRACE SILT (Mostly fine sand, poorly graded; <5% fines)	SP	Dry, no stains, no odor	0 PPM
3	1.8' / 2'	03SB0120204		Loose	Light Brown	S-2A (0-0.7') SAND, TRACE GRAVEL (Mostly fine sand, poorly graded; 1 piece fine subrounded gravel to 1/2")	SP	Dry, no stains, no odor	0 PPM
4		1045 S-2	Well graded sand w/gravel	Loose	Gray/Brown	S-2B (0.7-1.8') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4 to 1 1/4"; <5 % fines)	SW/GW	Dry, no stains, no odor	0 PPM
5	2' / 2'	03SB0120406		Loose	Gray/Brown	S-3 (0-2') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4 to 1 1/2")	SW/GW	Dry, no stains, no odor	0 PPM
6		1050 S-3							
7	4' / 4'	03SB0120610	Silty sand w/gravel	Denser	Dk Gray	S-4A (0-1.2') SILTY SAND, SOME GRAVEL (Fine to medium sand, trace coarse; fine subrounded gravel, to 1/2")	SM	Dry, no stains, no odor	0 PPM
			Broken Rock	Loose	Gray	S-4B (1.2-1.6') ROCK/COBBLE	Broken Rock	Dry, no stains, no odor	0 PPM
8			Silty sand w/gravel	Loose	Gray/Brown	S-4C (1.6-2.7') SAND AND GRAVEL, SOME SILT (Fine to coarse sand, well graded; fine gravel, rock fragments up to 1 1/2";15% non-plastic fines)	SM	Dry, no stains, no odor	0 PPM
9			Well graded sand w/gravel	Loose	Tan/Brown	S-4D (2.7-3.5') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse gravel, subrounded to 1/2"; 5% fines (less than S-4C); color change; broken rock.	SW	Dry, no stains, no odor	0 PPM
			Poorly graded sand	Loose	Brown	S-4E (3.5 -3.75') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odor	0 PPM
10		1055 S-4	Well graded sand w/gravel	Loose	Tan/Brown	S-4F (3.75-4') SAND AND GRAVEL (Similar to S-4D with oxidized gravel)	SW	Dry, no stains, no odor	0 PPM

EOB @ 10 feet

End of Boring at 10 feet bgs; boring backfilled

Tetra Tech, Inc.

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous soil sampling to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	Not Encountered
OTHER OBSERVATIONS::	PID reading over soil core. Grid sample location. Soil appears to be fill or re-worked material to about 6 ft bgs.

BORING NO.: SB012

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB013

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194421.130

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348445.012

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0130002	Poorly graded sand	Loose	Brown	S-1 (0-2') SAND, LITTLE GRAVEL	SP	Dry, no stains, no odors	0 PPM
2		1210 S-1				(Fine to medium sand mostly, trace coarse sand, poorly graded; fine subrounded gravel to 1/4")			
3	0.4' / 2'	03SB0130204				S-2 (0-0.4') SAND, LITTLE GRAVEL	SP	Dry, no stains, no odors	0 PPM
4		1215 S-2				(Similar to S-1A)			
5	1.8' / 2'	03SB0130406				S-3 (0-1.8') SAND, LITTLE GRAVEL	SP	Dry, no stains, no odors	0 PPM
6		1220 S-3				(Similar to S-1A)			
7	3.8' / 4'	03SB0130610			Brown	S-4A (0-1.1') SAND, SOME GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine and coarse subrounded gravel 0.25 - 1.5"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
8			Well graded sand w/gravel		Gray/Brown	S-4B (1.1-1.9') SAND AND GRAVEL, TRACE SILT (Fine to coarse well graded sand; fine and coarse subrounded gravel 1/4 -1/2")	SW	Dry, no stains, no odors	0 PPM
9						S-4C (1.9-2.3') SAND AND GRAVEL, TRACE SILT, PULVERIZED ROCK (Material similar to S-4B with pulverized rock)	SW/GW	Dry, no stains, no odors	0 PPM
10		1225 S-4		Loose	Gray/Brown	S-4D (2.3-3.8) SAND AND GRAVEL, TRACE SILT (Similar to S-4B)	SW	Dry, no stains, no odors	0 PPM
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Soil appears to be fill or re-worked material.

Tetra Tech, Inc.

BORING NO.: SB013

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB014

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194455.382

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348544.752

TRANSCRIBED BY: J.Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0140002	Poorly graded sand	Loose	Brown	S-1A (0-0.3) TOP SOIL/ROOT MAT, SAND, TRACE SILT (Fine to medium sand, poorly graded; <5% silt; roots)	SP	Dry, no stains, no odors	0 PPM
					Brown	S-1B (0.3-1.3') SAND, TRACE GRAVEL, TRACE SILT (Fine sand, trace medium sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
2		1300 S-1	Poorly graded sand w/gravel		Gray/Brown	S-1C (1.3-2') SAND, SOME GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine gravel to 1/2", 1 piece to 3/4", subrounded; <5% fines)	SP	Dry, no stains, no odors	0 PPM
3	1.2' / 2'	03SB0140204			Tan/Brown	S-2 (0-1.2') SAND, SOME GRAVEL, TRACE SILT (Similar to S-1C, except color)	SP	Dry, no stains, no odors	0 PPM
4		1305 S-2							
5	2' / 2'	03SB0140406			Tan/Brown	S-3 (0-2') SAND, SOME GRAVEL, TRACE SILT (Similar to S-2)	SP	Dry, no stains, no odors	0 PPM
6		1310 S-3							
7	3.3' / 4'	03SB0140610			Brown	S-4A (0-1.6') SAND, SOME GRAVEL, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel, 1/4 to 1/2"; coarse subrounded gravel to 1")	SP	Dry, no stains, no obvious odor	6.2 PPM at top of S-4A
8				Loose	Brown	S-4B (1.6-1.9') SAND, LITTLE GRAVEL (Medium sand, trace fine and coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
9			Silty sand w/gravel	Denser	Dk Gray	S-4C (1.9-3') SILTY SAND, SOME GRAVEL (Mostly fine sand; some fine subrounded gravel, oxidized spots)	SM	Dry, no stains, no odors	0 PPM
10		1315 S-4	Poorly graded sand	Loose	Gray/Brown	S-4D (3-3.3') SAND, LITTLE GRAVEL (Mostly medium sand, trace fine and coarse sand; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 8 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB014

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB015

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194442.203

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348457.683

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0150002	Poorly graded sand	Loose	Light Brown	S-1A (0-0.3) TOP SOIL/ROOT MAT, SAND, TRACE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/8"; roots)	SP	Dry, no stains, no odors	0 PPM
			Silty sand	Denser	Brown	S-1B (0.3-1.1') SILTY SAND, TRACE GRAVEL (Silty fine sand (>15% fines); fine subrounded gravel to 1/2")	SM	Dry, no stains, no odors	0 PPM
2		1330 S-1	Well graded sand w/gravel	Loose	Gray/Brown	S-1C (1.1-2') SAND AND GRAVEL, TRACE SILT (Fine to coarse, well graded sand; fine and coarse subround gravel, 1/2-1" with black chips (rock frags?))	SW	Dry, no stains, no odors	0 PPM
3	1.4' / 2'	03SB0150204			Gray/Brown	S-2A (0-0.8') SAND, SOME GRAVEL, TRACE SILT (Similar to S-1C)	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand		Tan/Brown	S-2B (0.8-1') SAND (Fine sand)	SP	Dry, no stains, no odors	0 PPM
4		1335 S-2	Well graded sand		Yellow Brown	S-2C (1-1.4') SAND, LITTLE GRAVEL Fine to coarse sand, well graded; fine gravel, subrounded to 1/4 ")	SW	Dry, no stains, no odors	0 PPM
5	1.8' / 2'	03SB0150406	Poorly graded sand		Brown	S-3A (0-0.1') SAND (Fine to medium sand, trace coarse sand, poorly graded; rock fragments)	SP	Dry, no stains, no odors	0 PPM
			Broken Rock		Off White	S-3B (0.1-0.3') BROKEN ROCK	Broken Rock	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel		Tan/Brown	S-3C (0.3-0.8') SAND AND GRAVEL, TRACE SILT (Fine to coarse, well graded sand; fine subrounded gravel to 1/2"; less than 5% fines)	SW	Dry, no stains, no odors	0 PPM
			Broken Rock		Off White	S-3D (0.8-0.9') BROKEN ROCK	Broken Rock	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel		Tan/Brown	S-3E (0.9-1.5') SAND AND GRAVEL, TRACE SILT (Similar to S-3C)	SW	Dry, no stains, no odors	0 PPM
6		1340 S-3	Silty sand w/gravel		Dk Gray	S-3F (1.5-1.8') SILTY SAND, SOME GRAVEL (Fine sand; fine subrounded gravel to 1/2")	SM	Dry, no stains, no odors	0 PPM
7		03SB0150610		Denser	Dk Gray	S-4A (0-1.1') SILTY SAND, SOME GRAVEL (Similar to S-3F)	SM	Dry, no stains, no odors	0 PPM
8	4' / 4'		Broken Rock	Loose	White	S-4B (1.1-2') BROKEN ROCK/COBBLE	Broken Rock	Dry, no stains, no odors	0 PPM
			Silty sand w/gravel	Denser	Dk Gray	S-4C (2-2.5') SILTY SAND (Similar to S-4A)	SM	Dry, no stains, no odors	0 PPM
9			Well graded sand w/gravel	Loose	Tan/Brown	S-4D (2.5-3.1') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1 1/4"; <5% fines)	SW/GW	Dry, no stains, no odors	0 PPM
			Broken Rock		Gray	S-4E (3.1-3.3') BROKEN ROCK CHIPS	Broken Rock	Dry, no stains, no odors	0 PPM
10		1345 S-4	Well graded sand w/gravel	Loose	Tan/Brown	S-4F (3.3-4') SAND AND GRAVEL, TRACE SILT (Similar to S-4D)	SW/GW	Dry, no stains, no odors	0 PPM
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 5.5 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB016

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194478.917

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348534.922

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
		03SS0160002 Lab QC #3	Poorly graded sand	Loose	Brown	S-1A (0-0.2) ROOT MAT/TOP SOIL, SAND, TRACE SILT (Mostly fine sand, trace medium sand; <5% fines silt; roots)	SP	Dry, no stains, no odors	0 PPM
1	2' / 2'		Poorly graded sand w/gravel	Loose	Light Brown	S-1B (0.2-1') SAND, SOME GRAVEL, TRACE SILT (Mostly fine sand, trace medium and coarse sand; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
				Loose	Gray/Brown	S-1C (1-1.9) SAND, SOME GRAVEL, TRACE SILT (Similar to S-1B except for grain size - mostly fine to medium sand, trace coarse sand; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
2		1140 S-1	Silty sand	Denser	Brown	S-1D (1.9-2') SILTY SAND (Silty fine sand with oxidized grains)	SM	Dry, no stains, no odors	0 PPM
		03SB0160204	Silty sand w/gravel	Denser	Brown	S-2A (0-0.4') SILTY SAND (Similar to S-1D with more gravel, fine subrounded gravel to 1/2")	SM	Dry, no stains, no odors	0 PPM
3	1.4' / 2'		Well graded sand w/gravel	Loose	Tan/Brown Red/Brown	S-2B (0.4-0.8') SAND AND GRAVEL Fine to coarse sand, well graded; fine gravel, subrounded to 1/2"; trace fines)	SW	Dry, no stains, no odors	0 PPM
4		FD03-101314 Dup#3 1145 S-2	Silty sand w/gravel	Denser	Red/Brown	S-2C (0.8-1.4') SILTY SAND (Similar to S-2A)	SM	Dry, no stains, no odors	0 PPM
		03SB0160406	Poorly graded sand w/gravel	Loose	Brown	S-3 (0-1.3') SAND AND GRAVEL, TRACE SILT	SP	Dry, no stains, no odors	0 PPM
5	1.3' / 2'					(Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")			
6		1150 S-3							
7		03SB0160610	Poorly graded sand	Loose	Brown	S-4A (0-1.2') SAND, LITTLE GRAVEL, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel 1/4 to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
	3.6 ' / 4'			Loose	Gray with Red/Brown	S-4B (1.2-1.55') SAND, TRACE GRAVEL (Fine sand with oxidized intervals)	SP	Dry, no stains, no odors	0 PPM
				Loose	Red/Brown	S-4C (1.55-1.75') SAND (Medium sand with trace fine and coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
8			Silty sand w/gravel	Denser	Dk Gray	S-4D (1.75-3.6') SILTY SAND, SOME GRAVEL (Mostly fine sand; 15% non-plastic fines; fine and coarse subrounded gravel 1/2 to 1 1/2"; oxidized spots; rock fragments to 1 1/2 ", angular)	SM	Dry, no stains, no odors Potential till-like material	0 PPM
9									
10		1155 S-4							

EOB @ 10 feet

End of Boring at 10 feet bgs; boring backfilled

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous soil sampling to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	Not Encountered
OTHER OBSERVATIONS::	PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 7.75 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB017

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194487.030

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348561.501

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
						In road; 1-1.5 inches of asphalt removed with dedicated bit prior to drilling			
0	2' / 2'	03SS0170002	Poorly graded sand	Loose	Tan	S-1A (0-0.2) SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors Roadbase material	0 PPM
1				Denser	Gray/Brown	S-1B (0.2-0.9') SAND, SOME GRAVEL, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
2		1400 S-1		Loose	Gray	S-1C (0.9-1.2') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
				Denser	Gray/Brown	S-1D (1.2-2') SAND, SOME GRAVEL, TRACE SILT (Similar to S-1B)	SP	Dry, no stains, no odors	0 PPM
		03SB0170204			Dk Brown	S-2A (0-0.5') SAND, TRACE SILT (Fine sand, poorly graded; <5% fines)	SP	Dry, no stains, no odors	0 PPM
3	1.9' / 2'			Denser	Light Brown	S-2B (0.5-1') SAND, TRACE SILT (Similar to S-2A except color)	SP	Dry, no stains, no odors	0 PPM
4		1405 S-2		Loose	Tan/Brown	S-2C (1-1.9') SAND, TRACE GRAVEL (Mostly fine sand, trace medium sand, poorly graded; 1 piece of fine subrounded gravel to 1/4")	SP	Dry, no stains, no odors	0 PPM
		03SB0170406			Brown	S-3A (0-0.5') SAND (Mostly fine sand, trace medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
	1.8' / 2'				Red/Brown	S-3B (0.5-0.7') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
5					Dk Brown	S-3C (0.7 -1') SAND, TRACE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
6		1410 S-3	Well graded sand w/gravel		Tan/Brown	S-3D (1-1.8') SAND AND GRAVEL (Fine to coarse well graded sand; fine and coarse gravel, 1/4-1", subrounded; weathered, pulverized, and oxidized rock fragments)	SW	Dry, no stains, no odors	0 PPM
		03SB0170610	Poorly graded sand		Tan/Brown	S-4A (0-0.6') SAND (Mostly fine to medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
7	4 ' / 4'				Light Red/Brown	S-4B (0.6-0.9') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
8			Well graded sand w/gravel		Gray/Brown	S-4C (0.9-2.4') SAND AND GRAVEL, TRACE SILT (Fine to coarse well graded sand; fine and coarse gravel, 1/-1 1/2", subrounded)	SW/GW	Dry, no stains, no odors	0 PPM
9			Poorly graded sand		Orange/ Yellow	S-4D (2.4-3.4') SAND, LITTLE GRAVEL (Mostly medium to coarse sand with trace fine sand, poorly graded; little fine subrounded gravel 1/2 to 1 1/2")	SP	Dry, no stains, no odors	0 PPM
				Loose	Tan/Brown	S-4E (3.4-3.6) SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
10		1415 S-4	Silty sand w/gravel	Denser	Dk Gray	S-4F (3.6-4') SILTY SAND, SOME GRAVEL (Silty fine sand, fine subrounded gravel to 1/2" with oxidized spots)	SM	Dry, no stains, no odors	0 PPM

EOB @ 10 feet

End of Boring at 10 feet bgs; boring backfilled

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 9.6 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB017

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB018

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194449.747

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY:KJ

Easting 348388.313

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0180002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.4) TOP SOIL/ROOT MAT, SAND, TRACE SILT (Fine to med sand, trace coarse sand, poorly graded; <5% fines; tree roots)	SP	Dry, no stains, no odors	0 PPM
1				Denser	Brown	S-1B (0.4-1.1') SAND, TRACE SILT (Fine sand, poorly graded; <5% fines)	SP	Dry, no stains, no odors	0 PPM
				Loose	Tan/Brown	S-1C (1.1-1.7') SAND, TRACE GRAVEL (Fine sand, poorly graded; fine subrounded gravel to 1/4")	SP	Dry, no stains, no odors	0 PPM
2		1515 S-1		Denser	Brown	S-1D (1.7-2') SAND, LITTLE GRAVEL (Mostly fine to medium sand, trace coarse sand, poorly graded; fine and coarse subrounded gravel 1/4" to 1 1/2")	SP	Dry, no stains, no odors	0 PPM
	1.4' / 2'	03SB0180204		Denser	Brown	S-2A (0-0.2') SAND, LITTLE GRAVEL (Similar to S-1D)	SP	Dry, no stains, no odors	0 PPM
3			Well graded sand w/gravel	Loose	Gray/Brown	S-2B (0.2-1.4') SAND AND GRAVEL, TRACE SILT Fine to coarse sand, well graded; fine gravel, subrounded 1/4 to 1 1/4"; <5% fines	SW	Dry, no stains, no odors	0 PPM
4		1520 S-2							
	2' / 2'	03SB0180406	Well graded sand		Dk Brown	S-3A (0-0.2') SAND, TRACE SILT (Fine to coarse sand, well graded; <5% fines)	SW	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel		Gray/Brown	S-3B (0.2-0.4') SAND AND GRAVEL (Similar to S-2B)	SW	Dry, no stains, no odors	0 PPM
			Broken Rock		Off White	S-3C (0.4-0.8') BROKEN ROCK, PULVERIZED	Broken Rock	Dry, no stains, no odors	0 PPM
5			Well graded sand w/gravel	Loose	Orange/ Brown	S-3D (0.8-2') SAND AND GRAVEL Fine to coarse sand, well graded; fine and coarse gravel, 1/4" to 1", subrounded; rock fragments to 1 1/2")	SW	Dry, no stains, no odors	0 PPM
6		1525 S-3							
	4' / 4'	03SB0180610	Poorly graded sand	Denser	Gray/Brown	S-4A (0-0.8') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
7			Silty sand w/gravel	Denser	Dk Gray	S-4B (0.8-2.3') SILTY SAND, SOME GRAVEL (Silty (>15% fines)fine sand; fine subrounded gravel to 1/2" and coarse subrounded gravel to 1 1/4"; oxidized spots)	SM	Dry, no stains, no odors	0 PPM
8									
			Broken Rock	Loose	Orange	S-4C (2.3-2.5') BROKEN ROCK (Pulverized, weathered, oxidized)	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel		Gray/Brown	S-4D (2.5-3') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel to 1/2"; rock fragments to 1")	SW	Dry, no stains, no odors	0 PPM
9			Broken Rock		Gray	S-4E (3-3.3') BROKEN ROCK (Pulverized, weathered, not oxidized)	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Well graded sand w/gravel, broken rock	Loose	Gray/Brown	S-4F (3.3-4') SAND AND GRAVEL (Similar to S-4D with broken rock at bottom of liner)	SW	Dry, no stains, no odors	0 PPM
10		1530 S-4							

EOB @ 10 feet

End of Boring at 10 feet bgs; boring backfilled

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 6 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB018

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194467.859 Easting 348435.772

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB019

START DATE: 10/13/14

COMPLETION DATE: 10/13/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: J.Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0190002	Poorly graded sand	Loose	Light Gray/ Brown	S-1A (0-0.4) ROOT MAT, SAND, SOME GRAVEL (Mostly fine sand, trace medium sand, poorly graded; fine subrounded gravel to 1/2"; roots)	SP	Dry, no stains, no odors	0 PPM
1					Brown	S-1B (0.4-1') SAND, TRACE GRAVEL (Mostly fine sand, trace medium and coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
2		1535 S-1			Orange/ Brown	S-1C (1-2') SAND, TRACE GRAVEL (Similar to S-1B except color)	SP	Dry, no stains, no odors	0 PPM
3	1.4' / 2'	03SB0190204	Well graded sand w/gravel		Gray/Brown	S-2 (0-1.4') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4" to 1 1/2"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
4		1540 S-2							
5	2' / 2'	03SB0190406			Gray/Brown with Red	S-3A (0-0.9') SAND AND GRAVEL, TRACE SILT (Similar to S-2 w/oxidized intervals and spots (grains))	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand		Gray	S-3B (0.9-1.5') SAND (Mostly fine sand, trace medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
					Red/Brown	S-3C (1.5-1.6') SAND (Medium sand, trace fine and coarse sand, oxidized spots (grains))	SP	Dry, no stains, no odors	0 PPM
				Loose	Gray	S-3D (1.6-1.8') SAND (Similar to S-3B)	SP	Dry, no stains, no odors	0 PPM
6		1545 S-3	Silty sand	Denser	Dk Gray	S-3E (1.8-2') SILTY SAND, SOME GRAVEL (Silty (>15% fines)fine sand; fine subrounded gravel)	SM	Dry, no stains, no odors	0 PPM
7	3.8' / 4'	03SB0190610	Well graded sand w/gravel	Loose	Gray/Brown	S-4A (0-2.2') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4 to 2"; oxidized intervals and spots (grains))	SW	Dry, no stains, no odors	0 PPM
8			Broken Rock		Gray	S-4B (2.2-2.6') BROKEN, PULVERIZED ROCK	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Well graded sand w/ gravel	Loose	Gray/Brown	S-4C (2.6-3.8') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel, 1/4" to 1", subrounded; angular rock fragments, weathered, oxidized)	SW	Dry, no stains, no odors	0 PPM
9									
10		1550 S-4							
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 5.8 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB020

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194485.645

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348481.794

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
		03SS0200002	Poorly graded sand	Loose	Dk Brown to Brown	S-1A (0-0.6) ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL, TRACE SILT (Fine to medium sand, poorly graded; fine subrounded gravel to 1/4", <5% fines)	SP	Dry, no stains, no odors	0 PPM
1	2' / 2'				Red/Brown	S-1B (0.6-1.4') SAND, TRACE GRAVEL (Mostly fine sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
2		1620 S-1	Well graded sand w/gravel		Gray/Brown	S-1C (1.4-2') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel to 1/2"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
3	1.6' / 2'	03SB0200204			Gray/Brown	S-2 (0-1.6') SAND AND GRAVEL, TRACE SILT (Similar to S-1C)	SW	Dry, no stains, no odors	0 PPM
4		1625 S-2							
		03SB0200406	Poorly graded sand		Tan/Brown	S-3A (0-1.1') SAND (Fine sand, trace medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
5	2' / 2'			Loose	Red/Gray /Brown	S-3B (1.1-1.6') SAND (Mostly medium sand with less fine and coarse sand, poorly graded; slightly oxidized grains)	SP	Dry, no stains, no odors	0 PPM
6		1630 S-3	Silty Sand w/gravel	Dense	Dk Gray	S-3C (1.6-2') SILTY SAND, SOME GRAVEL (Silty fine Sand w/>15% fines; fine subrounded gravel to 1/2")	SM	Dry, no stains, no odors	0 PPM
		03SB0200610			Dk Gray	S-4A (0-0.8') SILTY SAND, SOME GRAVEL (Similar to S-3C)	SM	Dry, no stains, no odors	0 PPM
7	3.7' / 4'								
8			Well graded sand w/silt and gravel	Dense	Dk Red/ Brown	S-4B (0.8-2') SAND, SOME GRAVEL, SOME SILT (Fine to coarse sand, well graded; >15% coarse subrounded gravel to 1" and coarse angular fragments to 1/1/2"; about 10% fines)	SW/SM	Dry, no stains, no odors	0 PPM
9			Well graded sand	Loose	Red/Brown	S-4C (2-3.7') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/2" to 1"; angular rock fragments to 1" (broken rock); oxidized grains)	SW	Dry, no stains, no odors	0 PPM
10		1635 S-4	EOB @ 10 ft			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 5.6 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB020

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194501.796 Easting 348528.760

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB021

START DATE: 10/13/14

COMPLETION DATE: 10/13/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET) 0	SAMP REC./ SAMP LENG. 0	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
1	2' / 2'	03SS0210002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.3) ROOT MAT/TOP SOIL, SAND (Fine to medium sand, poorly graded; roots)	SP	Dry, no stains, no odors	0 PPM
				Loose	Brown	S-1B (0.3-0.9') SAND, TRACE GRAVEL, TRACE SILT (Fine to medium sand mostly, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
2		1645 S-1		Loose	Tan/Gray/ Brown	S-1C (0.9-2') SAND (Mostly medium sand, little coarse and fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
3	1.4' / 2'	03SB0210204		Denser	Dk Brown	S-2 (0-1.4') SAND, TRACE SILT (Mostly fine sand; trace medium sand, poorly graded; <5% fines)	SP	Dry, no stains, no odors Can't roll soil out w/o breaking	0 PPM
4		1650 S-2							
5	2' / 2'	03SB0210406		Denser	Brown	S-3A (0-0.5') SAND, TRACE GRAVEL (Fine sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Dense	Gray/Brown	S-3B (0.5-1.2') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse gravel, 1/4" to 1"; black rock fragments)	SW	Dry, no stains, no odors	0 PPM
6		1655 S-3	Broken Rock	Loose	White	S-3C (1.2-1.5') PULVERIZED ROCK	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Well graded sand	Loose	Red/Brown	S-3D (1.5-1.8') SAND, LITTLE GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2", oxidized)	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Gray/Brown	S-3E (1.8-2') SAND (Mostly fine to medium sand, trace coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
7	3.9' / 4'	03SB0210610		Loose	Gray/Brown	S-4A (0-0.4') SAND (Similar to S-3E)	SP	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Loose	Red/Orange /Brown	S-4B (0.4-1.8') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4" to 1"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
8			Poorly graded sand	Loose	Orange/ Brown	S-4C (1.8-2.4') SAND (Mostly fine to medium sand, poorly graded; oxidized)	SP	Dry, no stains, no odors	0 PPM
9			Silty Sand with gravel	Dense	Dk Gray	S-4D (2.4-3.9') SILTY SAND, SOME GRAVEL (Silty fine sand (>15% fines), fine subrounded gravel 1/2")	SM	Dry, no stains, no odors	0 PPM
10		1700 S-4	EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 8.4 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB022

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/13/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/13/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194504.056

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348509.194

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
						Asphalt surface, about 2" thick; removed w/a dedicated bit prior to further drilling/sampling			
0	2' / 2'	03SS0220002 DUP #4 FD04-101314	Well graded sand with gravel	Loose	Dk Brown	S-1A (0-0.8) SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel to 1"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
1				Loose	Tan/Brown Yellow	S-1B (0.8-1.3') SAND, LITTLE GRAVEL (F-C sand, well graded; fine subrounded gravel to 1/2", coarse subrounded gravel to 1")	SW	Dry, no stains, no odors	0 PPM
2		1440 S-1	Poorly graded sand	Loose	Light Brown	S-1C (1.3-1.9') SAND, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; < 5% fines)	SP	Dry, no stains, no odors	0 PPM
				Denser	Brown	S-1D (1.9-2') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
3	1.2' / 2'	03SB0220204 Lab QC#4		Loose	Tan/Brown	S-2 (0-1.2') SAND (Mostly fine sand; trace medium and coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
4		1445 S-2							
	2' / 2'	03SB0220406		Loose	Tan/Brown	S-3A (0-0.5') SAND (Similar to S-2)	SP	Dry, no stains, no odors	0 PPM
5			Well graded sand with gravel	Loose	Gray/Brown	S-3B (0.5-1') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4" to 1 1/4"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Tan/Brown	S-3C (1-1.8') SAND (Mostly medium sand, trace fine and coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
6		1450 S-3		Loose	Orange/ Brown	S-3D (1.8-2') SAND AND GRAVEL, TRACE SILT (Similar to S-3B except for color and mostly fine subrounded gravel to 1/2")	SW	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel						
	3.8 ' / 4'	03SB0220610	Poorly graded sand	Loose	Dark Brown	S-4A (0-0.2') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Loose	Orange/ Brown	S-4B (0.2-0.6') SAND AND GRAVEL (F-C sand, well graded; fine and coarse subrounded gravel, 1/4" to 1 1/2"; rock fragments)	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Yellow/ Brown	S-4C (0.6-0.9') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
7			Silty sand with Gravel	Dense	Dk Gray	S-4D (0.9-2.1') SILTY SAND, SOME GRAVEL (Silty fine sand (> 15% fines); fine subrounded gravel to 1/2", coarse gravel to 1 1/4")	SM	Dry, no stains, no odors	0 PPM
8									
			Broken rock	Loose	White	S-4E (2.1-2.4') BROKEN ROCK	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Silty sand with Gravel	Loose	Gray/Brown	S-4F (2.4-2.7') SILTY SAND, LITTLE GRAVEL (Silty fine to coarse sand; >15% fines; fine subrounded gravel to 1/2"; rock fragments)	SM	Dry, no stains, no odors	0 PPM
			Broken rock	Loose	Off White	S-4G (2.7-3') BROKEN ROCK	BROKEN ROCK	Dry, no stains, no odors	0 PPM
9									
			Well graded sand with gravel	Loose	Orange/ Brown	S-4H (3-3.5') SAND AND GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/4")	SW	Dry, no stains, no odors	0 PPM
				Loose	Gray/Brown	S-4I (3.5-3.8) SAND AND GRAVEL, ROCK FRAGMENTS (Fine to coarse sand, well graded; fine and coarse subrounded gravel to 1/2"; 1" rock fragments)	SW	Dry, no stains, no odors	0 PPM
10		1455 S-4							
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous soil sampling to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	Not Encountered
OTHER OBSERVATIONS::	PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 6.9 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB022

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194499.867 Easting 348448.069

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB023

START DATE: 10/14/14

COMPLETION DATE: 10/14/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/C ONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	2' / 2'	03SS0230002 DUP #5 FD05-101414	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.25) 2" ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL, TRACE SILT (Fine to medium sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
				Loose	Dk Brown	S-1B (0.25-0.8') SAND, TRACE GRAVEL,TRACE SILT (Mostly fine sand, trace medium sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
2		0835 S-1	Well graded sand with gravel	Loose	Brown	S-1C (0.8-1.8') SAND, TRACE GRAVEL, TRACE SILT (Similar to S-1B except color and additional coarse gravel to 1 1/2")	SP	Dry, no stains, no odors	0 PPM
3	1.7' / 2'	03SB0230204 Lab QC#5	Poorly graded sand	Loose	Dk Brown	S-1D (1.8-2') SAND AND GRAVEL (F-C sand, well graded; fine and coarse subrounded gravel, 1/4" to 3/4")	SW	Dry, no stains, no odors	0 PPM
				Loose	Drk Brown	S-2A (0-0.4') SAND AND GRAVEL (Similar to S-1D)	SW	Dry, no stains, no odors	0 PPM
4		0840 S-2		Loose	Tan/Brown	S-2B (0.4-1.2') SAND, TRACE GRAVEL (Med. sand, trace f sand, poorly graded; fine subrounded gravel to 1/2", oxidized)	SP	Dry, no stains, no odors	0 PPM
5	1.9' / 2'	03SB0230406	Well graded sand with gravel	Loose	Tan	S-2C (1.2-1.7') SAND (Similar to S-2B except lighter color, not oxidized)	SP	Dry, no stains, no odors	0 PPM
				Loose	Brown/Gray	S-3A (0-0.4') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4" to 1 1/2"; rock fragments to 1"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Dense	Gray	S-3B (0.4-1') SAND (Fine sand, poorly graded, some oxidized intervals)	SP	Dry, no stains, no odors	0 PPM
6		0845 S-3		Loose	Red/Orange /Brown	S-3C (1-1.3') SAND (Fine sand, poorly graded, mostly oxidized)	SP	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Loose	Red/Orange /Brown	S-3D (1.3-1.5') SAND, SOME GRAVEL (F-C sand, well graded, little oxidation; fine subrounded gravel to 1/2")	SW	Dry, no stains, no odors	0 PPM
7	4 ' / 4'	03SB0230610	Silty sand w/gravel	Denser	Dk Gray	S-3E (1.5-1.9') SILTY SAND, SOME GRAVEL (Fine sand, trace medium sand, poorly graded; >15% fines; fine subrounded gravel to 1/2"; oxidized spots)	SM	Dry, no stains, no odors	0 PPM
				Denser	Dk Gray	S-4A (0-0.7') SILTY SAND, SOME GRAVEL (Similar to S-3E)	SM	Dry, no stains, no odors	0 PPM
8				Less Dense	Dk Gray	S-4B (0.7-2.3') SILTY SAND, SOME GRAVEL (Similar to S-4A with coarse subrounded gravel to 1 1/2"; rock fragments; less compact)	SM	Dry, no stains, no odors	0 PPM
9			Well graded sand with gravel	Loose	Red/Brown	S-4C (2.3-4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1"; rock fragments to 1")	SW/GW	Dry, no stains, no odors	0 PPM
10		0850 S-4	EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 5.5 ft bgs.

Tetra Tech, Inc.

BORING #: SB023

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB024

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194513.906

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348416.756

TRANSCRIBED BY: J. Connet, PS, CFS, K.

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0240002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.3) 2" ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines; roots)	SP	Dry, no stains, no odors	0 PPM
				Denser	Brown	S-1B (0.3-0.9') SAND, TRACE GRAVEL, TRACE SILT (Fine sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
1				Denser	Orange/ Brown	S-1C (0.9-2') SAND,TRACE GRAVEL, TRACE SILT (Fine sand, trace medium to coarse sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors Color change	0 PPM
2		0910 S-1							
	1.8' / 2'	03SB0240204	Well graded sand with gravel	Loose	Gray/ Dk Brown	S-2A (0-1') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4" to 1 1/2"; rock fragments to 1")	SW/GW	Dry, no stains, no odors	0 PPM
3			Broken rock	Loose	Off White	S-2B (1-1.2') BROKEN ROCK	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Loose	Gray/Dk Brown	S-2C (1.2-1.5') SAND AND GRAVEL (Similar to S-2A)	SW/GW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Tan	S-2D (1.5-1.8') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
4		0915 S-2							
	2' / 2'	03SB0240406	Well graded sand with gravel	Loose	Gray/Brown	S-3A (0-0.4') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine subrounded gravel to 1/2"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Orange/ Brown	S-3B (0.4-0.7') SAND (Mostly medium sand, trace fine and coarse sand, poorly graded, oxidized)	SP	Dry, no stains, no odors	0 PPM
5			Silty Sand w/gravel	Dense	Dk Gray	S-3C (0.7-2') SILTY SAND, SOME GRAVEL (Silty fine sand, trace medium sand, poorly graded; fine subrounded gravel to 1/2", oxidized spots)	SM	Dry, no stains, no odors	0 PPM
6		0920 S-3							
	1.2 ' / 2.5'	03SB0240610		Dense	Dk Gray	S-4A (0-0.3') SILTY SAND, TRACE GRAVEL (Silty fine sand, trace medium sand, poorly graded; >15% fines; fine subrounded gravel to 1/2"; rock fragments)	SM	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Loose	Gray/Brown/ Orange/	S-4B (0.3-1') SAND AND GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2")	SW	Dry, no stains, no odors	0 PPM
7									
			Silty Sand w/gravel	Dense	Dk Brown/ Gray	S-4C (1-1.2') SILTY SAND, SOME GRAVEL (Similar to S-3C)	SM	Dry, no stains, no odors Poor Recovery	0 PPM
8									
8.5		0925 S-4							

EOB @ 8.5 feet

End of Boring at 8.5 feet bgs (REFUSAL); boring backfilled

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 4.7 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB024

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB025

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194533.363

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348462.024

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0250002	Poorly graded sand	Loose	Gray/Brown	S-1A (0-0.4) 2" ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL (Mostly fine sand, trace med. & coarse sand, poorly graded; fine subrounded gravel to 1/2"; roots)	SP	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Loose	Light Brown	S-1B (0.4-0.8') SAND, SOME GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2")	SW	Dry, no stains, no odors	0 PPM
1			Poorly graded sand	Denser	Brown	S-1C (0.8-2') SAND, LITTLE GRAVEL (Mostly fine sand, trace medium and coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
2		0940 S-1							
	1.4' / 2'	03SB0250204		Denser	Brown	S-2A (0-0.8') SAND, LITTLE GRAVEL (Similar to S-1C))	SP	Dry, no stains, no odors	0 PPM
3			Well graded sand with gravel	Loose	Orange/ Brown	S-2B (0.8-1.4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2")	SW	Dry, no stains, no odors	0 PPM
4		0945 S-2							
	2' / 2'	03SB0250406		Loose	Gray/Brown	S-3A (0-0.9') SAND AND GRAVEL,TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1 1/4"; rock fragments to 1")	SW	Dry, no stains, no odors	0 PPM
5									
			Silty sand w/gravel	Dense	Dark Gray	S-3B (0.9-2') SILTY SAND, FEW GRAVEL (Silty fine sand, trace medium sand, poorly graded; >15% fines; fine subrounded gravel to 1/2", oxidized spots)	SM	Dry, no stains, no odors	0 PPM
6		0950 S-3							
	3.8' / 4'	03SB0250610	Well graded sand with gravel	Loose	Brown	S-4A (0-0.6') SAND AND GRAVEL (F-C sand, well graded; fine and coarse subrounded gravel 1/4 to 1"; rock fragments)	SW	Dry, no stains, no odors	0 PPM
7			Poorly graded sand	Loose	Tan/Brown	S-4B (0.6-0.9') SAND, LITTLE GRAVEL (Mostly fine sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
			Broken rock	Loose	Gray/ White	S-4C (0.9-1.55') Broken rock chips	BROKEN ROCK	Dry, no stains, no odors	0 PPM
8			Silty sand w/gravel	Dense	Dark Gray	S-4D (1.55-3.2') SILTY SAND, FEW GRAVEL (Similar to S-3B)	SM	Dry, no stains, no odors	0 PPM
9									
			Well graded sand with gravel	Loose	Orange/ Brown	S-4E (3.2-3.8') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1"; oxidized rock fragments to 1")	SW	Dry, no stains, no odors	0 PPM
10		0955 S-4							

EOB @ 10 feet

End of Boring at 10 feet bgs; boring backfilled

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 7.5 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB025

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB026

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194557.056

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348510.143

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0260002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.4) 2" ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL, TRACE SILT (Mostly fine sand, trace med-coarse sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
				Denser	Brown	S-1B (0.4-0.8') SAND, FEW GRAVEL, TRACE SILT (Mostly fine sand, trace med-coarse sand; poorly graded; fine subrounded gravel to 1/2", c subrounded gravel to 1", rock fragments to 1"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
1				Denser	Brown	S-1C (0.8-1.2') SAND, LITTLE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; rock fragments)	SP	Dry, no stains, no odors	0 PPM
			Well graded sand with gravel	Loose	Gray/Brown Orange	S-1D (1.2-2') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1", oxidized)	SW	Dry, no stains, no odors	0 PPM
2		1005 S-1							
3	1.1' / 2'	03SB0260204	Silty sand	Dense	Dk Gray/ Brown	S-2A (0-0.7') SILTY SAND, LITTLE GRAVEL (Silty fine sand, trace medium sand, poorly graded; >15% non-plastic fines; fine subrounded gravel to 1/2", oxidized spots)	SM	Dry, no stains, no odors	0 PPM
			Poorly graded sand w/silt	Dense	Brown	S-2B (0.7-1.1') SAND, LITTLE SILT (Mostly fine sand, poorly graded; about 10% non-plastic fines)	SP/SM	Dry, no stains, no odors	0 PPM
4		1010 S-2							
	1.8' / 2'	03SB0260406	Well graded sand w/gravel	Loose	Gray/Brown	S-3A (0-0.4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/2 to 1")	SW/GW	Dry, no stains, no odors	0 PPM
5				Loose	Gray/Orange /Brown	S-3B (0.4-1.8') SAND AND GRAVEL (Similar to S-3A except color, more oxidized)	SW/GW	Dry, no stains, no odors	0 PPM
6		1015 S-3							
	2.5' / 4'	03SB0260610	Well graded sand	Loose	Gray/Brown	S-4A (0-0.2') SAND AND GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2")	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Loose	Tan/Gray Red/Orange	S-4B (0.2-0.7') SAND (Fine sand, poorly graded with increasing oxidation at 0.55 to 0.7')	SP	Dry, no stains, no odors	0 PPM
7			Silty sand	Dense	Dk Gray	S-4C (0.7-2.5') SILTY SAND, LITTLE GRAVEL (Silty fine sand mostly, trace med sand, poorly graded; >15% non-plastic fines; fine subrounded gravel to 1/2"; rock fragments to 1/2")	SM	Dry, no stains, no odors	0 PPM
8									
9									
10		1020 S-4							
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 6.7 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB027

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194566.283

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348476.088

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
		03SS0270002 Lab QC #6	Well graded sand	Loose	Dk Brown	S-1A (0-0.5) ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine subrounded gravel to 1/2"; <5% fines; roots)	SW	Dry, no stains, no odors	0 PPM
1	2' / 2'		Poorly graded sand	Denser	Brown	S-1B (0.5-2') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand mostly, trace coarse sand, poorly graded; fine and coarse subrounded gravel 1/4 to 1"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
2		1055 S-1							
		03SB0270204	Broken rock	Loose	Dk Gray	S-2A (0-0.15') BROKEN, PULVERIZED ROCK	BROKEN ROCK	Dry, no stains, no odors	0 PPM
	1.3' / 2'	FD06-101414 DUP#6	Well graded sand with gravel	Loose	Brown	S-2B (0.15-1') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4-2"; <5% fines)	SW/GW	Dry, no stains, no odors Poor recovery	0 PPM
3									
			Poorly graded sand	Denser		S-2C (1-1.3') SAND, LITTLE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
4		1100 S-2							
		03SB0270406				S-3 (0-1') SAND, LITTLE GRAVEL, TRACE SILT (Fine to med sand, poorly graded; fine and coarse subrounded gravel 1/4 to 1"; <5% fines)	SP	Dry, no stains, no odors Poor Recovery	0 PPM
5	1' / 2'								
6		1105 S-3							
		03SB0270610	Poorly graded sand w/gravel	Denser	Brown	S-4 (0-2.2') SAND, SOME GRAVEL (Similar to S-3 except more fine and coarse subrounded gravel 1/2 to 1 1/2")	SP	Dry, no stains, no odors Poor Recovery	0 PPM
7	2.2' / 4 '								
8									
9									
10		1110 S-4							
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 3 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB028

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194573.603

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348443.147

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0280002	Well graded sand	Loose	Dk Brown	S-1A (0-0.4") TOP SOIL/ROOT MAT, SAND, TRACE GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine subrounded gravel to 1/2"; <5% fines; roots)	SW	Dry, no stains, no odors	0 PPM
1			Poorly graded sand	Loose	Lighter Brown	S-1B (0.4-1.2') SAND, LITTLE GRAVEL, TRACE SILT (Mostly fine sand, trace medium and coarse sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Dk Gray	S-1C (1.2-1.4') ROCK FRAGMENT, PULVERIZED	BROKEN ROCK	Dry, no stains, no odors	0 PPM
2		1030 S-1	Poorly graded sand	Denser	Brown	S-1D (1.4-2') SAND, TRACE GRAVEL, TRACE SILT (Fine sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
	1.8' / 2'	03SB0280204	Well graded sand with gravel	Loose	Gray/Brown	S-2 (0-1.8') SAND AND GRAVEL (Fine to coarse sand, well graded; mostly fine subrounded gravel to 1/2", trace coarse gravel to 1"; rock fragments to 1")	SW/GW	Dry, no stains, no odors Color change to gray at end with coarse gravel to 1"	0 PPM
3									
4		1035 S-2			Gray				
		03SB0280406			Red/Brown	S-3A (0-0.4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1/2"; very oxidized)	SW/GW	Dry, no stains, no odors	0 PPM
	2' / 2'			Loose	Gray/Brown	S-3B (0.4-0.9') SAND AND GRAVEL (Similar to S-3A, except not oxidized, no coarse gravel)	SW/GW	Dry, no stains, no odors	0 PPM
5									
			Silty sand	Dense	Dk Gray	S-3C (0.9-2') SILTY SAND, LITTLE GRAVEL (Silty fine sand; >15% non-plastic fines; fine subrounded gravel to 1/2", trace coarse subrounded gravel to 1"; rock fragments; oxidized spots)	SM	Dry, no stains, no odors	0 PPM
6		1040 S-3							
	4' / 4'	03SB0280610	Well graded sand with gravel	Loose	Gray/Brown	S-4A (0-0.6') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/2 to 1"; rock fragment)	SW/GW	Dry, no stains, no odors	0 PPM
7			Silty sand	Dense	Dk Brown/ Gray	S-4B (0.6-2.6') SILTY SAND, LITTLE GRAVEL (Silty fine sand, trace medium sand; >15% non-plastic fines; fine subrounded gravel to 1/2", coarse subrounded gravel to 1")	SM	Dry, no stains, no odors	0 PPM
8									
			Broken Rock	Loose	White	S-4C (2.6-2.8') BROKEN ROCK, PULVERIZED	BROKEN ROCK	Dry, no stains, no odors	0 PPM
9			Well graded sand with silt and gravel	Loose	Gray/Brown	S-4D (2.8-4') SAND AND GRAVEL, LITTLE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1 1/4"; 10% fines; rock fragments to 1")	SW/SM	Dry, no stains, no odors	0 PPM
10		1045 S-4							
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 4.9 ft bgs.

Tetra Tech, Inc.

BORING NO.: SB028

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB029

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194595.264

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348489.771

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
1	1.3' / 2'	03SS0290002	Well graded sand w/gravel	Loose	Gray/Brown	S-1 (0-1.3) SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine subrounded gravel to 1/2", trace coarse subrounded gravel to 1"; <5% fines; rock fragments to 1")	SW	Dry, no stains, no odors	0 PPM
2		1150 S-1							
	1.3' / 2'	03SB0290204		Loose	Light Gray/ Brown w/Red	S-2A (0-0.9') SAND AND GRAVEL, TRACE SILT (Similar to S-1 above except color and some oxidized parts)	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Denser	Dk Brown	S-2B (0.9-1') SAND (Fine sand, trace medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
3			Broken Rock	Loose	Gray	S-2C (1-1.2') BROKEN ROCK, PULVERIZED	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Denser	Dark Brown	S-2D (1.2-1.3') SAND (Similar to S-2B)	SP	Dry, no stains, no odors	0 PPM
4		1155 S-2							
		03SB0290406 Did not sample material from 6-7' in liner		Denser	Dk Brown	S-3A (0-0.6') SAND, TRACE SILT (Mostly fine sand, trace medium and coarse sand, poorly graded; <5% fines)	SP	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
	3' / 3'		Well graded sand w/ gravel	Loose	Gray/Brown	S-3B (0.6-1.1') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/2 to 1"; rock fragments to 1")	SW/GW	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
5			Poorly graded sand	Loose	Gray/Orange Yellow/Brown	S-3C (1.1-2.2') SAND (Mostly medium sand, trace fine and coarse sand, poorly graded; fine subrounded gravel 1/4 to 1/2"; oxidized; coarsening at the bottom)	SP	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
6a									
			Silty sand	Denser	Dk Gray	S-3D (2.2-3') SILTY SAND, TRACE GRAVEL Silty fine sand (>15 % fines); fine subrounded gravel to 1/2")	SM	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
7		1200 S-3							
6b		03SB0290610	Silty sand	Denser	Dk Gray	S-4A (0-2.6') SILTY SAND, TRACE GRAVEL (Similar to S-3D)	SM	Dry, no stains, no odors **6-10 ft interval from borehole adjacent to S-1 thru S-3**	0 PPM
	3' / 4'								
7									
8									
			Well graded sand w/gravel	Loose	Gray/Brown	S-4B (2.6-3') SAND AND GRAVEL (Fine to coarse sand; fine and coarse subrounded gravel 1/4 to 1")	SW	Dry, no stains, no odors **6-10 ft interval from borehole adjacent to S-1 thru S-3**	0 PPM
9									
10		1205 S-4							
			EOB @ 10 feet			End of Boring at 7 and 10 feet bgs; both borings backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 6.2 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB030

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194623.858 Easting 348424.795

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

TRANSCRIBED BY: J. Connet, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0300002	Poorly graded sand	Loose	Brown	S-1A (0-0.2') ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL (Fine to medium sand mostly, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; roots, leaves, grass)	SP	Dry, no stains, no odors	0 PPM
				Denser	Dk Brown	S-1B (0.2-1.3') SAND, LITTLE GRAVEL, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines; rock fragments)	SP	Dry, no stains, no odors	0 PPM
1									
			Well graded sand w/gravel	Loose	Light Brown	S-1C (1.3-1.7') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4 to 1")	SW	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Denser	Dk Brown	S-1D (1.7-2') SAND, LITTLE GRAVEL, TRACE SILT (Similar to S-1B)	SP	Dry, no stains, no odors	0 PPM
2		1220 S-1							
	1.5' / 2'	03SB0300204	Silty sand	Denser	Dk Brown	S-2A (0-1.3') SILTY SAND (Silty fine sand, >15% nn-plastic fines, trace medium and coarse sand, poorly graded; fine subrounded gravel to 1/2"; rock fragments; oxidized spots)	SM	Dry, no stains, no odors	0 PPM
3									
			Well graded sand w/gravel	Loose	Tan	S-2B (1.3-1.5') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/2 to 1")	SW	Dry, no stains, no odors	0 PPM
4		1225 S-2							
	2' / 2'	03SB0300406		Loose	Gray/Brown	S-3A (0-1.1') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel 1/4 to 1 1/4"; rock fragments to 1")	SW	Dry, no stains, no odors	0 PPM
5			Poorly graded sand	Denser	Tan/Brown	S-3B (1.1-1.4') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
			Silty sand		Dk Gray	S-3C (1.4-2') SILTY SAND (Silty fine sand,>15% non-plastic fines, poorly graded; fine subrounded gravel to 1/2", oxidized spots)	SM	Dry, no stains, no odors	0 PPM
6		1230 S-3							
	3.2' / 4'	03SB0300610		Denser	Dk Gray	S-4A (0-0.5') SILTY SAND (Similar to S-3C)	SM	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Gray/White	S-4B (0.5-0.8') BROKEN ROCK, PULVERIZED	Broken Rock	Dry, no stains, no odors	0 PPM
7			Well graded sand w/gravel		Gray/Brown	S-4C (0.8-2.2') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded and weathered gravel 1/4 to 1 1/2", <5% fines)	SW	Dry, no stains, no odors	0 PPM
8									
			Well graded gravel w/sand		Gray	S-4D (2.2-2.7') SANDY GRAVEL (Fine and coarse subrounded gravel 1/2 to 1"; fine to coarse sand, well graded; rock fragments to 1")	GW	Dry, no stains, no odors More gravel than sand	0 PPM
9			Poorly graded sand	Loose	Tan/Brown	S-4E (2.7-3.2') SAND, TRACE GRAVEL (Mostly medium sand, trace fine and coarse sand, poorly graded; fine	SP	Dry, no stains, no odors	0 PPM
10		1235 S-4							

EOB @ 10 feet

End of Boring at 10 feet bgs; boring backfilled

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 5.4 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194643.634 Easting 348471.105

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB031

START DATE: 10/14/14

COMPLETION DATE: 10/14/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: J. Connet, PS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2' / 2'	03SS0310002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.2') ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL (Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; roots)	SP	Dry, no stains, no odors	0 PPM
				Denser	Dk Brown	S-1B (0.2-0.8') SAND, TRACE GRAVEL, TRACE SILT (Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; < 5% fines)	SP	Dry, no stains, no odors	0 PPM
1			Well graded sand	Loose	Gray/Brown	S-1C (0.8-2') SAND, LITTLE GRAVEL, TRACE SILT (Mostly fine to coarse sand, well graded; fine subrounded gravel to 1/2", trace coarse subrounded gravel to 1"; < 5% fines)	SW	Dry, no stains, no odors	0 PPM
2		1255 S-1							
	1.6' / 2'	03SB0310204	Poorly graded sand	Denser	Dk Brown	S-2A (0-0.3') SAND, TRACE SILT (Fine sand, trace medium and coarse sand, poorly graded; < 5% fines)	SP	Dry, no stains, no odors	0 PPM
3			Well graded sand	Denser	Dk Brown	S-2B (0.3-0.9') SAND, TRACE GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine subrounded gravel to 1/4"; <5% fines)	SW	Dry, no stains, no odors	0 PPM
4		1300 S-2	Poorly graded sand	Loose	Light Brown	S-2C (0.9-1.6') SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
	1.7' / 2'	03SB0310406		Loose	Gray/Brown	S-3A (0-1') SAND, TRACE GRAVEL (Mostly medium and coarse uniform sand, trace fine sand, poorly graded;fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
5			Broken Rock	Loose	White	S-3B (1-1.35') BROKEN/PULVERIZED ROCK/COBBLE	Broken Rock	Dry, no stains, no odors	0 PPM
6		1305 S-3	Silty sand	Denser	Dk Brown	S-3C (1.35-1.7') SILTY SAND, TRACE GRAVEL (Silty fine sand w/>15% non-plastic fines; fine subrounded gravel to 1/2")	SM	Dry, no stains, no odors	0 PPM
	4' / 4'	03SB0310610		Very Dense	Dk Gray	S-4 (0-4') SILTY SAND, TRACE TO LITTLE GRAVEL (Mostly silty fine sand w/>15% non-plastic fines; fine subrounded gravel 1/4 to 1/2"; oxidized spots; threads of coarse sand are oxidized w/i the silty fine sand)	SM	Dry, no stains, no odors	0 PPM
7									
8									
9									
10		1310 S-4	EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 5.3 ft bgs.

Tetra Tech, Inc.

BORING #: SB031

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB032

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194667.082 — REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348452.823

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
		03SS0320002 Lab QC #7	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.2) ROOT MAT/LEAF LITTER, SAND, LITTLE GRAVEL, TRACE SILT (Fine to medium sand, trace coarsesand, poorly graded; fine subrounded gravel to 1/2"; <5% fines; leaf litter and grass)	SP	Dry, no stains, no odors	0 PPM
1	2' / 2'			Denser	Dk Brown	S-1B (0.2-1.3') SAND, TRACE GRAVEL (Mostly fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
				Dense	Dk Gray	S-1C (1.3-1.5') SAND (Mostly fine to medium sand, trace coarse sand, poorly graded; no gravel, different color from above)	SP	Dry, no stains, no odors	0 PPM
2		1405 S-1		Dense	Light Brown	S-1D (1.5-2') SAND (Mostly fine sand, trace medium sand, trace coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
		03SB0320204 FD07-101414 (DUP7)		Dense	Light Brown	S-2A (0-0.4') SAND (Similar to S-1D)	SP	Dry, no stains, no odors	0 PPM
3	1.6' / 2'			Loose	Light Tan	S-2B (0.4-1.1') SAND (Fine sand; poorly graded)	SP	Dry, no stains, no odors	0 PPM
4		1410 S-2		Denser	Brown	S-2C (1.1-1.6') SAND (Fine to medium sand mostly, trace coarse sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
		03SB0320406	Silty sand with gravel	Dense	Dk Gray	S-3 (0-2') SILTY SAND, FEW GRAVEL (Silty fine sand, trace medium and coarse sand, poorly graded; >15% non-plastic fines; fine subrounded gravel to 1/2", oxidized spots and threads)	SM	Dry, no stains, no odors More gravel than typical in silty sand unit	0 PPM
5	2' / 2'								
6		1415 S-3							
		03SB0320610		Dense	Dk Gray	S-4A (0-1.5') SILTY SAND, SOME GRAVEL (Silty fine sand, trace medium and coarse sand, poorly graded; >15% non-plastic fines; fine subrounded gravel to 1/2"; rock fragments to 3/4")	SM	Dry, no stains, no odors Even more gravel than S-3	0 PPM
7									
	4' / 4'		Broken Rock	Loose	Off White	S-4B (1.5-1.6') BROKEN ROCK, PULVERIZED CHIPS	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Silty sand w/gravel	Dense	Dk Gray	S-4C (1.6-2.2') SILTY SAND, SOME GRAVEL (Similar to S-4A)	SM	Dry, no stains, no odors	0 PPM
8			Broken Rock	Loose	Gray	S-4D (2.2- 2.3') BROKEN ROCK (up to 1.5 inches)	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Sitly sand w/gravel	Dense	Dk Gray	S-4E (2.3-2.6') SILTY SAND, SOME GRAVEL (Similar to S-4A)	SM	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	Gray	S-4F (2.6-3') BROKEN ROCK, PULVERIZED CHIPS	BROKEN ROCK	Dry, no stains, no odors	0 PPM
9			Silty sand w/gravel	Dense	Dark Gray	S-4G (3-3.2') SILTY SAND, SOME GRAVEL (Similar to S-4A)	SM	Dry, no stains, no odors	0 PPM
			Broken Rock	Loose	White/Gray	S-4H (3.2-4') BROKEN ROCK (Angular chips, no soil)	BROKEN ROCK	Dry, no stains, no odors	0 PPM
10		1420 S-4							
			EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 4 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB033

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194675.917

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348487.344

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
						Asphalt surface, 1-1.5in thick; removed w/a dedicated bit prior to sampling			
0		03SS0330002	Well graded sand	Loose	Yellow/ Orange-Brown	S-1A (0-0.4) SAND, LITTLE GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel, 1/4 to 1/2")	SW	Dry, no stains, no odors No root mat	0 PPM
1	2' / 2'		Well graded sand with gravel	Loose	Gray/Brown	S-1B (0.4-1.7') SAND AND GRAVEL, TRACE SILT (Fine to coarse sand, well graded; mostly fine subrounded gravel to 1/2"; rock fragments; <5% fines)	SW	Dry, no stains, no odors	0 PPM
2		1330 S-1	Poorly graded sand	Denser	Dk Tan/ Brown	S-1C (1.7-2') SAND (Mostly fine sand, trace medium sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
3	1.3' / 2'	03SB0330204		Denser	Dk Tan/ Brown	S-2 (0-1.3') SAND (Similar to S-1C with a little coarse subrounded gravel to 1" at the end of the liner)	SP	Dry, no stains, no odors	0 PPM
4		1335 S-2							
5	2' / 2'	03SB0330406		Loose	Gray/Brown	S-3A (0-0.4') SAND, LITTLE GRAVEL, TRACE SILT (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/4 to 3/4"; <5% fines)	SP	Dry, no stains, no odors	0 PPM
				Loose	Dk Gray/ Brown	S-3B (0.4-1') SAND (Mostly medium sand, trace fine sand, poorly graded; high percentage of dark minerals)	SP	Dry, no stains, no odors	0 PPM
				Loose	Tan	S-3C (1-1.7') SAND (Mostly medium sand, trace fine sand, poorly graded; fewer dark minerals)	SP	Dry, no stains, no odors	0 PPM
				Denser	Tan	S-3D (1.7-1.8') SAND (Fine sand, poorly graded, denser than S-3C)	SP	Dry, no stains, no odors	0 PPM
6		1340 S-3		Loose	Tan	S-3E(1.8-2') SAND (Similar to S-3C but loose)	SP	Dry, no stains, no odors	0 PPM
7	3' / 3.5'	03SB0330610	Silty sand	Dense	Dk Gray	S-4A (0-2') SILTY SAND, LITTLE GRAVEL (Silty fine sand, trace medium sand, poorly graded; >15% non-plastic fines; fine subrounded gravel to 1/2"; oxidized spots)	SM	Dry, no stains, no odors	0 PPM
8			Broken rock	Loose	White	S-4B (2-2.2') BROKEN QUARTZ PEBBLE	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Silty sand with gravel	Dense	Dk Gray	S-4C (2.2-2.4') SILTY SAND, LITTLE GRAVEL (Similar to S-4A with broken weathered rock, yellow/tan)	SM	Dry, no stains, no odors	0 PPM
			Broken rock	Loose	Lt Gray	S-4D (2.4- 2.55') BROKEN ROCK,PULVERIZED CHIPS	BROKEN ROCK	Dry, no stains, no odors	0 PPM
			Silty sand with gravel	Dense	Dk Gray	S-4E (2.55-2.8') SILTY SAND, LITTLE GRAVEL (Similar to S-4A)	SM	Dry, no stains, no odors	0 PPM
9			Broken rock	Loose	Lt Gray	S-4F (2.8-3') BROKEN ROCK, PULVERIZED	BROKEN ROCK	Dry, no stains, no odors	0 PPM
9.5		1340 S-4							

EOB @9.5 feet

End of Boring at 9.5 feet bgs (REFUSAL); boring backfilled

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Biased sample location. Potential fill or re-worked material to about 6 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

PROJECT NO: 112G01813 CTO WE 01

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GPS COORDINATES: Northing 194670.703 Easting 348405.332

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

BORING NO.: 03SB034

START DATE: 10/14/14

COMPLETION DATE: 10/14/14

MON. WELL NO.: NA

CHECKED BY: KJ

TRANSCRIBED BY: JC, PS, CFS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0		03SS0340002	Poorly graded sand	Loose	Dk Brown	S-1A (0-0.5') ROOT MAT/TOP SOIL, SAND, TRACE GRAVEL (Fine sand mostly, trace medium sand, poorly graded; fine subrounded gravel to 1/2"; roots, twigs)	SP	Dry, no stains, no odors	0 PPM
1	2' / 2'			Loose	Gray/Brown	S-1B (0.5-1.2') SAND, LITTLE GRAVEL (Mostly fine sand, trace medium sand, poorly graded; coarse subrounded gravel to 1 1/2"; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
2		1450 S-1		Denser	Tan/Brown	S-1C (1.2-2') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
3	1.5' / 2'	03SB0340204		Denser	Tan/Brown	S-2 (0-1.5') SAND, TRACE GRAVEL Similar to S-1C except has 1 piece coarse subrounded gravel to 1 1/4")	SP	Dry, no stains, no odors	0 PPM
4		1455 S-2							
5	1.7' / 2'	03SB0340406	Well graded sand with gravel	Loose	Dk Brown	S-3A (0-0.2') SAND, TRACE GRAVEL (Mostly f sand, tr med sand, poorly graded; f subrounded gravel to 1/4")	SP	Dry, no stains, no odors	0 PPM
6		1500 S-3		Loose	Gray/Brown	S-3B (0.2-1.7') SAND AND GRAVEL (Fine to coarse well-graded sand; fine and coarse subrounded gravel 1/4 to 1 1/2"; angular rock fragments to 1")	SW	Dry, no stains, no odors	0 PPM
7	4' / 4'	03SB0340610		Loose	Gray/Brown	S-4A (0-1.3') SAND AND GRAVEL (Fine to coarse well-graded sand; fine and coarse subrounded gravel 1/4 to 1"; rock fragments, black and gray to 1"; similar to S-3B)	SW	Dry, no stains, no odors	0 PPM
8			Silty sand w/gravel	Dense	Dk Gray	S-4B (1.3-4') SILTY SAND, SOME GRAVEL (Silty fine sand, trace medium sand, poorly graded; >15% non-plastic fines; fine and coarse subrounded gravel 1/2 -1 1/4"; rock fragments; heavily oxidized sand grains @3-3.5' and weathered gravels)	SM	Dry, no stains, no odors	0 PPM
9									
10		1505 S-4	EOB @ 10 feet			End of Boring at 10 feet bgs; boring backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 7.3 ft bgs.

Tetra Tech, Inc.

BORING LOG FOR: CED Area, Fmr NCBC Davisville, N. Kingstown, RI

BORING NO.: 03SB035

PROJECT NO: 112G01813 CTO WE 01

START DATE: 10/14/14

LOGGED BY: K. Jalkut

COMPLETION DATE: 10/14/14

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GPS COORDINATES: Northing 194690.255

REF DATUM: NAD83 State Plane Rhode Island US Survey Feet

CHECKED BY: KJ

Easting 348452.825

TRANSCRIBED BY: JC, PS, KJ

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
						Asphalt surface, about 1-1.5 in thick; removed w/a dedicated bit prior to sampling			
0	2' / 2'	03SS0350002	Well graded sand w/gravel	Loose	Gray/Brown	S-1A (0-0.4') SAND AND GRAVEL (Fine to coarse sand, well graded; fine and coarse subrounded gravel, 1/2 to 1"; rock fragments)	SW	Dry, no stains, no odors	0 PPM
			Broken rock	Loose	Gray	S-1B (0.4-0.7') BROKEN ROCK (Pulverized chips)	Broken Rock	Dry, no stains, no odors	0 PPM
			Poorly graded sand	Denser	Brown	S-1C (0.7-0.9') SAND (Fine sand, poorly graded)	SP	Dry, no stains, no odors	0 PPM
1				Loose	Tan	S-1D (0.9-2') SAND (Fine sand, soft, poorly graded; similar to S-1C except for color and softness)	SP	Dry, no stains, no odors	0 PPM
2		1525 S-1							
	1.2' / 2'	03SB0350204			Tan	S-2A (0-0.5') SAND (Similar to S-1D)	SP	Dry, no stains, no odors	0 PPM
3					Gray/Brown	S-2B (0.5-1.2') SAND, TRACE GRAVEL (Fine to medium sand, trace coarse sand, poorly graded; fine subrounded gravel to 1/2")	SP	Dry, no stains, no odors	0 PPM
4		1530 S-2							
	2.4' / 2.4'	03SB0350406		Loose	Gray/Brown and Red	S-3A (0-0.5') SAND, TRACE GRAVEL (Mostly fine sand, trace medium sand, soft, poorly graded; fine subrounded gravel to 1/2 ")	SP	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
			Silty sand	Dense	Dk Gray	S-3B (0.5-1.6') SILTY SAND, LITTLE GRAVEL (Silty fine sand w/>15% non-plastic fines, fine subrounded gravel to 1/2"; oxidized spots and threads)	SM	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
5									
			Poorly graded sand	Loose	Gray	S-3C (1.6-1.8') SAND, TRACE GRAVEL (Fine sand, soft, poorly graded; fine subrounded gravel 1/4-1/2")	SP	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
6			Silty sand	Dense	Dk Gray	S-3D (1.8-2.4') SILTY SAND, LITTLE GRAVEL (Similar to S-3B)	SM	Dry, no stains, no odors **Driller overdrove liner**	0 PPM
6.4		Did not sample material from 6-6.4' in liner 1535 S-3							
6	2.6' / 4'	03SB0350610		Dense	Gray/Brown	S-4A (0-0.55') SILTY SAND, LITTLE GRAVEL (Similar to S-3D w/rock fragments)	SM	Dry, no stains, no odors **6-10 ft interval from borehole adjacent to S-1 thru S-3**	0 PPM
7			Broken Rock	Loose	Gray/ Off-white	S-4B (0.55-1.1') BROKEN ROCK (Pulverized)	Broken Rock	Dry, no stains, no odors Poor recovery	0 PPM
8			Silty sand	Dense	Gray/Brown	S-4C (1.1-2.1') SILTY SAND, LITTLE GRAVEL (Similar to S-4A)	SM	Dry, no stains, no odors	0 PPM
9			Well graded sand with gravel	Loose	Gray/Brown	S-4D (2.1-2.6') SAND, TRACE GRAVEL (Fine to coarse sand, well graded; fine subrounded gravel to 1/2")	SW	Dry, no stains, no odors	0 PPM
10		1540 S-4							
						End of Borings at 6.4 and 10 feet bgs; both borings backfilled			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous soil sampling to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS: Not Encountered

OTHER OBSERVATIONS:: PID reading over soil core. Grid sample location. Potential fill or re-worked material to about 4.5 ft bgs.

Tetra Tech, Inc.

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW01-10S-MWG-100214

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: N/A (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: 22.5 ft bgs Screen Int. 13-23 ft bgs
Sample Date & Time: 10 /02 /2014 1455 hours N/A (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) / Olfactory Evidence of Odor (Yes/No)

Weather: Cloudy, 60's

PID BZ= 0.1 /W= 0.1 /PW= 0.1 PPM. Field Instrument Group: B

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	Yes / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / No
~~TCL SVOCs, Pesticides/PCBs~~	~~≤6°C~~	~~3 x 1 liter glass~~	~~Yes~~ / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	Yes / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	Yes / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1 CPM	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1350	22.84										
1400	Start purge.										
1410	22.88	3	230		12.85	75	7.07	5.16	304.5	3.52	Clear/colorless
1415	22.89	3	200	1/2	12.73	76	6.13	4.80	318.1	1.73	"
1420	22.89	3	200		12.74	76	5.95	4.91	307.5	1.64	"
1425	22.89	3	200	1	12.77	76	5.95	4.98	300.0	1.63	"
1430	22.89	"	"		13.03	76	5.48	5.04	294.0	0.88	"
1435	"	"	"	2	12.88	76	5.60	5.06	291.2	0.85	"
1440	"	"	"		12.72	76	5.58	5.05	288.4	0.79	"
1445	"	"	"	3	12.71	76	5.59	5.06	289.9	0.62	"
1450	"	"	"		12.70	76	5.56	5.06	288.6	0.65	"
1455	Stabilization criteria fulfilled. Begin sampling										

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW01-12S-NWG-100214

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: 22 ft bgs Screen Int. 14-24 ft bgs
Sample Date & Time: 10 / 2 /2014 1521 hours NO (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Overcast Windy 57°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	Yes / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	Yes / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	Yes / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1420	19.25	—	—	—	—	—	—	—	—	—	Initial
1421	19.25		300		14.82	107	6.40	5.21	303.0	3.41	Clear
1426	19.25		300		14.75	107	6.44	4.55	340.0	2.58	
1431	19.25		300		14.79	107	6.34	5.06	314.2	2.50	
1441	19.25		300		14.56	106	6.22	5.50	283.0	2.35	
1451	19.25		300		14.53	105	6.16	5.54	279.0	1.97	
1456	19.25		300		14.56	105	6.17	5.81	242.0	1.50	
1501	19.25		300		14.57	105	6.16	5.82	220.0	1.08	
1506	19.25		300		14.58	105	6.10	5.85	215.8	0.87	
1511	19.25		300		14.56	105	6.13	5.87	210.3	0.25	
1516	19.25		300	5.0 gal	14.59	105	6.09	5.83	215.7	0.64	
				Well parameters		Stabilize					
				Sampling		Begins					

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC. New Replacement well

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW01-13sa-NWG-102714

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump)
(QED 1.75 inch or (Geotech Micro) or Peristaltic Pump

Depth Sampled: 21 ft bgs Screen Int. 13-23 ft bgs
Sample Date & Time: 10/27/2014 1456 hours NA (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Sunny 63° Light Winds

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1357	18.71	—	—	—	—	—	—	—	—	—	Initial
1401	18.75		110		14.47	153	7.15	6.15	157.3	4.28	Clean
1406	18.75		110		13.85	97	5.57	5.57	198.0	1.58	
1411	18.75		110		13.72	93	5.58	5.47	220.4	0.88	
1421	18.75		110		13.64	92	5.48	5.43	238.7	0.61	
1431	18.75		110		13.69	92	5.48	5.41	251.4	0.54	
1441	18.75		110		13.66	92	5.37	5.40	257.8	0.54	
1446	18.75		110		13.73	92	5.34	5.40	261.4	0.55	
1451	18.75		110	1.5 gal	13.66	92	5.33	5.40	264.6	0.54	
				Well parameters		Stabilize					
				Sampling		Begins					

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW01-14S-NWG-100914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: Lab QC (If applicable)

Purge/Sample Method: Low Stress (flow) method with Bladder Pump (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump

Depth Sampled: 24.5 ft bgs Screen Int. 15-25 ft bgs
Sample Date & Time: 10 / 9 /2014 1105 hours N/A (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Sunny 60's

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: B

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	6 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	6 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	6 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	6 x 1 liter glass	(Yes) / No
~~TCL SVOCs, Pesticides/PCBs~~	~~≤6°C~~	~~3 x 1 liter glass~~	Yes / (No)
Total Metals	≤6°C, HNO3	2 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	2 x 250 mL poly	(Yes) / No
3X volume for VOCs, TPH-GRO, TPH-DRO and Naphthalene			
2x volume for Total and dissolved Metals.			

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1 CPM	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C) 3%	S. Cond. 2 (µS/cm) 3%	DO (mg/L) 10%	pH (S.U.) +/- 0.1	ORP (mV) +/- 10mV	Turbidity (NTU) 10%	Comments
24.55 →	Initial water level										
0955	Begin purging, filling flowthrough cell, and measure water level										
1000	24.6	4	200		13.75	174	3.27	5.98	169.9	8.61	clear/colorless
1005	24.6	4	200		13.57	173	6.10	5.21	186.7	2.93	"
1010	24.6	4	200		13.55	172	4.84	4.95	195.1	1.91	"
1015	24.6	4	200		13.58	172	3.21	4.80	200.1	0.91	"
1020	"	"	"	1	13.59	171	2.02	4.72	208.9	0.88	"
1025	"	"	"		13.58	171	2.72	4.60	218.3	0.91	"
1030	"	"	"		13.58	171	2.31	4.58	224.5	1.08	"
1035	"	"	"	1 1/2	13.66	171	1.85	4.58	230.3	0.99	"
1040	"	"	"		13.67	171	1.83	4.52	234.5	0.60	"
1045	"	"	"	2	13.70	170	2.01	4.49	238.7	0.72	"
1050	"	"	"		13.68	170	1.76	4.51	248.4	0.61	"
1055	"	"	"		13.67	170	1.73	4.53	247.0	0.54	"
1100	"	"	"		13.67	170	1.79	4.50	249.0	0.48	"
1105	Water quality parameters meet stabilization criteria. End purge and begin sampling.										

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC. see second sheet

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW62-035-NNG-100314

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: None (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump ? 35' deep

Depth Sampled: _____ ft bgs Screen Int. 13-23 ft bgs
Sample Date & Time: 10 / 3 /2014 1050 hours no (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Overcast 52°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0909	26.95	—	—	—	—	—	—	—	—	—	Initial
0910	27.00				13.70	235	5.48	5.22	172.6	3.69	Clear
0915	27.00				13.61	236	6.82	5.08	195.4	2.72	
0920	27.00				13.57	238	8.14	5.06	210.7	1.54	
0930	27.00				13.51	247	7.94	5.44	134.4	2.00	
0940	27.00				13.50	253	8.14	5.52	98.5	2.34	
0945	27.00				13.47	258	7.49	5.70	66.8	2.20	
0950	27.00				13.47	264	8.01	5.86	38.7	2.09	
0955	27.00				13.45	268	8.07	6.05	5.2	1.00	
1000	27.00				13.45	269	8.02	6.21	-13.6	0.62	
1010	27.00				13.47	277	7.74	6.72	-47.2	1.00	
1020	27.00				13.48	283	7.46	6.34	-88.6	1.99	
1030	27.00				13.51	286	7.92	6.06	-46.2	1.50	
1035	27.00				13.50	288	7.88	6.10	-56.2	1.24	
1040	27.00				13.58	291	7.81	6.12	-51.7	1.02	
1045	27.00			8.5 gals	13.50	292	7.88	6.12	-55.6	0.92	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-039-NWG-111914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1 of 1
QC: Lab QC + FD25-111914 (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: ~29 ft bgs Screen Int. TBD ft bgs
Sample Date & Time: 11/19/2014 1250 hours 0000 (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Cold ~ 30°F

PID BZ= / W= / PW= PPM. Field Instrument Group: A

TD=33.44' bter

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	8 x 40 mL vials	Yes / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	8 x 40 mL vials	Yes / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	Yes / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	Yes / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	Yes / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1200	27.50	4 CPM									
1205	27.50		350		13.15	243	9.23	4.99	243.6	1.46	clear colorless
1210	27.50		200		12.38	249	8.48	4.98	260.2	0.67	" "
1215	27.50		200		12.41	250	8.61	4.97	263.8	6.79	" "
1220	27.50		220		12.60	255	8.55	4.97	265.4	0.81	" "
1225	27.50		220		12.92	258	8.56	4.98	271.4	0.76	" "
1230	27.50		220		12.98	259	8.54	4.99	275.0	0.50	" "
1235	27.50		220	~2.5	12.94	264	8.51	4.97	280.5	0.58	" "
1240	27.50		220		12.91	267	8.51	4.98	283.3	0.30	" "
1245	27.50		220		12.97	271	8.53	4.97	285.2	0.26	" "
				purge complete per work plan							

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-04SA-100614

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: _____ ft bgs Screen Int. _____ ft bgs
Sample Date & Time: 10 / 6 /2014 1303 hours NO (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: SUNNY 60° light winds

PID BZ= 0.0 / W= 0.0 / PW=0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1212	20.52	—	—	—	—	—	—	—	—	—	Initial
1213	20.72		300		14.94	83	7.03	6.14	196.0	31.1	Slightly cloudy
1218	20.70		300		15.02	81	6.13	5.51	242.1	26.1	↓
1223	20.60		300		15.17	81	6.04	5.49	250.3	15.0	↓
1233	20.60		300		15.15	80	5.89	5.42	272.0	8.51	Clean water
1243	20.60		240		15.13	80	5.91	5.38	268.2	4.61	↓
1248	20.60		240		15.17	79	5.94	5.43	265.9	2.16	
1253	20.60		240		15.17	79	5.94	5.42	266.9	1.92	
1258	20.60	↓	240	3.5 gals	15.17	79	5.95	5.41	265.6	1.76	↓
				Well parameters stabilize							
				Sampling Begins							

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-055-NWG-100214

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump

Depth Sampled: 24 ft bgs Screen Int. 16.5-26.5 ft bgs
Sample Date & Time: 10 / 02 /2014 1128 hours NO (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: showers 57°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0911	22.25	—	—	—	—	—	—	—	—	—	Initial
0913	22.42		300		13.97	108	6.71	3.98	344.6	12.9	slightly cloudy
0918	22.40		130		13.94	108	7.07	4.25	333.0	11.5	↓
0923	22.35		130		13.81	106	7.09	4.74	322.1	8.91	clear
0933	22.35		130		13.72	103	7.23	5.23	215.2	8.52	
0943	22.35		130		13.72	102	7.11	5.33	177.6	8.33	
0953	22.35		130		13.68	103	7.23	5.54	76.0	6.68	
1003	22.35		130		13.63	102	7.21	6.11	11.9	5.32	
1013	22.35		130		13.69	102	7.36	7.35	-12.4	5.15	
1023	22.35		130		13.66	103	7.18	7.43	-18.9	5.06	
1033	22.35		130		13.67	102	7.15	7.68	-23.1	2.28	
1043	22.35		130		13.64	102	7.12	7.36	-25.4	2.30	
1048	22.35		130		13.61	102	7.12	7.98	-30.0	2.40	
1053	22.35		130		13.61	102	7.14	7.86	-23.5	2.49	
1058	22.35		130		13.54	102	7.14	7.63	13.6	2.50	
1108	22.35	↓	130	↓	13.20	102	7.15	6.50	221.4	2.43	↓

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-056-NWG-100214

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: None (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1113	22.35	–	130		13.67	102	7.11	6.47	224.2	2.23	clear
1118	22.35		130		13.64	102	7.14	6.42	226.9	2.10	↓
1123	22.35		130	6.0 gal	13.63	102	7.12	6.40	230.0	2.07	↓
~~1128~~											
	←	—	—	Well parameters stabilize	—	—	—	—	—	→	
	←	—	—	Sampling Begins	—	—	—	—	—	→	

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-06sa-NWG-102914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: Mine (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump)
(QED 1.75 inch or (Geotech Micro)) or Peristaltic Pump

Depth Sampled: 23 ft bgs Screen Int. 16-26 ft bgs
Sample Date & Time: 10 /29 /2014 0948 hours NA (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Sunny 61° Light Winds

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0843	20.75	—	—	—	—	—	—	—	—	—	Initial
0848	20.75		120		16.32	132	4.45	5.95	121.7	28.0	Slightly
0853	20.75		120		16.55	130	7.55	5.47	166.2	70.3	
0858	20.75		120		16.60	129	7.49	5.43	189.3	36.4	
0903	20.75		120		16.65	128	7.44	5.39	220.9	12.0	
0918	20.75		120		16.76	129	7.27	5.34	235.6	6.86	clear water
0928	20.75		120		16.72	128	7.41	5.36	241.9	5.15	
0933	20.75		120		16.60	127	7.42	5.35	244.0	2.66	
0938	20.75		120		16.87	127	7.40	5.38	242.3	2.52	
0943	20.75		120	1.5 gallons	16.84	127	7.41	5.39	244.7	2.39	
				Well parameters Stabilized							
					Sampling Begins						

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-085-A-NWG-100114

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: None (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump) (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump

Depth Sampled: 24.8 ft bgs Screen Int. 11.8 - 26.8 ft bgs
Sample Date & Time: 10 / 1 /2014 1433 hours NA (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Rain 55°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1337	23.05	—	—	—	—	—	—	—	—	—	Initial
1338	23.10	—	220		13.33	205	7.54	5.18	315.9	45.2	Slighty
1343	23.10	—	220		13.26	209	7.48	5.12	322.7	18.4	
1348	23.10	—	220		13.23	217	7.56	5.35	315.3	10.0	Clear
1358	23.10	—	220		13.12	225	7.66	5.42	304.7	7.34	
1408	23.10	—	220		13.13	223	7.75	5.47	139.0	4.81	
1413	23.10	—	220		13.12	223	7.60	5.51	115.0	4.00	
1418	23.10	—	220		13.05	220	7.61	5.71	95.0	3.78	
1423	23.10	—	220		13.02	219	7.59	5.71	87.0	3.52	
1428	23.10	—	220	3.2 gals	13.02	222	7.62	5.80	87.2	3.56	
					Well parameters stabilize						
					Sampling Begins						

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-09s-100814

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump

Depth Sampled: 23 ft bgs Screen Int. 12-27 ft bgs
Sample Date & Time: 10 / 8 /2014 0957 hours NO (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes (No)) Olfactory Evidence of Odor (Yes (No))

Weather: Overcast 63°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0906	20.88	—	—	—	—	—	—	—	—	—	Initial
0907	20.88		300		15.87	60	6.73	5.64	203.1	9.60	Clear
0912	20.88		250		15.03	60	7.08	4.14	304.2	8.61	
0917	20.88		250		15.00	61	7.24	4.77	280.6	5.96	
0927	20.88		250		14.44	61	7.49	4.80	296.8	3.69	
0937	20.88		250		14.88	60	7.65	4.82	308.6	3.49	
0942	20.88		250		14.80	61	7.51	4.87	310.2	1.65	
0947	20.88		250		14.93	60	7.57	4.89	305.6	1.40	
0952	20.88		250	3.0 gals	14.92	61	7.56	4.91	310.5	1.32	
				Well parameters			Stabilize				
				Sampling			Begins				

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-103-NWG-100914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: FD02-100914, FD02-101014F (If applicable)

Purge/Sample Method: Low Stress (flow) method with ~~Rental Bladder Pump~~ (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: 25 (CFS) 24 ft bgs Screen Int. 13-28 ft bgs
Sample Date & Time: 10/10/2014 ~~0945~~ 0950 hours 0000 (Dup Time)
Sampler(s): KJ, (PS), WP, (CFS)
Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))
Weather: Sunny 60's
PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: B
* Distance from top of casing to top of pvc - 1.2 ft

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
~~TCL SVOCs, Pesticides/PCBs~~	~~≤6°C~~	~~3 x 1 liter glass~~	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (~~ft below MP~~) ft below casing *	Pump Dial 1 cpm	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
	20.46										
1400	Begin purging, filling flow through cell, and measuring drawdown.										
1410	20.5	4	200							87.4	Cloudy, brown
1415	Below pump	4	200							113	
1420	"	4	190							55.5	
1430	"	4	190	1 1/2	16.29	170	3.21	6.20	119.9	63.4	
1435	"	"	"		16.02	168	3.25	6.45	18.5		
1440	"	"	"	2	15.96	167	3.06	6.53	3.6	48.8	
1450	"	"	"	2 1/2	15.91	163	2.90	6.53	-1.8	41.4	"
1500	"	"	"		15.92	160	2.88	6.49	0.3		"
1505	"	"	"		15.91	158	2.83	6.43	7.5	34.6	
1515	"	"	"		15.94	154	2.73	6.35	14.1	27.2	clear - colorless
~~1520~~ 1520	"	"	"	~4.0	15.87	152	2.70	6.31	18.9	26.9	"
1525	"	"	"		15.86	151	2.71	6.25	23.4	22.5	"
1540		"	"		15.85	148	2.83	6.08	33.8	17.2	"
1555		"	"		15.88	142	2.72	6.01	39.8	12.1	"

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water
1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: _____.

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: _____ (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
11/9 1605	Below pump	4CPM	190		15.88	140	2.76	5.94	44.9	9.99	clear - colorless
1615	"	4CPM	190		15.82	139	2.76	5.89	48.5	10.01	" "
1625	"	4CPM	190	26.5	15.82	137	2.75	5.84	52.7	7.46	" "
1630	"	4CPM	190		15.79	136	2.73	5.81	55.5	7.64	" "
		completed ~~purging~~ development for the day - will resume purging tomorrow									
0859	Below pump 4cpm	—	—	—	—	—	—	—	—	—	
11/10 0900		170		15.72	125	4.29	6.95	3.4	34.5	Slightly Cloudy	
0905		170		15.09	121	3.68	6.63	2.0	12.1		
0910		170		15.09	124	3.46	6.60	0.5	4.98	Clear	
0920		170		15.07	128	3.19	6.50	5.3	3.03		
0930		170		15.16	130	3.01	6.41	10.3	1.99		
0935		170		15.23	130	2.97	6.37	13.3	1.80		
0940		170	4	15.24	130	2.96	6.34	15.1	1.89		
0945	↓	↓	170	2.0 gal	15.26	130	2.97	6.34	15.9	1.17	
					Well parameters stabilized						
					Sampling Begins						

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW02-11S-100814

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: None (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump

Depth Sampled: 24 ft bgs Screen Int. 13-28 ft bgs
Sample Date & Time: 10 / 8 /2014 1357 hours NO (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes (No) Olfactory Evidence of Odor (Yes (No)

Weather: Sunny 70° Windy

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1301	20.02	—	—	—	—	—	—	—	—	—	Initial
1302	20.05	↓	300	↓	15.94	71	5.65	5.31	268.6	9.25	Clear
1307	20.05		300		15.73	71	5.13	4.47	326.2	10.1	↓
1312	20.05		230		15.88	72	5.01	4.98	305.0	8.84	
1322	20.05		230		15.78	70	4.73	5.08	302.5	5.25	
1332	20.05		230		16.08	71	4.79	5.07	300.5	3.42	
1337	20.05		230		15.79	71	4.52	5.04	303.0	2.91	
1342	20.05		230		15.93	68	4.42	5.07	301.3	2.33	
1347	20.05		230	↓	15.97	68	4.39	5.08	298.0	2.23	
1352	20.05	↓	230	3.0 gal	15.95	68	4.43	5.08	297.4	2.23	↓
		—	—	—	Well	Parameter	Stabilized	—	—	—	
		—	—	—		Sampling	Begins	—	—	—	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-01Sa-NWG-102914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: ~~Matrix~~ Dup 04 (see below) (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump)
(QED 1.75 inch or (Geotech Micro)) or Peristaltic Pump

Depth Sampled: 22 ft bgs Screen Int. 14-24 ft bgs
Sample Date & Time: 10 / 29 /2014 1210 hours 0000 (Dup Time)

Sampler(s): KJ, PS, (WP), CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Sunny 70° Light Winds

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	4x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	4x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	4X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	4x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	2x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	2x 250 mL poly	(Yes) / No

FD04-102914, FD04-102914-F

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1115	20.40	—	—	—	—	—	—	—	—	—	Initial
1120	20.45		120		16.75	523	7.55	5.43	261.6	13.5	Slightly cloudy
1125	20.45		120		16.81	538	7.13	5.41	263.8	8.83	Clean water
1130	20.45		120		16.75	549	7.61	5.40	265.4	3.32	
1140	20.45		120		16.69	556	6.93	5.39	266.8	1.78	
1150	20.45		120		16.81	566	6.80	5.39	268.8	1.96	
1155	20.45		120		16.82	569	6.65	5.39	269.0	1.51	
1200	20.45		120		16.79	569	6.70	5.39	269.4	1.48	
1205	20.45		120	1.5 gal	16.84	570	6.69	5.39	269.4	1.43	
					Well parameters stabilize						
					Sampling Begins						

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-025-NW6-092914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: None (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: ~21.5 ft bgs Screen Int. 8.5-23.5 ft bgs
Sample Date & Time: 09/29/2014 1340 hours N/A (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Overcast, 70s then sun/clouds - 80s, humid

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: B

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	Yes / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	Yes / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	Yes / No

Clock Time 24hr	Water Depth (ft below MP) TOP PVC	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1045	19.14										
1150	19.14	CPM4 10 sec ON	120	Pump in; pump on; adjust flow rate; fill flow through cell							
1208	19.15		170		15.39	67	10.25	5.07	276.7	2.95	clear/colorless pw
1213	19.15		170		15.13	62	8.97	3.14	406.4	1.70	
1218	19.15		170		15.07	62	8.82	3.51	390.2	1.46	
1223	19.15		170		15.05	61	8.92	3.89	376.6	0.96	
1228	19.15		170		15.04	61	9.01	4.14	361.6	0.90	
1233	19.15		170		15.06	62	8.88	4.44	348.5	0.84	
1238	19.15		170	1.5 gals	15.03	61	8.94	4.62	340.3	0.76	
1243	19.15		170		15.03	61	8.86	4.77	333.8	0.48	
1248	19.15		180		15.07	61	8.87	4.95	326.2	0.35	
1253	19.15		180		14.99	61	8.88	5.00	324.9	0.36	
1258	19.15		180	2.5 gals	14.98	61	8.90	5.05	324.3	0.34	
1303	19.15		180		15.00	61	8.89	5.11	323.2	0.27	
1308	19.15		180		14.95	61	8.88	5.13	323.1	0.24	
1313	19.15	↓	180	3 gals	15.00	61	8.87	5.14	323.1	0.21	↓

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

**PURGE DATA SHEET –
"LOW STRESS" GROUNDWATER**

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-02S-NWG-092914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: None (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1318	19.15	OPM4 10sec 5sec	180	↓	14.98	61	8.87	5.18	320.9	0.16	clear/colorless pw
1323	19.15	↓	180	↓	14.99	61	8.88	5.20	320.6	0.19	↓
1328	19.15	↓	180	↓	15.00	61	8.84	5.22	320.4	0.18	↓
1333	19.15	↓	180	4 gals	14.99	61	8.85	5.23	320.4	0.15	↓
End purge - parameter readings meet stabilization criteria for sampling per SAP											

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-035a-NWG-102014

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: MS/MSD (Lab QC volume) (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump) (QED 1.75 inch or (Geotech Micro)) or Peristaltic Pump

Depth Sampled: 22.5 ft bgs Screen Int. 15-25 ft bgs
Sample Date & Time: 10/30/2014 1005 hours Nun (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Sunny 45° Light Winds

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	6 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	6 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	6 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	6 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes (No)
Total Metals	≤6°C, HNO3	2 x 250 mL poly	(Yes) No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	2 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0912	20.05	—	—	—	—	—	—	—	—	—	Init.
0915	20.07		120		14.07	171	10.84	6.16	128.9	8.13	Clear
0920	20.07		120		14.05	156	8.90	5.62	151.2	3.95	
0925	20.10		120		14.25	149	8.74	5.47	161.9	3.36	
0935	20.10		120		14.14	148	8.08	5.38	176.1	2.35	
0945	20.10		120		14.34	154	7.66	5.36	185.9	1.96	
0950	20.10		120		14.26	154	7.19	5.34	196.0	1.98	
0955	20.10		120	↓	14.25	161	6.96	5.35	201.4	2.08	
1000	20.10	↓	120	1.2 gal	14.27	162	6.93	5.33	204.3	2.09	↓
					Well parameters Stabilize						
					Sampling Begin						

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: ~~MW23-045-093014~~ MW03-045-NVG-093014

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump) (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump

Depth Sampled: 23.25 ft bgs Screen Int. 10-25 ft bgs
Sample Date & Time: 9 /30 /2014 1123 hours NO (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes (No) Olfactory Evidence of Odor (Yes (No)

Weather: Rain 65°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / (No)
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / (No)
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1010	20.25	—	—	—	—	—	—	—	—	—	Initial
1013	20.25		180		14.68	71	7.41	5.11	300.7	8.18	Clear
1018	20.25		180		14.40	66	7.17	4.81	326.9	4.27	
1023	20.25		180		14.35	65	7.08	4.87	342.7	4.00	
1033	20.25		180		14.25	66	7.07	4.86	348.6	3.83	
1043	20.25		180		14.24	65	6.99	4.89	346.9	3.80	
1048	20.25		180		14.21	65	7.01	4.91	347.2	3.33	
1053	20.25		180		14.28	65	6.90	4.94	344.8	3.20	
1058	20.25		180		15.24	66	6.22	5.15	326.5	3.12	
1103	20.25		180		15.15	66	7.35	5.19	307.9	2.50	
1108	20.25		180		14.57	65	6.81	5.07	332.9	2.00	
1113	20.25		180		14.43	65	6.82	5.06	335.4	1.95	
1118	20.25		180	2.0 gal	14.41	65	6.86	5.04	337.1	1.84	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW63-05S-NWG-100114

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: 23 ft bgs Screen Int. 11-26 ft bgs
Sample Date & Time: 10/1/2014 1056 hours NO (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Rain 70°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	(Yes) / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / (No)
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1005	21.45	—	—	—	—	—	—	—	—	—	Initial
1006	21.50		270		14.45	69	8.56	4.93	304.4	21.5	slighty
1011	21.50		270		14.41	76	8.31	4.74	326.4	9.69	Clear
1016	21.50		270		14.41	56	8.34	4.76	323.0	8.50	
1026	21.50		270		14.40	56	8.44	4.75	340.9	6.31	
1036	21.50		270		14.37	57	8.44	4.75	357.0	3.53	
1041	21.50		270		14.35	56	8.40	4.75	353.1	2.50	
1046	21.50		270		14.34	56	8.40	4.73	356.8	2.13	
1051	21.50		270	3.5 gal	14.35	56	8.39	4.76	358.0	2.05	
				Well parameters Stabilize							
				Sampling Begin							

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-15I-092914

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: Yes (Lab QC) (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump) (QED 1.75 inch or (Geotech Micro)) or Peristaltic Pump

Depth Sampled: 50 ft bgs Screen Int. 45-55 ft bgs
Sample Date & Time: 9/29/2014 1407 hours NO (Dup Time)

Sampler(s): KJ, PS, (WP), CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Overcast 61°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	6 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	6 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	6 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / (No)
TCL SVOCs, Pesticides/PCBs	≤6°C	9 x 1 liter glass	(Yes) / No
Total Metals	≤6°C, HNO3	2 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	2 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1057	24.05	—	120		17.47	246	4.51	6.04	103.9	316	Cloudy
1107	24.06		120		15.76	250	1.42	4.12	153.6	35.5	slightly
1117	24.06		120		15.41	247	1.24	4.75	123.6	40.4	
1127	24.06		120		15.42	242	1.22	5.30	108.0	40.3	
1137	24.06		120		15.62	238	1.15	5.57	104.6	37.2	
1147	24.06		120		15.64	233	1.07	5.63	109.4	25.7	
1157	24.06		120		15.60	232	0.98	5.61	115.3	24.9	
1207	24.10		120		15.43	230	0.95	5.61	118.5	22.3	
1217	24.10		120		15.16	229	0.77	5.57	123.0	17.8	
1227	24.10		120		15.09	230	0.73	5.57	122.8	13.6	
1237	24.10		120		15.19	230	0.68	5.57	121.8	11.9	
1247	24.10		120		15.34	230	0.62	5.58	120.7	12.0	
1257	24.10		120		15.13	228	0.53	5.60	120.9	12.3	
1302	24.10		120		15.52	228	0.49	5.59	120.8	12.0	
1307	24.10		120		15.75	229	0.50	5.56	122.0	11.9	
1312	24.10		120		15.98	228	0.51	5.55	126.9	11.9	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-15I-092914

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: Yes (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1317	24.10	—	120	—	15.87	228	0.46	5.54	133.2	17.0	Slightly
1322	24.10	—	120		16.11	229	0.47	5.17	135.9	9.99	Clean
1327	24.10	—	120		15.98	230	0.50	5.38	157.3	9.07	
1332	24.10	—	120		16.21	229	0.54	5.43	154.3	8.90	
1347	24.10	—	120		15.89	229	0.55	5.45	152.4	9.00	
1357	24.10	—	120		15.87	228	0.56	5.44	151.9	9.12	
1402	24.10	—	120	3½ gals	15.93	229	0.56	5.45	150.2	9.15	
					Well parameters stabilize →						
					Sampling Begins →						

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-15S-NWG:100114

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: None (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: ~21.5 ft bgs Screen Int. 13-23 ft bgs
Sample Date & Time: 10 / 1 /2014 1230 hours N/A (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Overcast, rain

PID BZ= 0.0 / W= / PW= 0.0 PPM. Field Instrument Group: B

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	Yes / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	Yes / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / No
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	Yes / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	Yes / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	Yes / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0908	23.88										
0940	23.94	CPM6 75sec 35sec	80		Pumpon; adjust flow rate; fill flow through cell						Light rain.
Phone calls - no readings											Purging ongoing
1010	23.94	CPM6 75sec 35sec	80		13.66	77	5.37	4.71	303.8	1.92	clear/colorless pw
1017	23.94		85		13.63	77	5.25	4.83	308.6	0.64	
1024 30	23.94		85	1 gal	13.67	77	5.16	4.86	310.0	1.04	
1037	23.94		85		13.66	77	5.08	4.90	312.2	0.49	
1044	23.94		85		13.72	77	5.05	4.93	314.2	0.45	Heavy rain
1055	23.94		85		13.66	77	5.06	4.94	315.2	0.41	
1102	23.94		85		13.69	77	4.98	4.95	316.0	1.36	bumped tubing
1109	23.94		85		13.77	77	5.09	4.97	314.9	0.83	
1116	23.94		85		13.81	77	5.08	4.98	313.4	1.06	Lighter rain
1123	23.94		85	2 1/4 gals	14.00	77	4.86	5.04	306.9	0.48	
1130	23.94		85		13.99	76	4.97	5.05	305.2	0.64	
1137	23.94		85		13.92	76	4.99	5.04	305.0	0.48	
1144	23.94		85		13.86	77	4.93	5.04	301.6	0.46	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-15S-MW-100114

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: None (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1151	23.94	SPM6 7355 3540	85	↓	13.84	77	4.87	5.05	291.4	0.30	clear/colorless pw
1158	23.94	↓	85	↓	13.90	77	4.89	5.07	285.4	0.22	↓
1205	23.94	↓	85	3 gals	13.89	77	4.91	5.07	282.6	0.25	↓
End purge - Just beyond 2 hrs purge limit - parameter readings stabilized for sampling per criteria in SAP											

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-16S-NWG-100614

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: None (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump (QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: ~20.5 ft bgs Screen Int. 11.5-21.5 ft bgs
Sample Date & Time: 10 / 6 /2014 1405 hours N/A (Dup Time)

Sampler(s): KJ, PS, WP, CFS

Visual Evidence of Sheen (Yes/No) Olfactory Evidence of Odor (Yes/No)

Weather: Sunny, windy

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: B

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / (No)
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	(Yes) / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
1100	22.30	Problem w/ controller - inspect				NO purging at this time					
1235	22.30	Replace batteries; fix loose wires, turn pump on; adjust flow rate; fill cell									
1240	22.30	6PM6 (6 sec/ 4 sec)	90		15.39	96	7.56	5.49	298.6	0.48	clear/colorless pw
1246	22.30		90		15.32	94	7.18	5.40	325.1	0.38	
1252	22.30		90		15.75	*0 ?	10.02	6.13	336.1	0.25	*No cond. reading on unit
1258	22.30		90		15.42	92	8.75	5.48	356.8	0.26	
1304	22.30		90		15.33	92	7.00	5.38	345.1	0.20	
1310	22.30		90		15.35	91	6.93	5.37	346.5	0.19	
1316	22.30		90		15.38	90	6.87	5.37	347.4	0.14	
1322	22.30		90		15.45	90	6.89	5.37	349.1	0.20	
1328	22.30		90		15.43	90	6.82	5.38	349.6	0.18	
1334	22.30		90		15.60	90	6.80	5.38	350.4	0.13	
1340	22.30		90		15.54	90	6.78	5.40	350.5	0.13	
1346	22.30		90	1 1/2 - 3/4 g	15.38	89	6.77	5.37	352.2	0.17	
End purge - parameter readings stable for sampling per criteria in SAP											

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

No sample collected - need more development today (10/7/14)

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-16I-100714

Tetra Tech Project No. 112G01813 Task 0000,2123 WE01 Page 1
QC: NONE (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump (QED 1.75 inch) or Geotech Micro) or Peristaltic Pump

Depth Sampled: 50 ft bgs Screen Int. 45-55 ft bgs
Sample Date & Time: ___/___/2014 _____hours NO (Dup Time)

Sampler(s): KJ, PS, (WP) CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Slightly Cloudy 62°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / (No)
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	(Yes) / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0844	22.25	—	—	—	—	—	—	—	—	—	Initial
0949	22.30	—	120		15.28	254	4.20	6.07	25.2	294	Cloudy
0854	22.30		120		14.72	255	2.30	6.05	20.9	136	
0859	22.30		120		14.64	254	1.48	5.95	26.3	92.4	
0909	22.30		120		14.57	242	1.13	5.95	31.6	284	
0919	22.30		120		14.55	234	0.90	5.93	36.6	333	
0929	22.30		120		14.54	232	0.84	5.94	37.9	330	
0939	22.30		120		14.62	230	0.74	5.93	40.0	277	
0949	22.30		120		14.68	247	0.88	5.91	45.7	72.4	
0959	22.30		120		14.85	230	0.81	5.90	45.7	172	
1009	22.30		120		14.93	228	0.73	5.91	44.7	179	
1019	22.30		120		15.05	227	0.73	5.88	44.3	215	
1029	22.30		120		15.17	239	0.89	5.84	64.6	53.9	
1039	22.30		120		15.43	228	0.61	5.91	45.9	120	
1049	22.30		120		15.16	226	0.59	5.92	44.4	106	
1059	22.30		120		15.51	225	0.59	5.90	44.3	106	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-16I-100714.

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: None (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1104	22.30	—	120		15.12	225	0.53	5.92	43.3	97.5	Slightly cloudy
1119	22.30		120		15.10	225	0.49	5.91	43.6	75.6	
1124	22.30		120		15.17	225	0.47	5.95	40.9	90.0	
1139	22.30		120		15.02	225	0.48	5.92	42.0	79.9	
1149	22.30		120		15.00	224	0.45	5.90	43.9	83.5	
1159	22.30		120		14.99	223	0.43	5.89	44.0	81.2	
1209	22.30		120	5 gals	14.97	222	0.41	5.88	44.3	80.0	

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-16I-NWG-102814

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: DUP03 FD03-102814* (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump (QED 1.75 inch or Geotech Micro)) or Peristaltic Pump

Depth Sampled: 50 ft bgs Screen Int. 45-55 ft bgs
Sample Date & Time: 10/28/2014 1317 hours 0000 (Dup Time)

Sampler(s): KJ, PS (WP) CFS

Visual Evidence of Sheen (Yes (No) Olfactory Evidence of Odor (Yes (No)

Weather: SUNNY 46°

PID BZ= 0.0 / W= 0.0 / PW=0.0 PPM. Field Instrument Group: A

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	2 x 1 liter glass	Yes / (No)
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	(Yes) / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

* No dissolved metals for field duplicate

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0916	22.70	—	—	—	—	—	—	—	—	—	Initial
0922	22.75				12.93	227	4.97	6.13	51.8	31.1	Slightly Cloudy
0927	22.75				13.02	225	1.60	6.00	19.7	50.2	
0932	22.75				13.14	225	0.81	5.97	17.3	63.0	
0942	22.75				13.13	227	0.53	5.97	17.9	72.6	
0952	22.75				13.49	226	0.44	5.96	18.0	227	Cloudy
1002	22.75				13.93	221	0.41	5.94	21.8	285	
1012	22.75				14.06	219	0.39	5.93	23.9	337	
1022	22.75				14.19	219	0.34	5.92	25.2	296	
1032	22.75				14.28	219	0.32	5.93	25.6	254	
1042	22.75				14.16	219	0.33	5.92	26.4	219	
1052	22.75				14.13	219	0.32	5.92	27.3	209	
1102	22.75				14.66	219	0.30	5.91	28.6	198	
1112	22.75				14.78	219	0.34	5.91	29.1	185	
1122	22.75				14.72	219	0.31	5.91	29.4	150	
1132	22.75				12.51	227	0.52	5.87	38.6	125	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-16I-NVG-102814

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: Dup03 (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1142	22.75		120		12.61	225	0.45	5.90	35.5	88.5	Slightly Cloudy
1152	22.75		120		13.11	224	0.38	5.90	34.0	29.5	
1202	22.75		120		13.06	224	0.34	5.91	32.8	21.7	
1212	22.75		120		13.57	227	0.39	5.93	32.6	15.9	
1222	22.75		120		13.49	225	0.36	5.92	33.2	12.8	
1232	22.75		120		13.38	226	0.36	5.92	32.7	8.26	Clean water
1242	22.75		120		13.16	226	0.35	5.89	33.7	8.22	
1252	22.75		120		13.06	227	0.33	5.91	33.3	6.75	
1302	22.75		120		13.23	225	0.31	6.00	30.5	4.32	
1307	22.75		120		13.28	225	0.32	6.00	31.6	4.35	
1312	22.75		120	7 gals	13.25	225	0.32	5.99	33.1	4.41	
					Well Parameters Stabilized						
					Sampling Begins						

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-17S-NG6-093014

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: FD01-093014, FD01-093014-F (If applicable)

Purge/Sample Method: Low Stress (flow) method with Rental Bladder Pump
(QED 1.75 inch or Geotech Micro) or Peristaltic Pump

Depth Sampled: ~20 ft bgs Screen Int. 11.5-21.5 ft bgs
Sample Date & Time: 9 / 30 /2014 1230 hours 0000 (Dup Time)

Sampler(s): (K), PS, WP, CFS

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Overcast, light rain

PID BZ= 0.2 / W= 1.5 / PW= 0.2 PPM. Field Instrument Group: B

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	4 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	4 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	4 X 1 liter glass	(Yes) / No
Naphthalene	≤6°C	— 2 x 1 liter glass	Yes / (No)
TCL SVOCs, Pesticides/PCBs	≤6°C	6 x 1 liter glass	(Yes) / No
Total Metals	≤6°C, HNO3	2 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	2 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C)	S. Cond. 2 (µS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Comments
0935	22.30										
1000	22.60	CPM6 1sec 3sec	75		Adjust flow rate, fill flow through cell						
1015	22.60				14.58	122	4.97	4.74	293.2	2.46	clear/colorless pw
1022	Call to Navy - no reading										
1033	22.62				14.68	121	3.45	4.96	274.3	0.98	
1040	22.62		70		14.63	120	3.31	5.00	264.0	0.48	
1050	22.60		65		14.73	120	3.27	5.07	253.0	0.39	
1105	22.60		65		14.73	120	3.19	5.08	250.6	0.32	
1115	22.60		65		14.78	121	3.14	5.08	245.3	0.30	
1125	22.60		65		14.73	121	3.00	5.08	239.0	0.34	
1135	22.60		65		14.73	122	2.92	5.10	230.7	0.24	
1145	22.60		65		14.70	122	2.92	5.11	220.0	0.23	
1155	22.60		65		14.69	123	2.80	5.11	211.4	0.23	
1202	22.60		65		14.70	123	2.80	5.12	205.5	0.19	
1209	22.60		65		14.74	124	2.74	5.12	198.3	0.17	
1216	22.60		65	2 gals	14.73	124	2.70	5.13	194.7	0.18	

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-17S-NWG-093014

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: FD01-093014 (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1223	22.60	CPM6 10 5+C 85%C	65	2.25	14.74	124	2.60	5.13	188.4	0.17	
End purge - Just beyond 2 hr purge limit but parameter readings meet stabilization criteria for sampling per SAP.											

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-17I-NWG-100214

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 1
QC: N/A (If applicable)

Purge/Sample Method: Low Stress (flow) method with (Rental Bladder Pump) (QED 1.75 inch or (Geotech Micro)) or Peristaltic Pump

Depth Sampled: 50 ft bgs Screen Int. 45-55 ft bgs
Sample Date & Time: 10 / 2 /2014 1148 hours N/A (Dup Time)

Sampler(s): KJ, PS, WP, (CFS)

Visual Evidence of Sheen (Yes/(No)) Olfactory Evidence of Odor (Yes/(No))

Weather: Cloudy 60's, light rain showers

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group: B

Lab Analyte	Preservative	Containers	Collected
TCL VOCs	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-GRO (MTBE to Naphthalene)	≤6°C, HCL	2 x 40 mL vials	(Yes) / No
TPH-DRO (C9-C40)	≤6°C	2 X 1 liter glass	(Yes) / No
~~Naphthalene~~	~~≤6°C~~	~~2 x 1 liter glass~~	Yes / (No)
TCL SVOCs, Pesticides/PCBs	≤6°C	3 x 1 liter glass	(Yes) / No
Total Metals	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No
Dissolved Metals (Field Filtered)	≤6°C, HNO3	1 x 250 mL poly	(Yes) / No

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1 CPM	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp (°C) 3%	S. Cond. 2 (µS/cm) 3%	DO (mg/L) 10%	pH (S.U.) +/- 0.1	ORP (mV) +/- 10	Turbidity (NTU) 10%	Comments
0840	22.46										
0855	22.47	4									
0905	22.48	5	100		14.08	195	4.37	5.25	190.6	34.6	V. Slight cloudy / colorless
0920	22.50	5	100	1/2	13.47	190	0.61	4.67	200.4	11.9	Clear / colorless
0925	22.49	5	100		13.38	189	0.47	4.84	185.1	8.99	"
0930	22.49	5	100	3/4	13.37	188	0.49	4.89	179.3	6.32	"
0935	22.49	5	100		13.35	188	0.44	4.92	175.9	5.08	"
0940	22.49	5	100		13.32	187	0.42	4.95	171.7	4.65	"
0945	22.49	5	100	1	13.30	187	0.39	4.98	168.6	2.79	"
0950	22.50	5	100		13.29	187	0.40	5.01	148.5	2.31	"
0955	22.49	5	100		13.27	187	0.42	5.05	151.8	2.13	"
1000	22.49	5	100		13.29	188	0.55	5.05	165.3	2.17	"
1005	22.49	5	100	1 1/2	13.30	188	0.57	5.05	167.1	2.14	"
1010	"	"	100		13.31	188	0.47	5.11	158.1	1.96	"
1015	"	"	"		13.30	187	0.40	5.13	152.2	1.84	"
1020	"	"	"		13.29	187	8.75	5.14	132.0	1.80	"

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot. BZ=Breathing Zone, W=Well, PW=Purge Water

1. Pump dial setting (for example: hertz, cycle/min, etc.) 2. Siemens per cm (same as umhos/cm) at 25 °C. 3. Oxidation reduction potential (stand in for Eh).

TETRA TECH, INC.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-17I-MNG-100214

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: N/A (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1 CPM	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	DO mg/L	pH (S.U.)	ORP mV	Turbidity (NTU)	Comments
1025	22.49	5	100		13.29	187	8.52	5.16	124.0	1.66	Clear / colorless
1030	22.49	5	100	2	13.27	187	8.30	5.16	122.0		*Air bubble trapped inside cell removed.
1035	22.49	5	100		13.28	187	7.90	5.17	138.4	0.94	
1040	22.49	"	"		13.24	186	0.32	5.18	97.6	0.85	Clear / colorless
1045	"	"	"		13.21	186	0.29	5.19	93.6	0.96	"
1050	"	"	"	2 1/2	13.20	186	0.29	5.19	101.5	1.00	"
1055	"	"	"		13.19	186	0.36	5.20	113.3	0.74	"
1100	"	"	"		13.17	186	2.64	5.19	122.6	0.69	"
1105	"	"	"		13.18	186	2.53	5.20	122.1	0.69	
1110	"	"	"	3	13.19	186	2.52	5.21	121.9	0.62	
1115	"	"	"		13.21	186	2.80	5.21	121.5	0.05	
1120	"	"	"		13.20	186	2.30	5.21	117.1	0.62	
1125	"	"	"		13.19	186	2.24	5.22	114.1	0.59	*Change tank
1130	"	"	"	3 1/2	13.18	186	2.11	5.22	112.7	0.52	
1135	"	"	"		13.16	186	1.98	5.22	96.9	0.48	
1140	"	"	"		13.18	186	2.01	5.22	96.5	0.50	
1145	"	"	"		13.20	186	2.05	5.23	97.4	0.47	
1148	Meet and exceed 2hr purging time requirement/limit. Stabilization criteria met. Begin sampling.										

RE-

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Page 1 of 1

24.55

Well: MW01-10S
Site: CED Area Site 01
Date Installed: 10-24-95
Date Developed: 9-15-14
Dev. Method: Pump & Surge
Pump Type: Hydra

Depth to Bottom (ft.): ~~22.3~~
Static Water Level Before (ft.): 22.30
Static Water Level After (ft.): 22.40
Screen Length (ft.): 13-23
Specific Capacity:
Casing ID (in.): 2"

Responsible Personnel: Walt Payton
Drilling Co.: —
Project Name: CED Area Site 01 (Additional GW sampling)
Project Number: 112G01813

	Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
9-15-14	1540	←		22.30	Start Surge	on well	→		No odor	Bottom
										up
	1640	←		Finish	Surge	on	well	→		up
9-16-14	0906	start pump & surge		22.30		7.36	80.9	>999	no odor Brown Wa	Bottom
	0811			23.90		6.17	80.0	213	Cloudy	up
	0821			24.00		5.56	82.2	33.8	Slightly Cloudy	up
	0826			24.05		5.52	85.2	32.2		Bottom
	0831			24.05		5.53	85.9	13.2		up
	0836		20 gal	23.80		5.55	87.1	14.7		up
	0841			23.80		5.53	87.6	19.5		"
	0954	start Reactivation pump		23.40		5.52	87.6	101	Cloudy	Bottom
	0859		40 gal	23.80		5.48	87.4	13.8	Slightly Cloudy	"
	0904			23.80		5.47	87.6	6.86	Clear	"
	0909		55 gal	23.80		5.53	88.3	3.08	"	"

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Well: MW01-125
Site: CED Area Site 01
Date Installed: 10-10-95
Date Developed: 9-16-14
Dev. Method: pump & surge
Pump Type: Wyhan
Depth to Bottom (ft.): 23.60
Static Water Level Before (ft.): 18.80
Static Water Level After (ft.): 18.90
Screen Length (ft.): 14-24
Specific Capacity:
Casing ID (in.): 2"
Responsible Personnel: Walt Payton
Drilling Co.: —
Project Name: CED area site 01 (Additional GW Sampling)
Project Number: 112G01813

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1000	←		Start surge on well			→		Woden	Bottom
								↓	up
1100			First surge on well					↓	up
1105		start pump and surge on well						↓	
1107			19.10		5.78	118.3	145	Slightly Cloudy	Bottom
1112			19.05		5.70	115.2	132	↓	"
1117			19.05		5.66	112.9	120	↓	"
1127			19.05		5.66	109.2	102	↓	up
1132			19.05		5.64	111.9	70.0	↓	up
1137		40 gal	19.05		5.60	111.8	32.0	↓	"
1147		start proactive pump			5.65	111.6	10.9	Clean water	Bottom
1152			19.05		5.63	111.6	6.50	↓	up
1157			19.05		5.63	111.6	4.00	↓	up
1202		55 gal	19.05		5.63	111.8	0.49	↓	"

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Well: MW01-13S
Site: CED Area Site 01
Date Installed: 10-12-95
Date Developed: 9-17-14
Dev. Method: Pump & Surge
Pump Type: Wyhan
Depth to Bottom (ft.): 19.10
Static Water Level Before (ft.): 17.00
Static Water Level After (ft.): Dry
Screen Length (ft.): 8-18
Specific Capacity:
Casing ID (in.): 2"
Responsible Personnel: Walt Payan
Drilling Co.: —
Project Name: CED Area Site 01 (Additional GW sampling)
Project Number: 112G01813

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1040	←	—	17.00	Start Surge on well			→	no odor	Bottom
1140				Finish Surge on well					up
									up
1142		Start pump &		Surge with Wyhan.					
1143		Well Dry after		collected					
		Let Recharge.			6.65	300 ml 108.	>999	300 ml	Bottom
1225		Recharge 90% of Original Volume							
1227			17.60		6.62	106.7	>999	300 ml	up
1228	←	—		day	—	—	→	300 ml	up
1255			17.60		5.94	96.1	>999		
1256	←	—		Day	—	—	→	300 ml	Bottom
1329			17.60		5.82	96.4	843		
1330	←	—		one	—	—	→	300 ml	up
1400			17.60		5.75	95.7	670		
1401	←	—		Day	—	—	→	300 ml	up

Tetra Tech

RE- MONITORING WELL DEVELOPMENT RECORD

Well: MW01-13S
Site: CEO Area Site 01
Date Installed: 10-12-95
Date Developed: 9-17-14
Dev. Method: Pump & surge
Pump Type: [redacted] Waterra

Depth to Bottom (ft.): 19.10
Static Water Level Before (ft.): 17.00
Static Water Level After (ft.): Dry
Screen Length (ft.): 8-18
Specific Capacity:
Casing ID (in.): 2"

Responsible Personnel: Matt Payson
Drilling Co.: —
Project Name: CEO area Site 01 (Additional GW Sampling)
Project Number: 112G01813

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units us/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1430			17.60		5.72	96.9	447	Cloudy	Bottom
	←			Dry			→	300 ml	
1500			17.60		5.76	95.8	385	Cloudy 300 ml	up
	←			Dry			→		
1530			17.60		5.70	96.1	301		
	←			Dry			→		
1600			17.60		5.80	96.6	249	Cloudy 300 ml	up

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW01-13sa
Site: CED Anch Site 01
Date Installed: 10-8-14
Date Developed: 10-9-14
Dev. Method: Pump + Surge
Pump Type: Proactive Pump

Depth to Bottom (ft.): 25.55
Static Water Level Before (ft.): 18.28
Static Water Level After (ft.): Below pump
Screen Length (ft.): 10 (13.11-23.11' bgs)
Specific Capacity:
Casing ID (in.): 1.5 in

Responsible Personnel: Walt Pawa
Drilling Co.: Technical Drilling Services (TDS)
Project Name: CED Anch Site 1 (Additional GW sampling)
Project Number: 112601813

New well

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1520	R	Start	Surge on	well	→	→	→	Bottom up
1620	R	Finish	Surge on	well	→	→	→	up
1622	Start pump & surge		19.80	15.18	6.11	105	>999	Brown
1627			24.50	14.64	5.84	105	>999	
1632			↓	15.15	5.59	104	>999	
1642				14.25	5.44	98	601	
1652				14.03	5.42	97	438	
1702			↓	14.48	5.45	97	440	
10-10-14 1205			18.40	13.96	5.62	101	>999	Brown
1210	Below pump	→	→	13.92	5.41	96	252	cloudy
1215			↓	13.84	5.10	95	163	
1220				13.32	5.26	94	26.5	slightly
1225				13.26	4.73	94	19.4	
1235				13.40	5.28	95	12.9	clear
1245				13.44	5.35	94	4.23	
1250			↓	13.37	5.32	94	4.40	
1255				13.42	5.35	94	3.00	

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Well: MW01-14S
Site: CED Area Site 01
Date Installed: 10/5/95
Date Re-Developed: 9/17/14
Dev. Method: Surge + Pump
Pump Type: WaTera / Proactive Pump
Depth to Bottom (ft.): 26.16' ftbtoc
Static Water Level Before (ft.): 24.30'
Static Water Level After (ft.): 24.26
Screen Length (ft.): 10' (15-25 ftbgs)
Specific Capacity:
Casing ID (in.): 2
Responsible Personnel: K. Jalkut
Drilling Co.:
Project Name: CED Area - Site 01 (Additional GW Sampling)
Project Number: 112G01813

1.2 s/u

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1010		~1.5	24.30					Proactive pump to see if it
1050				13.10	6.78	199.5		would go dry
1110								Switch to WaTera to surge
1115								- Start 6" off bottom
1145								- move up 12"
1200								- move up 6"
1220			24.25	15.2	5.71	204.5	483	Initiate surge + pump · 6"
1235				14.4	5.68	212.9	52.6	off bottom
1250				14.2	5.69	214.6	16.8	
1305			24.33	14.4	5.66	212.6	8.89	
1320			Dry - recharging					- move up 1'
1350			24.28	14.4	5.64	212.7	199	
1405			Dry - recharging					- lower footvalve.
1415				14.1	5.65	206.4	72	8" off bottom
1425				13.8	5.62	211.3	51.4	
1435				13.9	5.62	210.5	32.6	
1445		↓		13.9	5.61	209.6	22.1	
1455		~40	24.27	13.2	5.65	200.0	276	Switch to proactive pump - on bottom

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW01-14S
Site: CED Area
Date Installed: 10-5-95
Date Developed: 9/17/14
Dev. Method: Surge + Pump
Pump Type: UnTetra / Productive Pump

Depth to Bottom (ft.): 26.16 ftbtpvc
Static Water Level Before (ft.): 24.30
Static Water Level After (ft.): 24.26
Screen Length (ft.): 10' (15-25' bgs)
Specific Capacity:
Casing ID (in.): 2

Responsible Personnel: KJ
Drilling Co.:
Project Name: CED Area - Site 01
Project Number: 112601813

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1505		↓		13.4	5.67	200.8	14.4	
1515				12.9	5.54	199.7	5.70	
1525				12.9	5.59	202.0	14.2	Pull pump up 1'
1535				13.0	5.58	200.3	1.52	Move down to 8" off
1540				13.0	5.55	204.0	1.47	botton to get continuous
1545		~65 gals overall	24.31	12.9	5.56	200.0	1.28	flow
								clear/colorless pw
End redevelopment								

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Page 1 of 1

Well: MW02-03S
Site: CEO Area Site 02
Date Installed: 10-24-89
Date Developed: 9-16-14
Dev. Method: Pump & Surge
Pump Type: Typhon

Depth to Bottom (ft.): 33.20
Static Water Level Before (ft.): 26.60
Static Water Level After (ft.): 26.70
Screen Length (ft.): 13-23
Specific Capacity:
Casing ID (in.): 2"

Responsible Personnel: Walt Payson
Drilling Co.: —
Project Name: CEO area Site 02 (Additional GW Sampling)
Project Number: 112G01813

Note - TD does not match up w/ historical info. Was this well replaced in the past?

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1335	←	—	Start Surge on well			—	→	no odor	Bottom
									up
1435			Finish Surge on well						up
1440	Start pump & Surge		26.65		5.25	291.0	126	Cloudy	Bottom
1450			27.00		5.10	286.0	21.6	Slightly	up
1500		30 gal	27.00		5.07	300.0	20.0	↓	up
1510		↓	27.00		5.09	302.1	91.9	Cloudy	Bottom
1520		↓	27.00		5.09	310.4	74.9		up
1530		55 gal	27.00		5.05	318.9	94.0		up
1540			27.00		5.07	324.2	75.0	↓	Bottom
1545			27.00		5.07	325.2	31.3		up
1555	Start Peristaltic pump		27.00		5.08	328.0	5.86	Clear	" "
1400			27.00		5.06	332.0	1.23	↓	" "
1405		90 gal	27.00		5.07	336.9	0.72	↓	" "

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW02-045a
Site: 02 CED Area
Date Installed: _____
Date Developed: 9-18-14
Dev. Method: Surge + Pump
Pump Type: UniTerra / Proactive Pump

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): 20.11
Static Water Level After (ft.): _____
Screen Length (ft.): 10' (16-26' bgs)
Specific Capacity: _____
Casing ID (in.): 2

Responsible Personnel: LJ
Drilling Co.: _____
Project Name: Duffer CED Area Site 02 (Additional GW Sampling)
Project Number: 112601813

In car lot - replacement well for MW02-04S which was installed originally on 10/24/89 - converted Nov 2013

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1035			21.10					Start surge
1140								End surge
1150				25.20	7.92	98.4	OVER RANGE	Start surge + pump
1205				16.80	6.03	87.3	640	
1215				16.20	5.82	94.1	258	
1225				16.60	5.82	101.5	73.8	
1240			21.10	16.20	5.84	105.0	46.3	
		Moved fr up to top and lost water; checked valve (ok) -		started to go back down but lowered to bottom of WT				
1320				17.4	5.81	109.7	137	
1335		~35		16.5	5.81	110.7	127	
1350				15.9	5.78	108.7	306	
1405				15.6	5.72	109.0	287	
1425		~50		15.4	5.72	108.9	160	
1440		~70		16.80	5.75	111.0	68.4	
1505		~80		16.10	5.69	111.3	93.1	Stop: getting H2O - came back to pump w/ proactive
1610				15.1	6.05	95.4	149	Proactive pumping only on bottom

Call from Scott 9:30-10:15 Shawn arrive 11:15 instead 12:30 - shallow trays that need to be moved

Call Scott re: dups not to be analyzed as samples? R top 3 tbd - w/ lowest one on bottom not) about 2 liters

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW02-045D
Site: CED Area - Site 02
Date Installed:
Date Developed: 9/18/14
Dev. Method: Surge + Pump
Pump Type: WaTerra / Proactive pump

Depth to Bottom (ft.):
Static Water Level Before (ft.): 20.11
Static Water Level After (ft.):
Screen Length (ft.): 10' (16-26')
Specific Capacity:
Casing ID (in.): 2

Responsible Personnel: K. Jalkut
Drilling Co.:
Project Name: CED Area - Site 02 (Additional GW Sampling)
Project Number: 112601813

In car lot - replacement well for MW02-045 which was originally installed 10/24/89. Roadbox conversion NOV. 2013.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µs/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1620				14.2	5.78	94.0	11.4	Proactive pumping only - at bottom
1630		+20 gals		14.1	5.72	93.4	5.78	Pull up ~1.5'
1640				14.2	5.74	93.2	15.1*	
1650		+35 gals		14.1	5.72	93.9	12.1	Pull up ~1.5+'
1700				14.1	5.72	94.9	2.29	Pull up ~1.5+
1705		+40		14.1	5.72	94.2	1.51	~~Target midpt sat screen~~
1710				14.2	5.75	95.0	3.29	Target midpt of sat screen
1715		+60		14.2	5.74	95.3	0.47	*
1720				14.1	5.74	95.5	0.45	
1725		+70		14.1	5.74	94.6	0.34	
End re-development.		~150 gal removed overall						

* Pump stopped

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Well: MW12-65's | Depth to Bottom (ft.): 28 btoc | Responsible Personnel: KT, PS
Site: CED Site 2 | Static Water Level Before (ft.): 21.54btoc | Drilling Co.:
Date Installed: 10-24-89 | Static Water Level After (ft.): 21.65' " | Project Name: CED Area - GW sampling Sites 2, 3, Drum Removal Area
Date Developed: 9-5-14 | Screen Length (ft.): 10' (16.5-26.5' bgs) | Project Number: 112601813
Re Dev. Method: Surge + Pump | Specific Capacity:
Pump Type: WaTerra | Casing ID (in.): 2

In field by fenceline

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µs/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
~~0830~~			21.65	~~11.3~~	~~6.29~~	~~588~~	~~745~~	
0853 - 1030								Start surge - move fv up in 1'
								increments every 10 min of surf.
1300 - 1400		pumped 20 gal - no surging -			fv bottom - no readings			screen
1400 -		surging & pumping					OS - dark gray	
					16			
1415			22.0	18.3	6.56	101.9	OS	FV @ bottom
1420				16.0	5.66	102.7	OS	Move up 1'
1425				14.9	5.54	104.2	844	
1430			22.4	15.2	5.51	104.9	282	
1435				15.4	5.55	104.3	943	Move FV down
1440				14.5	5.53	106.8	831	
~~1445~~			22.54	14.9	5.47	106.9	OS	
		Note - "OS" = offscale; fv = footvalve						

buy w/ valve, jack. PS - data ck

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW02-05S
Site: CED Site 2
Date Installed: 10/24/89
Date Developed: 09/05/14 + 09/16/14
Dev. Method: Pump & Surge
Pump Type: Waterra / ProActive Pump

Depth to Bottom (ft.): 26.20 27.99 (After development)
Static Water Level Before (ft.): 21.73
Static Water Level After (ft.): 21.80
Screen Length (ft.): 10 (16.5-26.5)
Specific Capacity: —
Casing ID (in.): 2

Responsible Personnel: B. Geringer
Drilling Co.: —
Project Name: CED Area Site 3, TPH Delineation & GW Sampling
Project Number: 112G01813

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
0905	≈ 2.0						Off Scale	Very Silty, Dark Gray	- Pump/Surge at bottom
0915		≈ 10					" "	" "	- Bring up 1'
0925		≈ 18					" "	" "	- Bring up 1'
0935		≈ 25	23.05	13.2	5.61	105.6	" "	" "	- Bring up 1'
0945		≈ 30	23.25	13.3	5.46	106.2	855	Not as Silty, Gray	- Bottom
0955	≈ 1.0	≈ 35	23.40	13.2	5.55	108.2	Off Scale	Very Silty, Gray	" " *
1005		≈ 40	23.43	13.4	5.60	109.7	" "	" "	Bring up 1'
1015		≈ 45	23.54	13.7	5.68	111.4	" "	" "	Bring up 1'
1025		≈ 50	23.60	13.5	5.59	110.2	800	Not as Silty	Bring up 1'
1035		≈ 55	23.60	13.5	5.65	111.4	475	" "	Bring up 1'
1045	≈ 0.0	≈ 60	23.60	13.2	5.47	113.2	Off Scale	Very Silty, Gray	Bottom
1055	Start	Pump							Switch to Peristaltic Pump
1105		≈ 70	25.45	13.3	5.55	108.6	24.3	Clear/colorless	Bottom
1115		≈ 80	25.23	13.2	5.49	108.3	2.48	" "	up 1'
1125		≈ 90	25.28	13.2	5.45	109.0	10.0	" "	up 1'
1135		≈ 100	25.32	13.4	5.54	108.6	4.32	" "	" "
1145		≈ 110	25.27	13.3	5.57	108.9	2.43	↓	" "
		Reach ~15 NW - Finish		Development					

* No flow, pull foot valve - coarse sand stuck in foot valve.

TD (After system pumping) = 27.94

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW02-06sa
Site: CED Area - Site 2
Date Installed: 10-9-14
Date Developed: 10-13-14
Dev. Method: Waterra Surget Forge pump
Pump Type: Waterra pump / Proactive pump

Depth to Bottom (ft.): 25.30
Static Water Level Before (ft.): 20.58
Static Water Level After (ft.): 20.60
Screen Length (ft.): ~16-26 (10')
Specific Capacity:
Casing ID (in.): 1.5 in

Responsible Personnel: Walt Payton
Drilling Co.: TDS Drilling
Project Name: CED Area (Additional GW Sampling)
Project Number: 112601813-2123

New well for MW02-06S (paved over in car lot)

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0915	≈	Start	Surge on	Well			≈	
1015	≈	Finish	Surge on	well				
1020	Start	pump & surge	20.50	16.75	7.58	143	>999	Brown
1030			20.60	16.62	7.35	143	>999	
1040			20.60	16.56	7.22	143	>999	
1050			20.60	16.20	6.13	136	>999	
1100			20.75	16.10	5.90	130	>999	
1110			20.75	16.08	5.82	124	>999	
1120			20.75	16.09	5.72	120	750	
1130			20.75	16.11	5.72	120	654	
1140			20.75	16.12	5.72	119	413	
1150			20.75	16.19	5.67	117	305	
1200			20.75	16.04	5.64	117	330	
1210			20.75	16.12	5.65	116	237	
1220			20.75	16.24	5.61	115	205	
1230			20.75	16.12	5.61	115	182	
1240			20.75	16.12	5.59	115	174	

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW02-065a
Site: CED Area Site 2
Date Installed:
Date Developed: 10-13-14
Dev. Method: Waterra surge & purge
Pump Type: Waterra pump / Proactive pump

Depth to Bottom (ft.): 25.30
Static Water Level Before (ft.): 20.50
Static Water Level After (ft.): 20.50
Screen Length (ft.): ~16-26 (10')
Specific Capacity:
Casing ID (in.): 1.5 in

Responsible Personnel: Walt Pryor
Drilling Co.: IDS Drillers
Project Name: CED Area
Project Number: 112G-0813

New well for MW02-065 (paved over on car lot)

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1250				16.18	5.61	114	168	cloudy
1300				16.17	5.59	113	138	
1310				16.23	5.57	113	124	
1320				16.18	5.57	113	108	
1330				16.08	5.59	113	52.8	slighty
1335				16.13	5.57	112	50.0	
1445	Start proactive pump 20.50			16.24	5.79	114	12.1	
1450			21.40	15.87	5.63	111	2.17	clean
1455			21.40	15.84	5.54	114	2.00	
1500			21.40	15.88	5.58	114	0.89	
1505			21.40	15.84	5.56	114	0.52	
1510		140 gals	21.40	15.82	5.53	114	0.46	

451-A
PID - B
Turb - B

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Well: MW02-086A
Site: Site 02 CED Area
Date Installed:
Date Developed: 9-5-14
Dev. Method: Waterra-surge + purge
Pump Type: Waterra / Proactive pump

Depth to Bottom (ft.): 28.35
Static Water Level Before (ft.): 22.41
Static Water Level After (ft.): 23.40'
Screen Length (ft.): 11.80 - 26.80 = 15'
Specific Capacity:
Casing ID (in.): 2"

Responsible Personnel: Peter Seward
Drilling Co.:
Project Name: Site 2 CED Area (Additional GW Sampling)
Project Number: 112G0183

Replacement well for MW02-085, which was originally installed 5/21/93. ~~Roadbox conversion in Nov 2013~~

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ~~uS/cm~~)	Turbidity (NTU)	Remarks (odor, color, etc.)
0840	began surging well with waterra pump and 2 check valves. Moved check valves up and down saturated screen							
0910	began developing with waterra and check valve. moved check valve up and down the saturated screen							
0925			22.65	16.3	6.65	272.3	offscale	dark brownd ~1220 mls/min
0935			22.65	15.0	5.96	228.6	396	brown ~1220 mls/min
0945			22.72	15.0	5.83	227.8	328	" ~1220 "
0955			22.75	15.1	5.81	226.3	263	" "
1005			22.70	15.3	5.79	224.9	292	" "
1015			22.70	15.1	5.78	227.1	436	" "
1025			22.70	15.5	5.78	221.1	450	" "
1045			22.70	15.6	5.81	226.3	580	" "
1055		~16	22.70	15.2	5.88	220.8	410	" "
1120	switched to proactive pump.			started ~ 6 inches from bottom will work my way up the sat. screen				~8000 mls/min
1125			23.55	sharing YSI, only measuring			~~turbidity~~	for now = 45.2 NTUs. ~8000 "
1130			23.55	—	—	—	20.2	clear / colorless "
1135		55	23.60	—	—	—	17.6	" " "
1145			23.60	—	—	—	7.3	" " "
1155			23.60.	—	—	—	5.1	" " "
1210	switched to waterra pump will develop from top of screen to the bottom per FOL.							

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW02-085 | Depth to Bottom (ft.): 28.35 | Responsible Personnel: Peter Seward
Site: Site 02 CED Area | Static Water Level Before (ft.): 22.41 | Drilling Co.:
Date Installed: | Static Water Level After (ft.): 23.40' | Project Name: Site 02- CED Area (Additional GW Sampling)
Date Developed: 9-5-14 | Screen Length (ft.): 11.80 - 26.80 | Project Number: 112601813
Dev. Method: Waterra - surgepump | Specific Capacity:
Pump Type: Waterra/pro-active pump | Casing ID (in.): 2"

Replacement well for MW02-085, which was installed 5/21/93. Road

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1230			22.92	14.1	5.74	213.1	280	brown - turbid	~1400 mS/cm
1235			22.98	13.7	5.74	214.2	179	lt. brown - turbid.	"
1245		110	22.98	13.7	5.73	211.5	189	" "	"
1305 ~~1310~~	started	developing	midpoint	of the screen	with the	proactive	pump		
1315			23.40	12.6	5.75	205.5	9.56	clear - colorless	~8500 mS/cm
1325			23.40	12.5	5.77	226.1	6.59	clear - colorless	"
1330		135gal	23.40	12.7	5.80	216.3	5.22	" "	"
			development complete.						

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW02-095D
Site: CED Area Site 02
Date Installed: ~~5-20-93~~ 12-27-15
Date Developed: 9-18-14
Dev. Method: Pump & Surge
Pump Type: Waterra/Proactive Pump

Depth to Bottom (ft.): 26.75
Static Water Level Before (ft.): 20.40
Static Water Level After (ft.): 20.60
Screen Length (ft.): 10
Specific Capacity:
Casing ID (in.): 2"

Responsible Personnel: Walt Pratum
Drilling Co.:
Project Name: CED Area Site 02 (Additional GW Sampling
Project Number: 112G01813

Replacement well in car lot for MW02-095, which was originally installed 5/20/93. Casing conversion in Nov 2013

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
0938	Start	Surge	20.40					no odor	Bottom
									up
@1038	Start	pump &	Surge and Vac						up
1040			20.50		8.54	80.5	>999	Brown Water	Bottom
1050			20.50		7.29	70.9	>999		up
1100			20.50		5.96	66.2	246	Cloudy	up
1110			20.50		5.77	66.9	429		up
1120			20.60		5.74	64.4	201		Bottom
1130			20.60		5.65	64.5	181		up
1140			20.60		5.68	64.5	161		up
1150		40 gal.	20.60		5.69	64.3	252		B
1200			20.60		5.71	64.2	167		up
1210			20.60		5.69	64.0	138		up
1220			20.60		5.71	64.1	96.0		Bottom
1230			20.60		5.68	64.2	149		up
1240			20.60		5.71	64.6	121		up
1250			20.60		5.69	64.2	100		Bottom
1300		40 gal	20.60		5.72	64.6	90.0		up

Tetra Tech

MONITORING WELL RE DEVELOPMENT RECORD

Well: MW02-09SW
Site: CED Area Site 02
Date Installed:
Date Developed: 9-18-14
Dev. Method: Pump & Surge
Pump Type: QuaTerra Proactive Pump

Depth to Bottom (ft.): 26.75
Static Water Level Before (ft.): 20.40
Static Water Level After (ft.): 20.60
Screen Length (ft.): 12-27 = 15'
Casing ID (in.): 2"

Responsible Personnel: Walt Pryor
Drilling Co.: —
Project Name: CED Area Site 02 (Additional GW Sampling)
Project Number: 112G01813

Casing

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1310			20.60		5.70	64.4	47.7	Slightly cloudy	Up
1317	Switch to Proactive pump				5.78	63.6	63.1		Bottom
1322			20.60		5.67	63.8	21.5		Up
1327			20.60		5.65	64.0	20.4		Up
1335	Stop Proactive to dump purge								
1508			20.60		5.88	68.8	43.4	Slight Water	Bottom
1518			20.60		5.63	64.2	21.2		Up
1528			20.60		5.65	64.2	2.93	Clear	Up
1533			20.60		5.64	64.1	0.95		"
1538		150 gal	20.60		5.63	64.0	0.79		"

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Page 1 of 1

Well: MW02-10S
Site: CED Area Site 02
Date Installed: _____
Date Developed: 9-19-14
Dev. Method: Pump & Surge
Pump Type: Typhoon/Apache Pump

Depth to Bottom (ft.): 26.20
Static Water Level Before (ft.): 20.05
Static Water Level After (ft.): 21.45
Screen Length (ft.): 13-28 = 10'
Specific Capacity: _____
Casing ID (in.): 2"

Responsible Personnel: Walt Pagan
Drilling Co.: —
Project Name: CED Area Site 02 (Additional GW Sampling)
Project Number: NLG01213

Flush mount in car lot
original well installed 5/20/93. Casing conversion Nov 2013.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
0744			20.05	Start	Surge on well →			no odor	Bottom
									up
0844	←			Finish surge on well			→		up
0845	Start pump & surge				6.83	96.6	>999	Brown water	Bottom
0855			21.45		6.09	105.6	>999	↓	" "
0905			21.45		6.10	110.7	557	↓	up
0915			21.45		6.19	116.9	49.9	slightly cloudy	up
0925			21.45		6.24	119.1	59.1	↓	Bottom
0935		50 gal	21.45		6.26	120.9	23.2	↓	up
0945	start production pump		21.45		6.26	121.7	11.0	clean water	up
0955		↓	21.45		6.28	122.9	4.27	↓	Bottom
1000		↓	21.45		6.28	123.0	2.16	↓	up
1005		100 gal	21.45		6.28	123.4	1.25	↓	Bottom

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Well: MW02-11S
Site: Site 02 CED Area
Date Installed: _____
Date Developed: 9-19-14
Dev. Method: Surge + pump
Pump Type: LiquaTerra / Proactive pump

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): 19.70'
Static Water Level After (ft.): 19.70'
Screen Length (ft.): 15' (13-28' bgs)
Specific Capacity: _____
Casing ID (in.): 2

Responsible Personnel: KJalkut
Drilling Co.: _____
Project Name: Site 02 CED Area (Additional GW Sampling)
Project Number: 112601813

Flush mount in car bt. Original well installed 5/26/93
Casing conversion in Nov. 2013

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0710			19.70					~18"
0735								Initiate surge ~5' off bottom - lowest level w/ LiquaTerra on ground
0900	End surge		19.70					
~~0910~~								
0910			19.70	14.7	7.19	90.9	74.1	Initiate surge + pump - 18" off bottom
0920				15.2	5.86	79.6	144	lowered tubing 12"
~~0930~~		4 gals	19.70	—	—	—	—	Stopped pumping - fr adc - raised tubing 12" - WL @ 19.7' ???
0935			19.70	15.7	5.80	78.9	94.4	
0945		7		15.1	5.82	80.2	39.3	move tubing up
0950				15.7	5.74	79.8	56.0	~~move tub~~
1008		11		16.2	5.94	79.7	26.9	move tubing up
1017		15	19.70	16.4	5.96	83.7	11.6	~~move tubing up~~
1030		19		16.9	5.94	82.2	4.37	move tubing up - acting water to lowest
1043		23		16.4	5.88	79.2	2.87	move tubing down
1100		27		16.0	5.80	77.1	7.71	move tubing down
1110		31		16.1	5.87	79.4	14.50	
1120		35	19.70	15.5	5.71	79.6	11.00	move tubing down

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW02-11S
Site: Site 02 CED Area
Date Installed: _____
Date Developed: 9-19-14
Dev. Method: Surge + pump
Pump Type: WaTera / Proactive pump

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): 19.70'
Static Water Level After (ft.): 19.70'
Screen Length (ft.): ~~10~~ 15' (13-28' bgs)
Specific Capacity: _____
Casing ID (in.): 2

Responsible Personnel: K Jalkut
Drilling Co.: _____
Project Name: Site 02 CED Area (Additional GW Sampling)
Project Number: 112G01813

Flush mount in car lot. Orig. well installed 5/26/93. Casing conversion Nov 2013

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ~~us/cm~~)	Turbidity (NTU)	Remarks (odor, color, etc.)
1135		40		16.1	5.84	79.2	25.8	move tubing to near bottom -
1140		45 gals	19.70	15.9	5.84	~~78.2~~	122	6" off.
								Switch to proactive pump to
1205				16.1	5.86	~~76.3~~	15.5	get residual off bottom
1210				14.9	5.69	75.6	9.87	
1215				14.8	5.75	76.0	8.87	pull pump up
1220			19.70	14.8	5.73	76.2	6.65	
1225				14.7	5.70	75.6	1.72	pull pump up
1230				14.7	5.~~78~~	76.1	13.3	out of water > go back to cw
1235				14.6	5.68	76.2	1.28	lower to bottom for residuals
1238				14.7	5.68	75.2	40.5	
1243				14.6	5.67	75.5	~~21.6~~ 11.6	
1246			19.70	14.6	5.69	75.5	8.57	
1249				14.7	5.65	76.6	3.98	Target MDPT set screen
1252				14.7	5.65	75.9	2.26	↓
1255		↓ 145 gals 90 gals total.		14.7	5.67	75.8	1.00	↓
End re-development								

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW03-01sa
Site: CED Area Site 03
Date Installed: 10-7-14
Date Developed: 10-9-14
Dev. Method: Surge+pump
Pump Type: Productive pump

Depth to Bottom (ft.): 26.65
Static Water Level Before (ft.): 20.05
Static Water Level After (ft.): Below pump
Screen Length (ft.): 10' (14-24')
Specific Capacity:
Casing ID (in.): 1.5 in

Responsible Personnel: Walt Payne
Drilling Co.: TDS Inc.
Project Name: CED Area (Additional GW Sampling)
Project Number: 112G01813

Replacement well for MW03-01S

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0950	← Start surging well						5	Bottom up
1050	← Finish surge						5	up
1100	← Start pump + surge							Bottom
1102			23.20	15.54	6.97	699	>999	Brown
1107			23.50	14.75	6.05	535	195	Cloudy
1112			23.55	14.61	5.68	523	103	
1122			23.30	14.63	5.48	537	97.0	
1133			23.30	14.62	5.39	544	50.5	Slightly cloudy
1143			23.30	14.51	5.29	638	86.4	
1200			23.70	14.61	5.29	469	40.5	
1205			25.00	14.52	5.25	468		
1210			25.10	14.55	5.23	469	18.4	clear - colorless
1215			25.10	14.55	5.15	473	19.5	" "
1220			25.10	14.60	5.21	479	17.0	" "
1225			25.10	14.59	5.17	477	4.52	" "
1230			beneath pump	14.60	5.18	476	1.44	" "
1235		↓	beneath pump	14.62	5.16	478	1.18	

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW03-015a
Site: CED Area Site 3
Date Installed: 10-8-14
Date Developed: 10-9-14
Dev. Method: Surge pump
Pump Type: Proactive pump

Depth to Bottom (ft.): 26.65
Static Water Level Before (ft.): 20.05
Static Water Level After (ft.): Below pump
Screen Length (ft.): 10' (~14-24)
Specific Capacity:
Casing ID (in.): 1.5"

Responsible Personnel: Walt Pryor / P. Seward
Drilling Co.: TDS
Project Name: CED Area C Additional GW Sampling
Project Number: 112G01813

Replacement well for MW03-015

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1240			beneath top of pump	14.61	5.13	479	1.70	clear - colorless
1245			beneath top of pump	14.56	5.15	479	1.82	" "
1250			" "	14.57	5.15	479	1.97	" "
1255			" "	14.55	5.14	479	2.22	" "
1300			" "	14.49	5.13	477	1.88	" "
1305		~110 gallons	" "	14.54	5.14	480	1.79	" "

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Page 1 of 1

Well: MW03-025 | Depth to Bottom (ft.): 25.69' btp PVC | Responsible Personnel: P. Seward
Site: 03 CED Area | Static Water Level Before (ft.): 18.38 | Drilling Co.:
Date Installed: 5-26-93 | Static Water Level After (ft.): 18.90 | Project Name: Site 03 CED Area (Additional GW Sampling)
Date Developed: 9-3-14; 9-4-14 | Screen Length (ft.): 15' (8.5-23.5 bgs) | Project Number: 112601813
Dev. Method: Surget Pump | Specific Capacity:
Pump Type: Waterra/Proactive | Casing ID (in.): 2" PVC

lustr. group B

well headspace = 0.0 ; pump ID = 25.69 ft b TOP of PVC ; removed tubing from well

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ~~us/cm~~)	Turbidity (NTU)	Remarks (odor, color, etc.)
9-3-14 1400	began surging well							
1430	began developing well with waterra & check valve. Moving check valve up & down the length of sat. scr							1400 mls/min
1440			18.45	18.2	5.59	62.3	78.7	clear - 1400 mls/m
1450			18.48	17.2	5.36	61.8	39.8	clear 1400 mls/m
1500			18.49	17.5	5.23	60.6	18.4	"
1510			18.50	15.1	4.93	60.0	6.20	"
1520			18.50	14.9	5.03	59.5	6.94	"
1525	began surging well							
1605	began developing well w/ waterra & check valve							
1615			18.50	15.7	4.96	59.5	12.2	" ~1250 mls
1625			18.50	15.5	5.15	59.0	8.56	" ~1250 m/
1635		15	18.50	15.6	5.16	59.2	10.13	" ~1250 mls/m
	removed ~15 gallons on 9-3-14							
9-4-14 1540	began developing w/ proactive pump; ~~started @ midpt of the saturated screen~~ spent the first 5 minutes pulling ~~it~~ dark brown sediment from bottom of well until clear, then started @ midpt of sat.							
1555			18.90	14.0	4.48	58.5	2.05	clear - colorless ~1800 mls/m
1605		245 gallons	18.90	14.0	4.82	58.0	2.10	~1800 mls/m

Tetra Tech

RE- MONITORING WELL DEVELOPMENT RECORD

Well: MW03-03S
Site: CED Site 3
Date Installed: 6-2-93
Date Developed: 9-3-14; 9-4-14
Dev. Method: Surge + Pump
Pump Type: WaterRa

Depth to Bottom (ft.): ~~18.25~~ 20.85
Static Water Level Before (ft.): 18.25'
Static Water Level After (ft.): 18.3'*
Screen Length (ft.): 15' (9-24' bgs)
Specific Capacity:
Casing ID (in.): 2

Responsible Personnel: K. Jaikut
Drilling Co.:
Project Name: GW Sampling Sites 2, 3, Drum Removal Area
Project Number: 112G01813

Well very silted in; ended up replacing well after failed attempt by drillers to redevelop using pumps + freeze ro

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1415-1455	3'		18.25'					Surging only - pull up in 1' increments along saturated screened interval
1525				23.9	7.94	97.8	over range	Initiate pumping + surging
1533			18.85'	22.4	6.18	79.8	211	
1541				19.0	5.81	70.7	over range	
1549				18.4	5.78	79.0	↓	Very very turbid
1605				17.7	5.70	72.1	↓	
1615			18.75'	19.5	5.75	75.5	↓	
1630		↓	18.70'	18.1	5.77	72.0	↓	
1642	3'	45	18.65	17.1	5.65	69.2	↓	
9/3/14 1645	end day for the day							
1030	3'	600 ml	18.25	18.3	6.83	139.5	↓	600 ml purge, thereafter - using peristaltic pump
1035		1200 ml	18.40	15.6	6.58	94.1	↓	
1040		1800 ml		15.0	6.26	79.8	↓	
1045		2400	18.6	14.7	6.09	76.2	↓	
1050	↓	3000 ml	18.3	14.9	6.12	70.5	↓	
9/4/14								

* post tubing install

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW03-03S
Site: CED Site 03
Date Installed: 6-2-93
Date Developed: 9-3-14; 9-4-14
Dev. Method: Surge + pump
Pump Type: Waterra

Depth to Bottom (ft.): 20.85
Static Water Level Before (ft.): 18.25
Static Water Level After (ft.): 18.30 *
Screen Length (ft.): 15' (9-24' bgs)
Specific Capacity:
Casing ID (in.): 2

Responsible Personnel: K. Jaikut
Drilling Co.:
Project Name: Additional GW Sampling Site 3 CED Area
Project Number: 112601813

well very silted in. Ended up replacing well after failed attempt by drillers to redevelop using pump + tremie rods

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
9/4/14								
1055	3'	4400ml	18.25	16.1	5.82	77.5	OR	only pumping
1100		5400ml		15.1	5.87	79.0	OR	
1105		6400ml	18.25	15.0	5.65	77.7	884	
1110			us Env. arrives - new tubing		replacement	waterra	NR	
1115		7400ml	18.25	15.0	5.64	78.2	761	
1120		8200ml	18.25	15.4	5.72	73.2	598	OR = over range
1125		9100ml	18.25	15.6	5.62	78.1	386	
1130	↓	(2.4gals)	18.25	15.2	5.67	71.2	382	
	End dev - need new well or		took to clean out bottom					
	Some headway made but		sed thickness still ~3'					
	at end.							
	Cull from waterra 11:45-12			discuss logistics / progress noted, haile				

* post tubing install

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW03-035a
Site: CED Area Site 03
Date Installed: 10-10-14
Date Developed: 10-14-14
Dev. Method: Waterra - surge pump
Pump Type: Waterra / proactive pump

Depth to Bottom (ft.): 27.00
Static Water Level Before (ft.): 19.80
Static Water Level After (ft.): 23.40
Screen Length (ft.): 15-25 (10')
Specific Capacity:
Casing ID (in.): 1.5 in

Responsible Personnel: Walt Parsa
Drilling Co.: TDS Drilling
Project Name: CED Area 5 site 03
Project Number: 11260 1813

Replacement well for MW03-035

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µs/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0952	Start surge		19.80	on well	→	→	→	Initial, no odor
0952	Finish surge		on well	→	→	→	→	
1002	Start pump & surge			→	→	→	→	
1003			21.70	23.52	6.90	164	>999	Brown water
1013			21.10	17.98	6.15	169	>999	
1023			21.20	17.36	5.82	170	>999	
1033			21.20	17.45	5.76	170	>999	
1043			21.20	17.56	5.70	170	>999	
1053			21.20	17.68	5.67	171	>999	
1103			21.20	16.86	5.56	170	>999	
1113			21.20	16.89	5.22	170	>999	
1123			21.20	16.84	5.41	171	>999	
1133			21.20	16.59	5.44	169	>999	
1143			21.20	17.14	5.37	170	>999	
1153			21.20	16.32	5.37	173	425	Cloudy water
1203			21.20	16.30	5.27	179	461	
1213			21.20	15.91	5.40	182	54.6	Slightly Cloudy

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

Well: MW03-03sa
Site: CED Area
Date Installed: 10-10-14
Date Developed: 10-14-14
Dev. Method: Waterra
Pump Type: Waterra

Depth to Bottom (ft.): 27.00
Static Water Level Before (ft.): 19.80
Static Water Level After (ft.): 22.40
Screen Length (ft.): 15-25
Specific Capacity:
Casing ID (in.): 1.5 in

Responsible Personnel: Walt Pryor
Drilling Co.: TDS Drilling
Project Name: CED Area
Project Number: 112601813

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1223			21.20	16.00	5.35	179	80.3	Slighty Cloudy
1233			21.20	16.06	5.36	178	50.0	
1247	Start peristaltic pump			15.74	5.41	179	313	Cloudy
1254				15.78	5.35	177	49.2	
1308			21.20	15.37	5.33	181	18.5	Slighty Cloudy
1318	= Stop pump had to dump drums							
1421	Start peristaltic pump again							
1422			23.40	16.13	5.34	183	4.92	Clean
1432			23.40	14.92	5.31	182	3.68	
1442			23.40	14.82	4.97	182	1.59	
1452		140 gal	23.40	14.95	4.89	183	1.93	

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Page 1 of 1

Well: MW03-045 | Depth to Bottom (ft.): 26.50' btpvc | Responsible Personnel: P. Seward
Site: Site 3 CED Area | Static Water Level Before (ft.): 19.54 | Drilling Co.:
Date Installed: 5-26-93 | Static Water Level After (ft.): 20.45 | Project Name: Site 3 CED Area (Additional GW Sampling)
Date Developed: 9-4-14 | Screen Length (ft.): 10-25 = 15' | Project Number: 112601813
Dev. Method: waterra - surge + pump | Specific Capacity:
Pump Type: waterra / Proactive pump | Casing ID (in.): 2"

static wl = 19.54 TD = 26.50 removed tubing from well (Instr. grnp)

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µs/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1035	began surging well (waterra pump w/ 2 ck valves)							
1120	began well developing w/waterra - moving check valve up and down length of saturated screen							
1130			19.75	15.5	4.87	75.8	51.4	clear - colorless 1500 ms/m
~~1140~~ 1145			19.75	15.4	5.03	76.9	5.09	" " 1500 ms/m
1165			19.75	16.1	5.27	80.3	10.2	" "
1205			19.80	16.0	5.30	79.2	9.59	
1215			19.80	16.4	5.49	79.7	12.5	
	stopped purging							
1330	resumed purging with waterra + check valve -							
1340			19.75	16.0	4.78	77.9	9.21	clear - colorless 1450 ms/m
1350		~20	19.75	16.7	5.36	85.3	8.72	" "
1405	resumed well development using proactive pump - starting @ midpt of sat. screen ~ 7000 ms/m in							
1410			20.45	13.4	5.53	77.1	6.88	clear - colorless ~ 7000 ms/m
1420			20.45	13.6	5.41	82.7	6.21	" " ~ 7000 ms/m
1425		~45	20.45	13.7	5.40	77.1	6.42	" " ~ 7000 ms/m

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

RE

Well: MW02-05S
Site: CED Site 3
Date Installed: 5-26-93
Date Developed: 9-4-14
Dev. Method: Surge + Pump
Pump Type: WaTerra / Proactive Pump

Depth to Bottom (ft.): 28.03'
Static Water Level Before (ft.): 20.76
Static Water Level After (ft.): 20.76
Screen Length (ft.): 15' (11-26' bgs)
Specific Capacity:
Casing ID (in.): 2

Responsible Personnel: K Jaikut
Drilling Co.:
Project Name: CED-GW sampling Sites 2, 3, drum removal area
Project Number: 112G01813

TD = 28.03' btoc Screen 11-26' bgs @ end too ✓ Along roadway between Site 02 & Site 03

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
9/4/14								
1350-			20.76					Surging only - move fr up in 1' increments
1505			↓					
1515			20.76	14.6	5.86	55.8	212	Surge + pump from bottom
1523		4 gal		14.4	5.51	53.6	90.4	Move fr up in increments
1531		9"		14.3	5.47	55.1	45.2	@ ~1-1.5'
1539		13"		14.6	5.53	54.6	25.1	
1547		18"	20.76	15.7	5.59	54.8	14.6	
1555		23"		14.5	5.53	54.9	3.53	
1603		28"		14.6	5.51	55.3	4.35	
1614		33"	20.76	14.9	5.52	54.1	2.13	
1623		38"		16.3	5.56	50.2	2.71	Moving fr down from top of sat. screen
1635		43"		14.4	5.53	51.7	2.94	
1645		48"	20.76	15.3	5.58	50.8	3.36	
1653		53"		14.5	5.56	52.7	3.88	
1701		58"		14.4	5.55	52.9	9.11	
1709		63"	20.76	13.9	5.52	53.6	19.1	
1720		68"		13.8	5.51	52.9	25.7	at bottom

Tetra Tech

MONITORING WELL RE DEVELOPMENT RECORD

Well: MW03-058
Site: CED Site 3
Date Installed: 5-26-93
Date Developed: 9-4-14; 9-5-14
Dev. Method: Surge + pump
Pump Type: WaTerra / Proactive pump
Depth to Bottom (ft.): 28.03'
Static Water Level Before (ft.): 20.76
Static Water Level After (ft.): 20.76
Screen Length (ft.): 15' (11-26' bop)
Specific Capacity:
Casing ID (in.): 2
Responsible Personnel: K. Jaikut
Drilling Co.:
Project Name: Site 3 CED Area (Additional GW Sampling)
Project Number: 112601813

Along roadway btwn Site 2 and Site 3

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1000			20.8				1.70	Proactive Pump in use
1100		15	20.8	16.4	6.12	59.0	~~7.95~~	Pump 2' off bottom
1105		20		15.8	5.90	57.9	1.59	~~orday~~
								Pull up 2' + pump
1110		35	20.76	15.6	5.71	50.9	3.16	
1115		40	20.76	14.8	5.70	50.6	0.76	
1120		45	20.76	15.3	5.73	51.1	1.50	Pull up 2' + pump
1125		50	20.76	14.7	5.74	50.6	1.18	
End dev.		removed 118 gals overall						

9/5/14 ↓

Tetra Tech

MONITORING WELL RE DEVELOPMENT RECORD

Well: MW03-15S
Site: CED Area - Drum Removal Area
Date Installed: 2/12/14
Date Developed: 9/12/14
Dev. Method: Pump + Surge
Pump Type: Wylern / Proactive Pump
Depth to Bottom (ft.): 26.08 / 26.08
Static Water Level Before (ft.): 23.27
Static Water Level After (ft.): 23.22
Screen Length (ft.): 10 (13-23 bgs)
Specific Capacity: —
Casing ID (in.): 1.5
Responsible Personnel: B. Berinyer
Drilling Co.: —
Project Name: CED Area, Site 3 - TPH Delineation + GW Sampling
Project Number: 112G01813

Wells originally (dev.) pumped until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1035	~~0935~~	Start	Sizing well						Bottom
1045	~~0945~~								up 1'
~~1005~~	1055	Finish	Sizing well						up 1'
	1110	Start	Pumping	well - Water	level is	dropping	quick, slight	Flow	
	1130			23.65	14.8	6.00	72.4	536	Cloudy / Turbid / Gray	Bottom
	1140			23.74	14.6	5.98	74.5	624	" "	up 1'
	1150			23.81	14.7	5.99	76.7	465	↓	up 1'
	1200		≈ 10	24.10	14.4	6.03	77.9	Offscale	↓	Bottom
	1210			24.04	13.8	5.78	73.2	218	Cloudy	" "
	1220			23.98	13.9	5.87	75.4	541	Cloudy / Turbid	up 1'
	1230			24.04	13.3	5.74	73.1	49.5	little cloudy / ~~Clear~~ Colorless	" "
	1240		≈ 20	24.10	13.3	5.72	72.5	46.9	" "	" "
	1250			24.14	13.3	5.75	72.9	46.7	↓ - Decrease Flow	" "
	1300			23.31	14.6	5.71	70.7	266	Cloudy - increase Flow	
	1310			24.08	14.2	5.72	71.3	32.3	little cloudy / colorless	
	1315			24.12	14.4	5.72	70.9	37.1	" "	
	1320		≈ 35	24.13	14.2	5.73	70.5	45.7	↓	
	Switch	to Pro-active	pump.							

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MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW03-155
Site: CED Area - Down Range Area
Date Installed: 2/12/14
Date Developed: 9/12/14
Dev. Method: Pump + Surge
Pump Type: Hydra / Proactive Pump
Depth to Bottom (ft.): 26.08
Static Water Level Before (ft.): 23.22
Static Water Level After (ft.): 23.22
Screen Length (ft.): 10 (13-23' bgs)
Specific Capacity: -
Casing ID (in.): 1.5
Responsible Personnel: B. Gaynor
Drilling Co.:
Project Name: CED Area - TPH delineation + GW Sampling
Project Number: 112G0813

well originally developed after installation - pumped until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1330	Start pump - water		Flow [illegible]	Stops in	5-10	Seconds		
	Turn off, let sit for		Few seconds	and water	flows	again for	5-10	sec.
	Repeat	process						
1345		≈40	Hitting pump	13.4	5.74	72.3	9.85	Clear/colorless
1400		≈45 gallons	↓	13.6	5.71	74.6	7.16	

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW03-15I
Site: CED Area Drum Removal Area
Date Installed: 2-12-14
Date Developed: 9-[redacted]15-14
Dev. Method: Pump & Surge
Pump Type: Wyhan / Piractive Pump
Depth to Bottom (ft.): 58.30
Static Water Level Before (ft.): 23.58
Static Water Level After (ft.): 23.60
Screen Length (ft.): 10' (45-55' bgs)
Specific Capacity:
Casing ID (in.): 1.5
Responsible Personnel: Walt Payton
Drilling Co.:
Project Name: CED Area Site 3 (Additional Soil Sampling - Drum Removal Area)
Project Number: 112G01813

well developed initially after installation pumped water until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1022			23.58	Start pump & Surge on well					Bottom
1122				Finish Surge on well →					up
1130			Start pump and Surge →						up
1140			23.60		7.25	232.2	>999	Brown water	Bottom
1150			23.60		6.82	230.5	>999		up
1200		↓	23.60		6.13	232.1	>999		up
1210		25 gal	23.60		5.91	232.6	>999		Bottom
1215		↓	23.60		5.86	228.1	767		up
1220		40 gal	23.60		5.85	228.9	570		up
1225		↓	23.60		5.87	228.5	339		Bottom
1230		55 gal			5.86	228.5	284		up
1240		↓			5.87	228.0	133		up
1245		↓			5.87	228.2	109		Bottom
1250		70 gal			5.86	227.6	84.4	slightly cloudy	up
1255		↓			5.87	228.2	73.4		up
1300		↓			5.86	227.9	71.6		"
1305		90 gal			5.86	227.1	72.3	↓	"
1315		~~Switch~~	Switch to piractive pump		6.22	232.1	167	Cloudy	Bottom

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW03-15I
Site: CED Area - Dam Removal
Date Installed: 2-12-14
Date Developed: 9-15-14
Dev. Method: Pump & Surge
Pump Type: Typhoon / Proactive Pump
Depth to Bottom (ft.): 58.30
Static Water Level Before (ft.): 23.58
Static Water Level After (ft.): 23.60
Screen Length (ft.): 10' (45-55' bgs)
Specific Capacity:
Casing ID (in.): 1.5
Responsible Personnel: Walt Ryon
Drilling Co.: -
Project Name: CED Area Site 3 (Additional GW Sampling - Drum Removal Area)
Project Number: 112G01813

Well originally developed after installation - pumped until water visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1330		↓	23.60		5.97	228.0	10.6	Clear water no odor	up
1335		↓	↓		5.97	227.2	5.64	↓	up
1340		130 gal	↓		5.96	227.7	4.23	↓	"
1400			Finish well development						

Tetra Tech

RE- MONITORING WELL DEVELOPMENT RECORD

Well: MW03-16S
Site: CED Area - Drum Removal Area
Date Installed: 2/12/14
Date Developed: 03/12/14
Dev. Method: Pump + Surge
Pump Type: Wyatt / Proactive pump

Depth to Bottom (ft.): 24.43 / 24.43
Static Water Level Before (ft.): 21.52
Static Water Level After (ft.): 21.52
Screen Length (ft.): 10 (11.5-21.5' bgs)
Specific Capacity: -
Casing ID (in.): 1.5

Responsible Personnel: B. Gerdzer
Drilling Co.: —
Project Name: CED Area, Site 3 - TPH Delineation + GW Sampling
Project Number: 112G-01813 Drum Removal Area

well orginally developed after installation - pumped until water visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units uS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0645	- Start	Surging well						Start at bottom, move up 1'
0715	- Start	Pumping well						every 10 minutes
0730			21.70	13.0	6.03	89.7	688	Brown / Turbid — Bottom
0740			21.70	13.1	5.75	85.4	651	" " — up 1'
0750			21.70	13.2	5.81	84.9	off Scale	— up 1'
0800			" "	13.1	5.79	84.9	610	— Bottom
0810			" "	13.1	5.80	84.3	447	— ~~up 1'~~ up 1.5
0820				13.3	5.79	85.0	139	Cloudy — " "
0830		≈ 40	↓	13.2	5.81	84.6	119	" " — " "
0840			21.50	13.1	5.78	84.9	209	↓ - Increased Flow
0850		≈ 45	21.60	13.3	5.83	85.4	461	Brown / Turbid - Dense Flow
0900			21.50	13.2	5.79	84.7	302	" "
0910			21.50	13.9	5.81	85.3	158	Cloudy
0920		≈ 50	" "	14.5	5.82	85.2	126	" "
0930		≈ 51	↓	14.6	5.81	84.9	125	" "
0940	- Switch	to Proactive	Pump - Start	Pump at	0940			
0950			Hit top of pump	13.1	5.77	85.2	8.83	Clear / Colorless — Bottom
1000			" "	13.1	5.80	85.4	1.01	" " — up 1'
1010		≈ 90 gallons		13.1	5.79	85.7	0.60	↓ — up 6"

Development Complete - reach <5 NTUs

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

RE

Well: MW03-16I
Site: CED Area - Drum Removal Area
Date Installed: ~2/12/14
Date Developed: 09/11/14 / 10/14/14
Dev. Method: Pump + Surge
Pump Type: Waterra / Proactive Pump

Depth to Bottom (ft.): 57.81 / 57.81
Static Water Level Before (ft.): 21.40
Static Water Level After (ft.): 21.42
Screen Length (ft.): 10 (45-55' bgs)
Specific Capacity: -
Casing ID (in.): 1.5

Responsible Personnel: B. Geringer
Drilling Co.: -
Project Name: CED Area, Site 3 - TPH delineation + GW Sampling
Project Number: 112G01813

Well originally developed after installation - water pumped until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
0945	Started	to Surge	well						Bottom
0950									up 1'
1000									up 1'
1010									up 1'
1020									up 1'
1030									up 1'
1040									up 1'
1050		↓							up 1'
1100	Start	Pumping							up 1'
~~1102~~ 1110			33.40	13.2	6.37	252.3	OFFscale	Gray / Silty	Bottom
1120		≈20	33.90	12.4	6.19	252.2	" "	" "	up 1'
1130			24.10	12.6	6.20	280.1	" "		up 1'
1140		≈30	22.50	13.9	6.23	238.0	" "		up 1'
1150			22.50	14.4	6.27	239.9	" "		up 1'
1200		≈40	23.20	13.3	6.19	247.9	" "		up 1'
1210			23.00	13.9	6.26	237.5	" "		up 1'
1220		≈50	23.00	13.8	6.27	236.4	" "		up 1'
1230			23.00	13.7	0.25	237.1	" "	↓	up 1'

Tetra Tech

MONITORING WELL RE DEVELOPMENT RECORD

Well: MW03-16I
Site: CED Area - Drum Removal Area
Date Installed: 2/12/14
Date Developed: 9/4/14; 10/14/14
Dev. Method: Pump + Surge
Pump Type: Waterra / Proactive Pump
Depth to Bottom (ft.): 57.81
Static Water Level Before (ft.): 21.40
Static Water Level After (ft.):
Screen Length (ft.): 10 (45.55' bgs)
Specific Capacity: –
Casing ID (in.): 1.5
Responsible Personnel: B. Grange
Drilling Co.: –
Project Name: CED Area, Site 3 - TPH Delineation + GW Sampling
Project Number: 112G01813

Well originally developed after installation - water pumped until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1300	Resume	pumping							Bottom
1310		≈65	27.35	13.5	6.17	248.5	off Scale	Silty / Grey	1' up
1320		≈75	28.10	12.3	6.24	251.0	461	Cloudy	1' up
1330		≈85	23.70	13.7	6.28	241.2	583	" "	2' up
1340		≈95	31.20	12.7	6.24	248.7	336	↓	Same
1350	Switch to	Pro-Active ≈105	Pump ~~3.62~~	12.9	6.26	249.2	421	↓	↓
1400	~ Start	Pump	31.73	12.4	6.22	248.9	125	Clear / Colorless	Bottom
1410			↓	↓	↓	↓	↓	↓	1' up
1420		≈130	31.85	12.3	6.19	251.3	7.20		1' up
1430			31.92	12.3	6.18	253.2	3.50		1' up
1440			31.80	12.3	6.20	253.5	4.58		1' up
1450		≈160	31.72	12.3	6.21	247.5	3.73		1' up
1500		≈170	31.64	12.3	6.20	248.4	2.93	↓	Same
		Turbidity	<5 NTU's -	Development	Complete				

- well Dev w/ proactive pump — 2nd time @ MW03-16I

TETRA TECH, INC.

10-14-14
Walt P.

PURGE DATA SHEET – "LOW STRESS" GROUNDWATER

Site Name: NCBC Davisville, N. Kingstown, RI, CED Area
Sample ID: MW03-16I-

Tetra Tech Project No. 112G01813 Task 0000.2123 WE01 Page 2
QC: (If applicable)

Clock Time 24hr	Water Depth (ft below MP)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 µS/cm	~~DO~~ mg/L	~~pH~~ (S.U.)	~~ORP~~ mV	Turbidity (NTU)	Comments
1308					11.82	258				80.0	
1310					11.83	259				10.4	
1313					11.75	259				4.13	
1322					11.74	258				4.50	
1327					11.76	257				4.21	
1332					11.78	257				1.18	
1342					11.79	255				7.42	
1347					11.79	255				1.77	
1352					11.92	256				1.50	
1402					11.81	256				1.11	
1412					11.81	255				1.17	
1417					11.77	255				0.76	
							Turb. < 5 NTUs - development complete				
	Note - Additional development required when turbidity reading during sampling found to be too high. Reading of 80+ NTUs precipitated need for additional well development										

Note - Additional development required when turbidity reading during sampling found to be too high. Reading of 80+ NTUs precipitated need for additional well development

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW03-17S
Site: CED Area - Drum Removal Area
Date Installed: 2/12/14
Date Developed: 9/10/14 + 9/11/14
Dev. Method: Pump + Surge
Pump Type: ~~Waterra~~ Hand pumping Proactive & Waterra
Depth to Bottom (ft.): 24.48 / 24.48
Static Water Level Before (ft.): 21.58
Static Water Level After (ft.): 21.65
Screen Length (ft.): 10 (11.5-21.5' bgs)
Specific Capacity: -
Casing ID (in.): 1.5
Responsible Personnel: B. Gerings
Drilling Co.: -
Project Name: CED Area Site 3, TPH Delineation & GW Sampling in Drum Removal Area
Project Number: 112G01813

Well originally developed after installation - water pumped until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ~~uS/cm~~)	Turbidity (NTU)	Remarks (odor, color, etc.)
1315	- Started to Surge	well						Bottom up 1'
~~1325~~								up 1' Bottom
1335	- Finished	Surge						
1345	- Started	to pump						
1352	- Went	Dry ~20						
1400	- Started	to pump -	Water at 21.85' -					
1405	- Removed	1' silt	- goes dry -	Switch	to	proactive	pump	
1410	- Start	pump -	dry after a	few seconds	- Switch	back to	Foot valve -	will pump by hand.
	- Pump	by hand	over 5 minutes					
1430		~ 3.0	23.35	16.6	6.28	146.0	648	Silty / Brown
1500		~4.0	23.26	16.8	6.36	155.3	Off Scale	~~OFF S~~ " "
1530		~6.0	23.20	16.9	5.62	145.6	141	Cloudy
1600		~8.0	23.20	16.7	5.74	147.6	OFF Scale	Silty / Brown
1635 ~~1630~~		~10.0	23.28	16.0	5.65	144.6	225	Cloudy
1705 ~~1700~~		~12.0	23.40	16.3	5.78	139.3	Off Scale	Silty Brown
1735 ~~1730~~		~14.0	23.47	16.1	5.78	139.5	255	Cloudy
1805 ~~1800~~		~ 16.0	23.50	16.4	5.74	138.7	612	↓

Tetra Tech

RE-MONITORING WELL DEVELOPMENT RECORD

Well: MW03-17S
Site: CED Area - Drum Removal Area
Date Installed: 2/12/14
Date Developed: 9/10/14 & 9/11/14
Dev. Method: Pump & Surge
Pump Type: Waterra / Hand

Depth to Bottom (ft.): 24.48/24.48
Static Water Level Before (ft.): 21.58
Static Water Level After (ft.): 21.65
Screen Length (ft.): 10 (11.5-21.5' bgs)
Specific Capacity:
Casing ID (in.): 1.5

Responsible Personnel: B. Geiger
Drilling Co.:
Project Name: CED Area Site 3 - TPH Delineation & GW Study in Drum Removal Area
Project Number: 112G0263

well originally developed after installation - water pumped until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0845	- Start	Pump -	Able to use	system, just	Pumps slow			Bottom
0900		≥ 17.0	Below Set value	16.1	6.07	146.4	28.4	little cloudy
0915		≥ 18.0	" "	15.7	5.98	144.8	5.12	Clear/colorless
0930		≥ 19.5	↓	16.2	5.91	145.7	4.74	" "
		Reach	<5 NTU's -	Finish	development			

Tetra Tech

MONITORING WELL DEVELOPMENT RECORD

RE-
↳ Post Development

Well: MW03-17I
Site: CED Area - Drum Removal Area
Date Installed: 2/12/14
Date Developed: 9/10 + 9/11/14
Dev. Method: Pump + Surge
Pump Type: Wyatt / Pro. Active Pump

Depth to Bottom (ft.): 57.54 / 57.56
Static Water Level Before (ft.): 21.74
Static Water Level After (ft.): 21.76
Screen Length (ft.): 10 (45-55' bgs)
Specific Capacity: —
Casing ID (in.): 1.5

Responsible Personnel: B. Gariazzo
Drilling Co.: —
Project Name: CED Area Site 3, TPH Delineation and GW Sampling in Drum Removal Area
Project Number: 112G01813

Well originally developed after installation - water pumped until visually clean

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1410	- Start to	Surge Well							Bottom
1420		↓							up 1'
1430									up 1'
1440									up 1'
1450									up 1'
1500									up 1'
1600									up 1'
1610		↓							up 1'
1620	Start Pumping								Bottom
1630		≈ 20	23.50	12.3	5.79	188.4	OFF Scale	Silty / Gray	Bottom
1640		≈ 35	23.20	12.1	5.63	185.4	" "	" "	Bottom
1650		≈ 45	22.90	12.0	5.50	185.9	330	Silty / Cloudy	up 1'
1700		≈ 60	23.10	12.4	5.61	187.2	593	" "	up 1'
1710		≈ 70	23.18	12.4	5.55	184.8	276	↓	up 1'
1720		≈ 80	23.08	12.4	5.51	184.6	317	↓	up 1'
1730		≈ 90	23.10	13.8	5.50	184.3	OFF Scale	Silty / Gray	up 1'
1740		≈ 100	23.12	13.6	5.63	183.9	546	" "	up 1'
1750		≈ 110	23.18	12.9	5.55	184.4	571	↓	up 1'

Tetra Tech

MONITORING WELL RE-DEVELOPMENT RECORD

Well: MW03-17I
Site: CED Area Drum Removal Area
Date Installed: 2/12/14
Date Developed: ~~9/9~~ 9/10 + 9/11/14
Dev. Method: Pump + Surge
Pump Type: Waterra / pre-Active pump
Depth to Bottom (ft.): ~~57.54~~/57.56
Static Water Level Before (ft.): 21.74
Static Water Level After (ft.): 21.76
Screen Length (ft.): 10 (45-55' bgs)
Specific Capacity: –
Casing ID (in.): 1.5
Responsible Personnel: B. Geringer
Drilling Co.: –
Project Name: CED Area - Site 3, TPH delineation + GW Sampling
Project Number: 112G01813

Well originally developed after installation - water pumped until visually clear

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ~~uS/cm~~)	Turbidity (NTU)	Remarks (odor, color, etc.)	
1800		≈ 120	~~22~~ 21.51	12.7	5.52		136	little turbid	up 1'
1810		≈ 130	21.53	12.7	5.51	184.2	159	" "	up 1'
9/11/14 0645	- Start pumping								Bottom
0705		≈ 160	22.45	12.3	5.53	183.3	680	Cloudy / Turbid / Gray	" "
0715			22.10	12.1	5.56	183.6	554	" "	up 1'
0725			22.15	12.1	5.49	183.7	196	Cloudy	up 1'
0735		≈ 170	22.18	12.1	5.50	183.9	302	" "	up 1'
0745			22.18	12.2	5.52	183.6	585	Cloudy / Turbid	up 1'
0755			22.18	12.1	5.49	184.0	230	" "	up 1'
0805		≈ 185	22.18	12.2	5.51	183.4	299	" "	Same depth
- Switch to pre-active pump									
0810	- Started	pumping	2				~~4.40~~		Bottom
0820			23.28	12.1	~~5.53~~	185.2	4.40	Clear / colorless	↓
0825			23.28	12.2	5.60	184.6	1.76	" "	up 1'
0830			23.28	12.1	5.57	183.9	2.49		up 1'
0835			23.28	12.1	5.58	184.5	2.77		up 1'
0840 ~~0840~~			23.28	12.3	5.61	185.1	4.35		up 1'
0845 ~~0845~~		≈ 225	23.28	12.1	5.60	184.6	2.32		Same depth

Development Complete, <5 NTU>

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HANIBAL TECHNOLOGY

Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson / Lee Ann Sinagoga
601 Andersen Dr } Tetra Tech Inc
Pittsburgh PA 15220 }
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: Ent 112601813 0000.2123 WE01
Site Name: Fmr NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): KJalkut W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC	TPH-GRO	TPH-DRO	NAPHTHALENE	METALS	SVOC, PESTICIDES, PCBs	
	TB01-092914	9/29	1000	G	QC	4	-	-	-	2	2	1	1	-	1	
✓	MW03-02S-NWG-092914	9/29	1340	G	GW	4	4	-	1	2	2	2	2	1	20	
✓	MW03-02S-NWG-092914-F	9/29	1340	G	GW	-	-	-	1	-	-	-	-	1	-	
✓	MW03-15I-NWG-092914	9/29	1407	G	GW	12	15	-	2	6	6	6	-	2	9	
✓	MW03-15I-NWG-092914-F	9/29	1407	G	GW	-	-	-	2	-	-	-	-	2	-	

KJalkut 9/29/14

Notes - Samples designated w/the "F" were filtered in the field

List preservative code below:

2	2	-	-	4	-		

QA/QC Reporting Notes: Refer to lab subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
		9.30.14	0900	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
Tetra Tech Inc
Old Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Jalkut W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	GRO (TPH)	DRO (TPH)	NAPHTHALENE	METALS	SVOC, PESTICIDES, PCB's			
	TB02-093014	9/30	0900	G	QC	4	–	–	–	2	2	–	–	–	–			Trip #2
✓	MW03-04S-NWG-093014	9/30	1123	G	GW	4	2	–	1	2	2	2	2	1	–			
✓	MW03-04S-NWG-093014-F	9/30	~~1230~~ 1123	G	GW	–	–	–	1					1				
✓	FD01-093014	9/30	0000	G	GW	4	5	–	1	2	2	2	–	1	3			D1
✓	FD01-093014-F	9/30	0000	G	GW	–	–	–	1	–	–	–	–	1	–			D1-F
✓	MW03-17S-NWG-093014	9/30	1230	G	GW	4	5	–	1	2	2	2	–	1	3			D1
✓	MW03-17S-NWG-093014-F	9/30	1230	G	GW	–	–	–	1	–	–	–	–	1	–			D1-F

Note: "-F" denotes sample was filtered in the field

List preservative code below:
2 2 – – 4 – | QA/QC Reporting Notes: Refer to Laboratory Contract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Pryor	K. Jalkut	10-1-14	0715	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc
661 Andersen Dr
Pittsburgh PA
Telephone #: 412 9217090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Talkut W Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 2 – 4 – –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs	GRO (TPH) MTBE-MPH.	DRO (TPH) C-9 to C-40	METALS	NAPHTHALENE	SVOC PESTICIDE PCB	
	TB03-100114	10/1	0800	G	QC	4	–	–	–	2	2	1	1	1	1	
	RB01-100114	10/1	0830	G	QC	4	5		1	2	2	2	1	–	3	
	RB01-100114-F	10/1	0830	G	QC	–	–	–	1	–	–	–	1	–	–	
✓	MW03-05S-NWG-100114	10/1	1056	G	GW	4	4	–	1	2	2	2	1	2	–	
✓	MW03-05S-NWG-100114-F	10/1	1056	G	GW	–	–	–	1	–	–	–	1	–	–	
✓	MW03-15S-NWG-100114	10/1	1433 1230	G	GW	4	5	–	1	2	2	2	1	–	3	
✓	MW03-15S-NWG-100114-F	10/1	1433 1200	G	GW	–	–	–	1	–	–	–	1	–	–	
✓	MW02-08Sa-NWG-100114	10/1	1433	G	GW	4	4	–	1	2	2	2	1	2	–	
	Note- "-F" indicates sample was filtered in the field															
✓	MW02-08Sa-NWG-100114-F	10/1	1433	G	GW	–	–	–	1	–	–	–	1	–	–	

Ringed mxro bladder last used at MW03-17S on 9/30/14 ↓

Refer to Lab Subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10.1.14	1154	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc.
661 Anderson Dr
Pittsburgh PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor, C Fellows-Stanley

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 2 1 - 4 -

QA/QC Reporting Notes: Refer to lab subcontract

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC	TPH GRO (MTBE-NAPH.)	TPH DRO (C9-C40)	NAPHTHALENE	METALS	SVOC, PESTICIDES PCBs
	TB04-100214	10/2	0800	G	QC	4	-	-	-	2	2	-	-	-	-
✓	MW02-05S-NWG-100214	10/2	1128	G	GW	4	4	-	1	2	2	2	2	1	-
✓	MW02-05S-NWG-100214-F	10/2	1128	G	GW	-	-	-	1	-	-	-	-	1	-
✓	MW03-17I-NWG-100214	10/2	1148	G	GW	4	5	-	1	2	2	2	-	1	3
✓	MW03-17I-NWG-100214-F	10/2	1148	G	GW	-	-	-	1	-	-	-	-	1	-
✓	MW01-10S-NWG-100214	10/2	1455	G	GW	4	4	-	1	2	2	2	2	1	-
✓	MW01-10S-NWG-100214-F	10/2	1455	G	GW	-	-	-	1	-	-	-	-	1	-
✓	MW01-12S-NWG-100214	10/2	1521	G	GW	4	4	-	1	2	2	2	2	1	-
✓	MW01-12S-NWG-100214-F	10/2	1521	G	GW	-	-	-	1	-	-	-	-	1	-
	Note - "-F" denotes sample was filtered in the field														

K Jaukut 10/2/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10.2.14	7:30	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 2 – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC, TPH GRO (MTBE-NAPHTH)	VOC	TPH GRO (MTBE-NAPHTH)	TPH DRO (C9-C40)	METALS	NAPHTHALENE
	TB05-100314	10/3	0800	G	QC	3	–	–	–	3	–	–	–	–	–
✓	MW02-03S-NWG-100314	10/3	1050	G	GW	4	4	–	1	–	2	2	2	1	2
✓	MW02-03S-NWG-100314-F	10/3	1050	G	GW	–	–	–	1	–	–	–	–	1	–

Note: "F" denotes the sample was filtered in the field

Relinquished by: Walter Pryor 10-3-14 Time: 13:06
Received by: [signature] Date: 10-3-14 Time: ~~1615~~ 13:06
Temp°C: 4.2°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: RI DEM Tier I Laboratory Analysis

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 2 2 2 – – 4 –
	TB06-100614	10/6	0900	G	QC	3	–	–	–	
	MW02-4Sa-NWG-100614	10/6	1303	G	GW	4	4	1	1	
	MW02-4Sa-NWG-100614-F	10/6	1303	G	GW	–	–	–	1	
	MW03-16S-NWG-100614	10/6	1405	G	GW	4	5	–	1	
	MW03-16S-NWG-100614-F	10/6	1405	G	GW	–	–	–	1	

Analyses:
- VOCs, TPH-GRO (MTBE-NAPH.) — 3 | – | – | – | – | – | –
- VOCs — – | 2 | 2 | 2 | 2 | – | –
- GRO (TPH) (MTBE-NAPH.) — – | 2 | 2 | 2 | 2 | – | –
- DRO (TPH) (C9-C40) — – | 2 | 2 | 2 | 2 | 1 | –
- NAPHTHALENE — – | 2 | 2 | 2 | 2 | 1 | –
- METALS — 1 | – | – | – | – | 1 | 1
- SVOCs, PESTICIDES, PCBs — – | – | – | – | – | 1 | 3

Note: "-F" indicates the sample was filtered in the field
K Jalkut 10/6/14

QA/QC Reporting Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kaylee Jalkut / Kayl Jalkut		10/6/14	1630	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson (TetraTech)
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 920 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, IRED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor, K Talkut

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below:	Analyses: VOCs, TPH-GRO	VOCs	GRO (MTBE-NAPHTHALENE) TPH DRO	NAPHTHALENE	METALS	SVOCs, PESTICIDES, PCBs
										2 2 2 - - 4 -						
	TB07-100714	10/7	0830	G	QC	3	-	-	-		3	-	-	-	-	-
	RB02-100814	10/8	0900	G	QC	4	4	-	1		-	2	2	2	2	1
	RB02-100814-F	10/8	0900	G	QC	-	-	-	1		-	-	-	-	-	1
✓	MW02-09S-NWG-100814	10/8	0957	G	GW	4	4	-	1		-	2	2	2	2	1
✓	MW02-09S-NWG-100814-F	10/8	0957	G	GW	-	-	-	1		-	-	-	-	-	1
✓	MW02-11S-NWG-100814	10/8	1357	G	GW	4	4	-	1		-	2	2	2	2	1
✓	MW02-11S-NWG-100814-F	10/8	1357	G	GW	-	-	-	1		-	-	-	-	-	1

QA/QC Reporting Notes: Refer to lab subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Rinsate off 1 3/4" pump - last used @ 45a (MW02)

Note - "-F" denotes the sample was filtered in the field

Equipment 10/8/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
Wade		10-8-14	16:50	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/o Tetra Tech Inc
6161 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): C Fellows - Stanley K Jalkut W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 2 2 2 - - -	Analyses: VOCs, GRO (MTBE, NAPH)	VOCs	TPH - DRO (MTBE-NAPHTHALENE)	TPH DRO	NAPHTHALENE	METALS
	TB08-100914	10/9	0830	G	QC	3	-	-	-		3	1	-	1	1	1
✓	MW01-14S-NWG-100914	10/9	1105	G	GW	12	12	-	2		-	6	6	6	6	2
✓	MW01-14S-NWG-100914-F	10/9	1105	G	GW	-	-	-	2		-	~~6~~	~~6~~	-	-	2
	~~MW01~~															

QA/QC Reporting Notes:
Refer to lab QC volume
Refer to lab QC volume

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

L Jalkut 10/9/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
Wade R	[signature]	10/10/14	7:22	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

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Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 (1000, 2123 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor, K. Jolkut

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 2	2	2	1	—	—	4			Analyses: VOC, GRO (MTBE - NAPH.)	VOC	GRO(THD) - MTBE - NAPHTHALENE	DRO (TPH) (C9-C40)	NAPHTHALENE	METALS			
	TB09-101014	10/10/14	0800	G	QC	3	1	1	1										3	1	1	1	1	1			
✓	MW02-10S-NWG-101014	10/10/14	0950	G	GW	4	4	—	1											2	2	2	2	1			D1
✓	MW02-10S-NWG-101014-F	10/10/14	0950	G	GW	1	1	1	1										-	-	-	1	—	1			D1-F
✓	FD02-101014	10/10/14	0000	G	GW	4	4	1	1											2	2	2	2	1			
✓	FD02-101014-F	10/10/14	0000	G	GW	—	—	—	1										-	—	—	-	-	1			D2
																											D2-F

K Jolkut 10/10/14

Note - "-F" indicates sample was filtered in the field

QA/QC Reporting Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
		10-10-14	14:00	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Indicate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220

Telephone #: 412-921-7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01913 0000.2123 WEG1
Site Name: FMR ARBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 – – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

	Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	Analyses: TPH-GRO	TPH-DRO	Naphthalene	metals	SVOCs, Pest+PCBs
		TB10-102714	10-27-14	0700	G	QC	3	–	–	–	3	–	–	–	–	–
✓		MW01-13SA-NWG-102714	↓	1456	G	GW	4	4	–	1	2	2	2	2	1	–
✓		MW01-13SA-NWG-102714-F	↓	1456	G	GW	–	–	–	1	–	–	–	–	1	–
✓		MW03-16I-NWG-102814	10-28-14	1317	G	GW	4	5	–	1	2	2	2	–	1	3
✓		MW03-16I-NWG-102814-F	↓	1317	G	GW	–	–	–	1	2	2	2	–	1	3
✓		FD03-102814	↓	0000	G	GW	–	3	–	–	–	–	–	–	–	3

	Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	QA/QC Reporting Level	State-specific reporting standards:
		TB10-102714	10-27-14	0700	G	QC		
✓		MW01-13SA-NWG-102714	↓	1456	G	GW		
✓		MW01-13SA-NWG-102714-F	↓	1456	G	GW		'F' = Field Filtered
✓		MW03-16I-NWG-102814	10-28-14	1317	G	GW		D3
✓		MW03-16I-NWG-102814-F	↓	1317	G	GW		'F' = Field Filtered
✓		FD03-102814	↓	0000	G	GW		D3

☐ Level I ☐ Level II ☐ Level III ☐ Level IV ☐ Other _____

Notes - Samples designated w/the -F were filtered in the field.

Relinquished by:	Received by:	Date:	Time:	Temp°C
Matt Pr	[signature]	10-28-14	16:13	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Indicate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220
Telephone #: 412 921-7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123 WE01
Site Name: FMC NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Payton

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

List preservative code below: 2 - - 4

QA/QC Reporting Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards:
_____

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	Analyses: TPH-GRO	TPH-DRO	Naphthalene	Total metals	Notes
	TB11-102914	10-29-14	0700	G	QC	3	-	-	-	3	-	1	-	-	
✓	MW02-06sa-NWG-102914		0948	G	GW	4	4	-	1	2	2	2	2	1	
✓	MW02-06sa-NWG-102914-F		0948	G	GW	-	-	-	1	-	-	-	-	1	"F" = Field Filtered (DY)
✓	MW03-01sa-NWG-102914		1210	G	GW	4	4	-	1	2	2	2	2	1	
✓	MW03-01sa-NWG-102914-F		1210	G	GW	-	-	-	1	-	-	-	-	1	"F" = Field Filtered DY
✓	FD04-102914		0000	G	GW	4	4	-	1	2	2	2	2	1	(DY)
✓	FD04-102914-F		0000	G	GW	-	-	-	1	-	-	-	-	1	"F" Field Filtered (DY)
	Notes: Samples designated w/ the F were Filtered in the Field														

Relinquished by:	Received by:	Date:	Time:	Temp°C
Natta Pe		10-29-14	16:07	5.1c
				5.7c
				IR

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Ind icate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220
Telephone #: 412 921 7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813-0000 7123
Site Name: FMR NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Payon

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		List preservative code below: 2	2	-	-	4				Analyses: VOCs	TPH-GRO	TPH-DRO	Naph Halene	Metals	SVOCs/Pest PBS		
	TB12-103014	10-30-14	0700	G	QC	3	1	-	1	-									3	-	-	-	-	-		
	MW03-03SA-NWG-103014		1005	G	GW	12	12	-	2	1									6	6	6	6	2	-		
	MW03-03SA-NWG-103014-F		1005	G	GW	-	-	-	2	-									-	-	-	-	2	-		
	FB03-103014		1430	G	GW	4	6	-	1	-									2	2	2	2	1	2		
	FB03-103014-F		1430	G	GW	-	-	-	1	-									-	-	-	-	1	-		
	Notes	Samples	designated	w/	the	F	Were												Filtered	in	the	Field				

QA/QC Reporting Notes:
* MS/MSD *
"F" Field Filtered
"F" Field Filtered
Wait rinsed micro bladder pump tubing @ 16:I

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Set rinsate blank FB03-103014-B

Relinquished by:	Received by:	Date:	Time:	Temp°C
Matt R	K F	10-30-14	16:01	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd.*
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson/Lee Ann Sinagoga
c/o Tetra Tech
661 Andersen Dr
Pittsburgh, PA 15220
Telephone #: 412 921 7090
Project Mgr. S Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K. Jalkut P. Seward

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below:	Analyses: VOCs	Analyses: TPH GRO (MTBE-NAPH.)	QA/QC Reporting Notes:
	TB13-111914	11/19	1100	G	QC	4	–	–	–	2 2	2	2	
	MW02-035-NWG-111914	11/19	1250	G	GW	12	–	–	–		6	6	Lab QC volume; (D3)
	FD05-111914	11/19	0000	G	GW	4	–	–	–		2	2	(D3)

K Jalkut 11/19/14

*Note - Preliminary results needed for a Dec 9 meeting; replacement sample

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab's current

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kaylee Jalkut	KC	11/19/14	1427	2.1

☐ EDD Format _____
☐ E-mail to _____

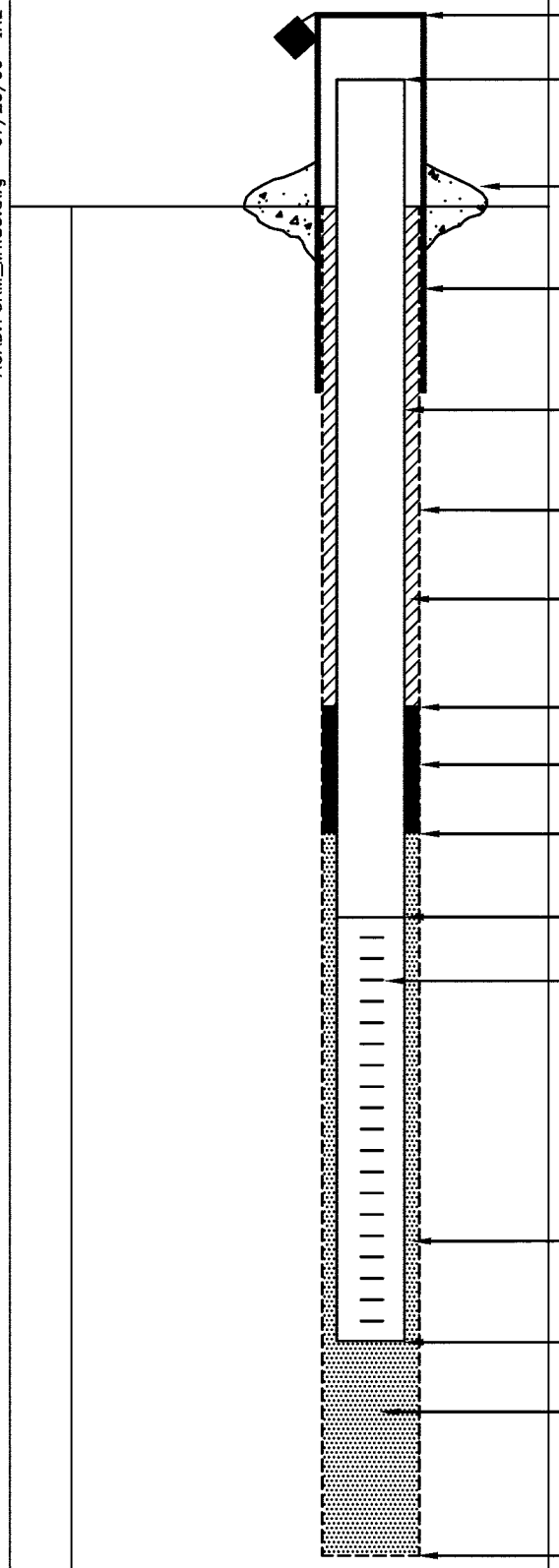
Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☒ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

WELL NO.: MW01-13Sa
(replacement well)

Tetra Tech

OVERBURDEN
MONITORING WELL SHEET
STICK-UP

PROJECT NCBC Davisville-CED Area	LOCATION N. Kingston, RI	DRILLER D. Newton/TDS, Inc.
PROJECT NO. 112G01813	BORING MW01-13Sa	DRILLING METHOD DPT
DATE BEGUN 10-8-14	DATE COMPLETED 10-8-14	
FIELD GEOLOGIST K. Jalkut		DEVELOPMENT METHOD Surge & Pump
GROUND ELEVATION	DATUM	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: / 2.80'

ELEVATION/HEIGHT OF TOP OF RISER PIPE: / 2.69'

TYPE OF SURFACE SEAL: Quickrete Concrete Mix

I.D. OF SURFACE CASING: 4 in
TYPE OF SURFACE CASING: Steel Guard Pipe

RISER PIPE I.D.: 1.5 in
TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 3.25 in below casing (steel)

TYPE OF BACKFILL: No. 2 Holliston Sand
(~10-18 US sieve size)

ELEVATION/DEPTH TOP OF SEAL: / 7'

TYPE OF SEAL: Medium Bentonite Chips

DEPTH TOP OF SAND PACK: 10'

ELEVATION/DEPTH TOP OF SCREEN: / 13.11'
(~13')

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 0.010 slots x 10'

I.D. OF SCREEN: 1.5 in ID (2.5 in OD)

TYPE OF SAND PACK: Pre-pack screen w/ 20-40 mesh silica sand; No. 2 sand (10-18 US sieve size) in annular space

ELEVATION/DEPTH BOTTOM OF SCREEN: / 23.11'
(~23')

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 23.11'
(~23')

BACKFILL MATERIAL BELOW SAND: N/A

ELEVATION/DEPTH OF HOLE: / 23.11'
(~23')

ACAD:FORM_MWSU.dwg 07/20/99 INL

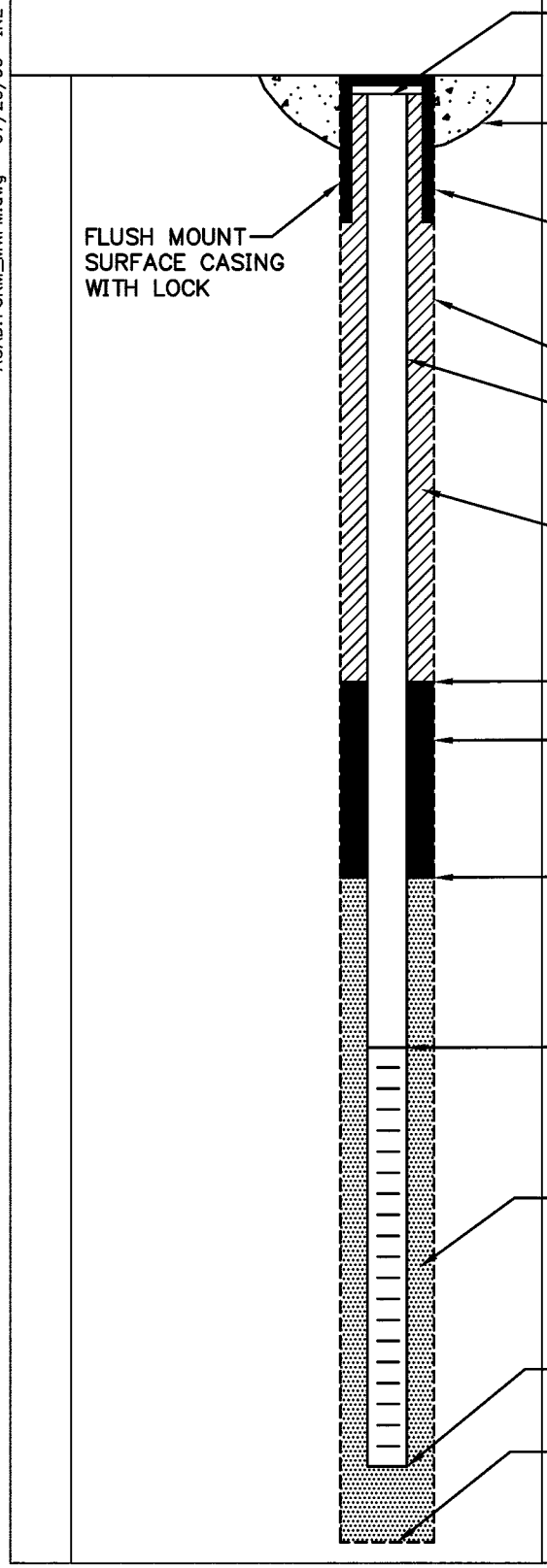
WELL NO.: MW02-06Sa
(replacement well)

Tetra Tech

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

PROJECT NCBC Davisville - CED Area	LOCATION N. Kingston, RI	DRILLER D. Newton/TDS, Inc.
PROJECT NO. 112G01813	BORING MW02-06Sa	DRILLING METHOD DPT
DATE BEGUN 10-9-14	DATE COMPLETED 10-10-14	
FIELD GEOLOGIST K. Jalkut		DEVELOPMENT METHOD Surge & Pump
GROUND ELEVATION	DATUM	

ACAD:FORM_MWFM.dwg 07/20/99 INL



ELEVATION TOP OF RISER: _____
DEPTH BELOW GROUND: -0.32'

TYPE OF SURFACE SEAL: Quikrete Concrete Mix

TYPE OF PROTECTIVE CASING: Flush mount

I.D. OF PROTECTIVE CASING: ~12 in

DIAMETER OF HOLE: 3.25 in below protective casing

TYPE OF RISER PIPE: Schedule 40 PVC

RISER PIPE I.D.: 1.5 in

TYPE OF BACKFILL/SEAL: No. 2 Holliston Sand (~10-18 US Sieve size)

ELEVATION/DEPTH TOP OF SEAL: / 10'

TYPE OF SEAL: Medium Bentonite Chips

ELEVATION/DEPTH TOP OF SAND: / 13'

ELEVATION/DEPTH TOP OF SCREEN: / 15.82'

TYPE OF SCREEN: Schedule 40 PVC (~16)

SLOT SIZE x LENGTH: 0.010 slots x 10'

TYPE OF SAND PACK: Pre-packed screen w/20-40 mesh silica sand; No. 2 sand (10-18 US sieve size) in annular space

DIAMETER OF HOLE IN BEDROCK: N/A

ELEVATION / DEPTH BOTTOM OF SCREEN: / 25.82'

ELEVATION / DEPTH BOTTOM OF SAND: / (~26')

ELEVATION/DEPTH BOTTOM OF HOLE: /

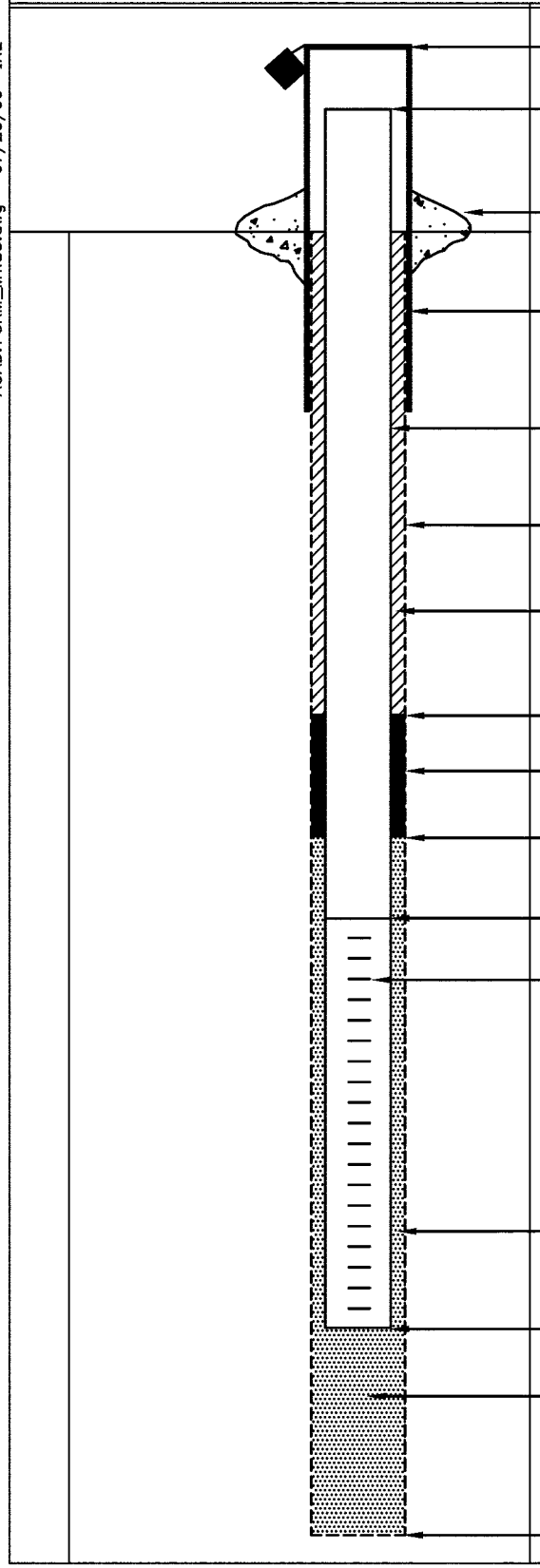
BACKFILL MATERIAL BELOW SAND: N/A

WELL NO.: MW03-01Sa
(replacement well)

Tetra Tech

OVERBURDEN
MONITORING WELL SHEET
STICK-UP

PROJECT NCBC Davisville-CED Area	LOCATION N. Kingston, RI	DRILLER D. Newton/TDS, Inc.
PROJECT NO. 112G01813	BORING MW03-01Sa	DRILLING METHOD DPT
DATE BEGUN 10-7-14	DATE COMPLETED 10-8-14	
FIELD GEOLOGIST K. Jalkut		DEVELOPMENT METHOD Surge & Pump
GROUND ELEVATION	DATUM	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: / 2.80'

ELEVATION/HEIGHT OF TOP OF RISER PIPE: / 2.60'

TYPE OF SURFACE SEAL: Quickrete Concrete Mix

I.D. OF SURFACE CASING: 4 in
TYPE OF SURFACE CASING: Steel Guard Pipe

RISER PIPE I.D.: 1.5 in
TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 3.25 in below casing (steel)

TYPE OF BACKFILL: No. 2 Holliston Sand
(~10-18 US sieve size)

ELEVATION/DEPTH TOP OF SEAL: / 7.50'

TYPE OF SEAL: Medium Bentonite Chips

DEPTH TOP OF SAND PACK: 12'

ELEVATION/DEPTH TOP OF SCREEN: / 14.15'
(~14')

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 0.010 slots x 10'

I.D. OF SCREEN: 1.5 in ID (2.5 in OD)

TYPE OF SAND PACK: Pre-pack screen w/ 20-40 mesh silica sand; No. 2 sand (10-18 US sieve size) in annular space

ELEVATION/DEPTH BOTTOM OF SCREEN: / 24.15'
(~24')

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 24.15'
(~24')

BACKFILL MATERIAL BELOW SAND: N/A

ELEVATION/DEPTH OF HOLE: / 24.15'
(~24')

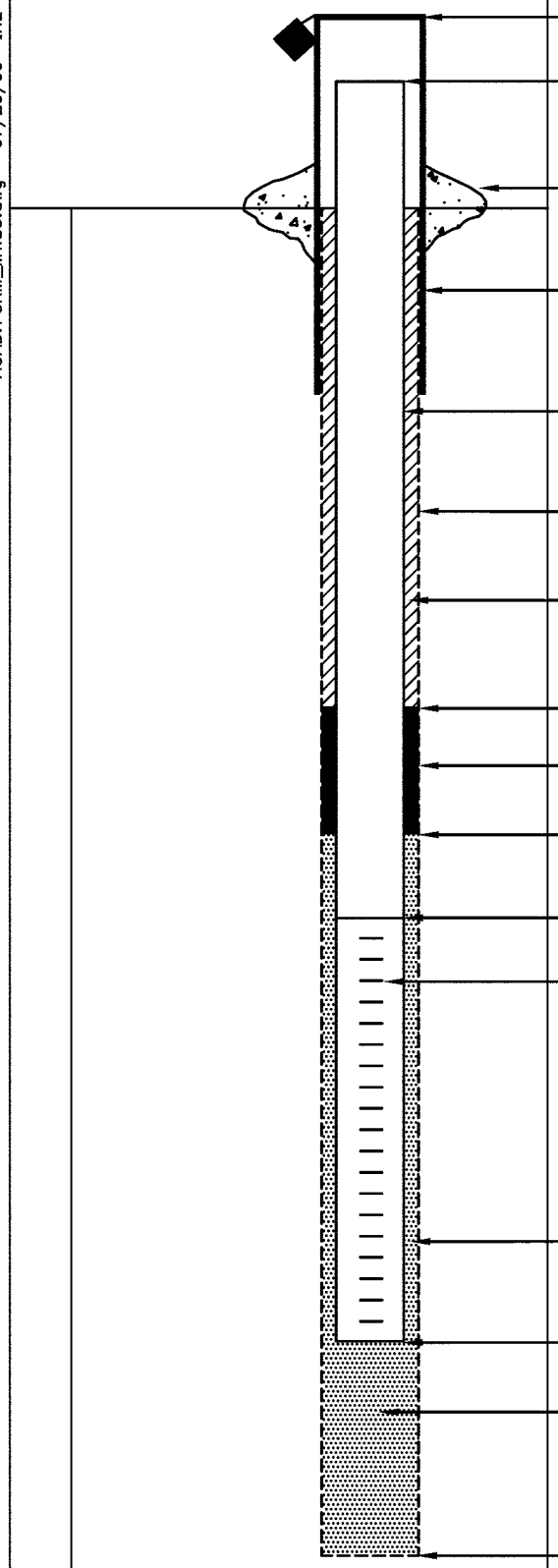
ACAD:FORM_MWSU.dwg 07/20/99 INL

WELL NO.: MW03-03Sa
(replacement well)

Tetra Tech

OVERBURDEN
MONITORING WELL SHEET
STICK-UP

PROJECT NCBC Davisville-CED Area	LOCATION N. Kingston, RI	DRILLER D. Newton/TDS, Inc.
PROJECT NO. 112G01813	BORING MW03-03Sa	DRILLING METHOD DPT
DATE BEGUN 10-10-14	DATE COMPLETED 10-10-14	
FIELD GEOLOGIST K. Jalkut		DEVELOPMENT METHOD Surge & Pump
GROUND ELEVATION	DATUM	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: / 2.25'

ELEVATION/HEIGHT OF TOP OF RISER PIPE: / 2.10'

TYPE OF SURFACE SEAL: Quickrete Concrete Mix

I.D. OF SURFACE CASING: 4 in
TYPE OF SURFACE CASING: Steel Guard Pipe

RISER PIPE I.D.: 1.5 in
TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 3.25 in below casing (steel)

TYPE OF BACKFILL: No. 2 Holliston Sand
(~10-18 US sieve size)

ELEVATION/DEPTH TOP OF SEAL: / 10'

TYPE OF SEAL: Medium Bentonite Chips

DEPTH TOP OF SAND PACK: 13'

ELEVATION/DEPTH TOP OF SCREEN: / 14.83'
(~15')

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 0.010 slots x 10'

I.D. OF SCREEN: 1.5 in ID (2.5 in OD)

TYPE OF SAND PACK: Pre-pack screen w/ 20-40 mesh silica sand; No. 2 sand (10-18 US sieve size) in annular space

ELEVATION/DEPTH BOTTOM OF SCREEN: / 24.83'
(~25')

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 24.83'
(~25')

BACKFILL MATERIAL BELOW SAND: N/A

ELEVATION/DEPTH OF HOLE: / 24.83'
(~25')

ACAD:FORM_MWSU.dwg 07/20/99 INL

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, CED Area	Sample ID Number:	TB13 - 111914
Project Number:	112G01813 0000.2123	Sampled By:	K. JALKUT
Site Location:	Sites 2,3, and the Drum Removal Area	C.O.C. Number:	
Event:	GW sampling - Sep/Oct		

QA Sample Type:

[X] Trip Blank [ ] Rinsate Blank

[ ] Source Water Blank [ ] Other Blank

SAMPLING DATA:

Date: 111914
Time: 1100
Method: Grab

WATER SOURCE:

[X] Laboratory Prepared [] Tap
[] Purchased [] Fire Hydrant
[] Other

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: N/A
Equipment Used:
Equipment Type:
[] Dedicated
[] Reusable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOCs (8260C)	Cool ≤ 6 °C, HCl	2 X 40 ml vials	(YES)/ NO
TPH-GRO (5030/8015)	Cool ≤ 6 °C, HCl	2 X 40 ml vials	(YES)/ NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, N. Kingstown, RI / CED Area	Sample ID Number:	RB03 - 103014
Project Number:	112G01813 0000.2123	Sampled By:	K. Jalkut
Site Location:	Sites 2, 3, and the Drum Removal Area	C.O.C. Number:	

Event: GW Sampling, Sept/Oct

QA Sample Type:

[ ] Trip Blank [X] Rinsate Blank

[ ] Field Blank (Source water) [ ] Other Blank

SAMPLING DATA:

Date: 103014

Time: 1430

Method: Direct Pour

WATER SOURCE:

[X] Laboratory Prepared [ ] Tap

[ ] Purchased [ ] Fire Hydrant

[ ] Other

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:

Supplier:

Manufacturer:

Order Number:

Lot Number:

Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: Groundwater

Equipment Used: ~~Rental Bladder Pump~~, Teflon Bladder, or Tubing

Equipment Type:

[ ] Dedicated

[x] Reusable

[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	Cool ≤ 6°C, HCl	2 X 40 ml vials	(YES) / NO
Total Metals	Cool ≤ 6°C, HNO3	1 X 250 ml poly	(YES) / NO
Dissolved Metals (field filtered)	Cool ≤ 6°C, HNO3	1 X 250 ml poly	(YES) / NO
Naphthalene	Cool ≤ 6°C	2 X 1 liter glass	(YES) / NO
SVOCs, Pest./PCBs	Cool ≤ 6°C	2 X 1 liter glass	(YES) / NO
TPH-GRO	Cool ≤ 6°C, HCL	2 X 40 ml vials	(YES) / NO
TPH-DRO	Cool ≤ 6oC	2 X 1 liter glass	(YES) / NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Well ID

QDC-MW01S
QDC- MW01D
MW01-02
MW01-05S
MW01-06S
MW01-07S
MW01-08D
MW01-09D
MW01-10S
MW01-10D
MW01-10R
MW01-11D
MW01-12S
MW01-12D
MW01-13S (original well)
MW01-13Sa (new replacement well)
MW01-13D
MW01-13R
MW01-14S
MW01-14R
MW01-15R
MW01-15D

MW02-01S
MW02-03S
MW02-03D
MW02-03R
MW02-04Sa
MW02-05S
MW02-06S (original well)
MW02-06Sa (new replacement well)
MW02-07S
MW02-07D
MW02-08Sa
MW02-08Da
MW02-09Sa
MW02-10S
MW02-10D
MW02-11S
MW02-11D

25MW-01S (fmr UST related around B224)
26MW-01S (fmr UST related around B224)
26MW-02S (fmr UST related around B224)
26MW-03S (fmr UST related around B224)

MW03-01S (original well)
MW03-01Sa (new replacement well)
MW03-02S
MW03-02D
MW03-03S (original well)
MW03--03Sa (new replacement well)
MW03-03D (no well cover)
MW03-03R
MW03-04S
MW03-05S
MW03-05D
MW03-06D
MW03-06Da
MW03-07D
MW03-08D
MW03-08R
MW03-09D
MW03-10D
MW03-12D
MW03-12R
MW03-13D
MW03-13R

MW03-15S (Drum Removal Area)
MW03-15I (Drum Removal Area)
MW03-16S (Drum Removal Area)
MW03-16I (Drum Removal Area)
MW03-17S (Drum Removal Area)
MW03-17I (Drum Removal Area)

10/15/14 Water Level

	22.61
	21.90
	28.59
Very thick brush - did not seek out	
Could not locate - Possibly buried under asphalt or destroyed	
Very thick brush - did not seek out	
	21.20
	23.80
	23.15
	23.70
	24.90
	25.46
	19.50
Water level below top of dedicated pump	
	17.07
	18.71
	15.86
	15.80
	24.61
	24.64
Could not locate - possibly buried or destroyed	
Found buried with broken well cover - did not measure water level	
	21.61
	27.10
	25.80
	25.60
	20.68
	22.50
Could not locate - possibly buried under asphalt in car lot or destroyed	
	20.50
No longer present	
No longer present	
	23.31
	22.90
	21.00
	19.30
	20.45
	20.15
	19.78
Could not locate	
Could not locate	
Could not locate	
Could not locate	

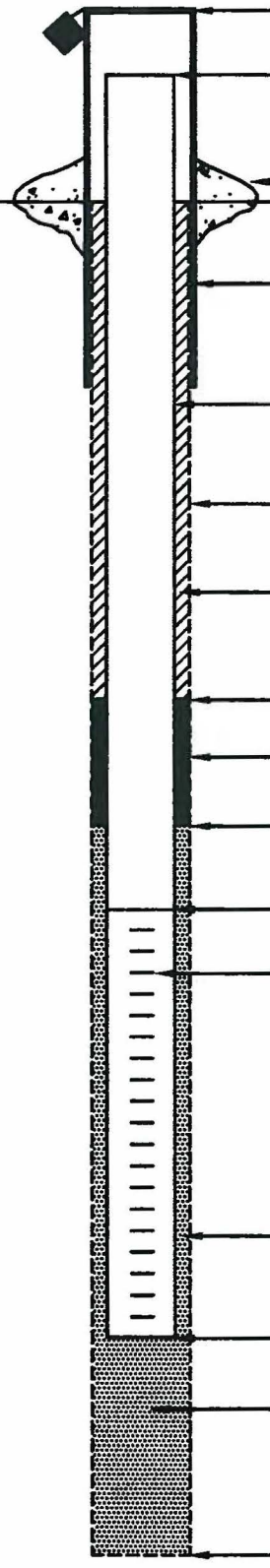
Found buried, no cap, no road box, full of dirt, attempted abandonment, cemented in, could not pull out	
	20.17
	19.49
	19.78
	19.32
	19.82
	19.51
	19.14
	20.58
	21.80
	21.90
Could not locate - likely buried or destroyed	
Could not locate - likely buried or destroyed	
	18.25
Destroyed - photo taken	
Destroyed - photo taken	
Could not locate	
	13.94
Did not seek out - too far away?	
Did not seek out - too far away?	
Did not seek out - too far away?	
Did not seek out - too far away?	
	24.25
	24.50
	22.40
	22.45
	22.67
	22.80

WELL NO.: MW03-01Sa (replacement well)

Tetra Tech

OVERBURDEN MONITORING WELL SHEET STICK-UP

PROJECT: NCBC Davisville-CED Area	LOCATION: N. Kingstown, RI	DRILLER: D. Newton/TDS, Inc.
PROJECT NO.: 112G01813	BORING: MW03-01Sa	DRILLING METHOD: DPT
DATE BEGUN: 10-7-14	DATE COMPLETED: 10-8-14	DEVELOPMENT METHOD: Surge & Pump
FIELD GEOLOGIST: K. Jalkut		
GROUND ELEVATION:	DATUM:	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: 12.80

ELEVATION/HEIGHT OF TOP OF RISER PIPE: 12.60

TYPE OF SURFACE SEAL: Quikrete Concrete Mix

I.D. OF SURFACE CASING: 4 in
TYPE OF SURFACE CASING: Steel Guard Pipe

RISER PIPE I.D.: 1.5 in
TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 3.25 in below casing (steel)

TYPE OF BACKFILL: No. 2 Hallister Sand (~10-18 US Sieve size)

ELEVATION/DEPTH TOP OF SEAL: 7.50'

TYPE OF SEAL: Medium Bentonite Chips

DEPTH TOP OF SAND PACK: 12'

ELEVATION/DEPTH TOP OF SCREEN: 14.15' (~14')

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 0.010 slots x 10'

I.D. OF SCREEN: 1.5 in ID (2.5 in OD)

TYPE OF SAND PACK: Pre-packed screen w/ 20-40 mesh silica sand; No. 2 sand (10-18 US sieve size) in annular space

ELEVATION/DEPTH BOTTOM OF SCREEN: 24.15' (~24')

ELEVATION/DEPTH BOTTOM OF SAND PACK: 24.15' (~24')
BACKFILL MATERIAL BELOW SAND: N/A

ELEVATION/DEPTH OF HOLE: 24.15' (~24')

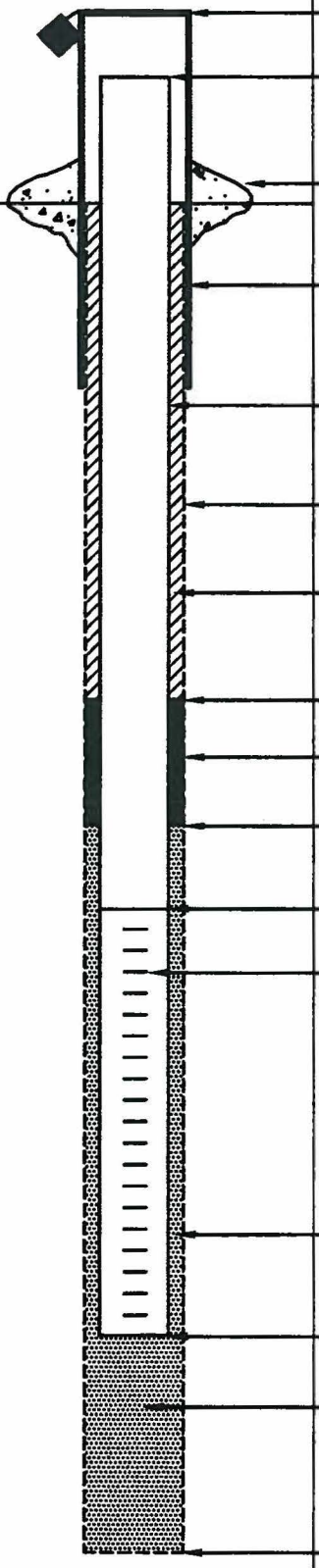
ACAD: FORM_MWSU.dwg 07/20/99 INI

Tetra Tech

OVERBURDEN MONITORING WELL SHEET STICK-UP

(replacement well)

PROJECT NCBC Davisville-CED Area	LOCATION N. Kingstown, RI	DRILLER D. Newton/IDS, Inc
PROJECT NO. 112G01813	BORING MW03-133Sa	DRILLING METHOD DPT
DATE BEGUN 10-10-14	DATE COMPLETED 10-10-14	
FIELD GEOLOGIST K. Jalkut		DEVELOPMENT METHOD Surge & Pump
GROUND ELEVATION	DATUM	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: 12.25

ELEVATION/HEIGHT OF TOP OF RISER PIPE: 12.10

TYPE OF SURFACE SEAL: Quikrete Concrete Mix

I.D. OF SURFACE CASING: 4 in
TYPE OF SURFACE CASING: Steel Guard Pipe

RISER PIPE I.D.: 1.5 in
TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 3.25 in below casing (steel)

TYPE OF BACKFILL: No. 2 Hollistan Sand (~10-18 US Sieve Size)

ELEVATION/DEPTH TOP OF SEAL: 10'

TYPE OF SEAL: Medium Bentonite Chips

DEPTH TOP OF SAND PACK: 13'

ELEVATION/DEPTH TOP OF SCREEN: 14.83' (~15')

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 0.010 slots x 10'

I.D. OF SCREEN: 1.5 in ID (2.5 in OD)

TYPE OF SAND PACK: Pre-packed screen w/ 20-40 US sieve size sand; No. 2 Hollistan sand (10-18 US sieve size) in annular space

ELEVATION/DEPTH BOTTOM OF SCREEN: 24.83' (~25')

ELEVATION/DEPTH BOTTOM OF SAND PACK: 24.83' (~25')

BACKFILL MATERIAL BELOW SAND: N/A

ELEVATION/DEPTH OF HOLE: 24.83' (~25')

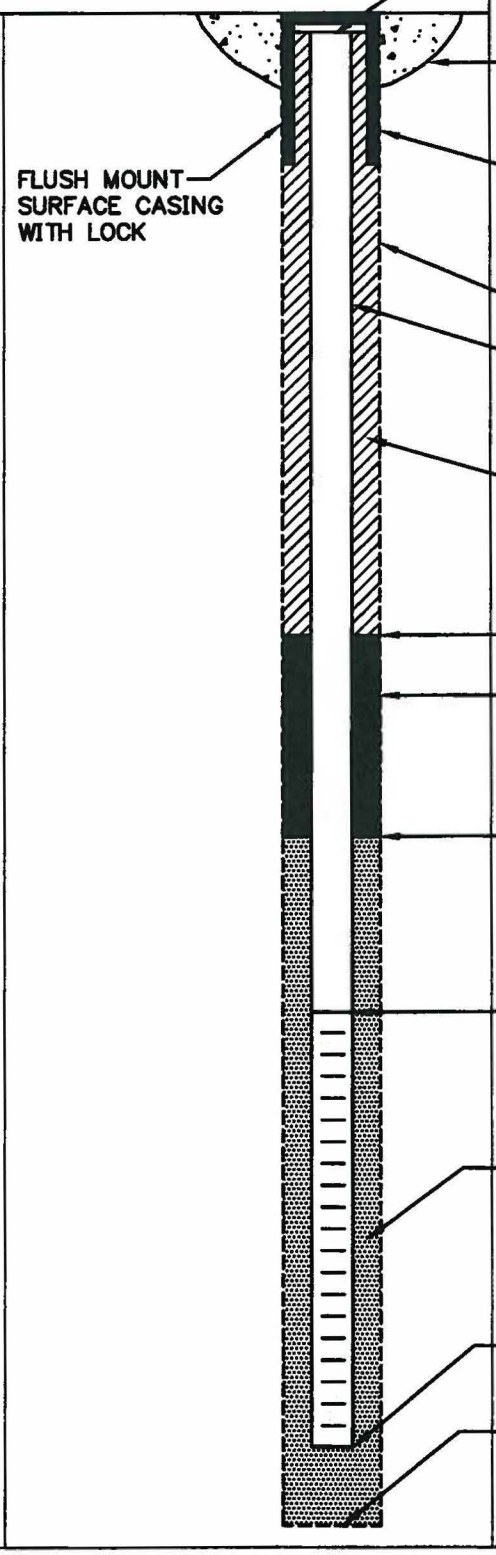
ACAD:FORM_MWSU.dwg 07/20/99 INL

WELL NO.: MW02-065a (replacement well)

Tetra Tech

OVERBURDEN
MONITORING WELL SHEET
FLUSH - MOUNT

PROJECT NCAC Quonsville - CED Area	LOCATION N. Kingstown, RI	DRILLER D. Newton / TDS, Inc
PROJECT NO. 112G01813	BORING MW02-065a	DRILLING METHOD DPT
DATE BEGUN 10-9-14	DATE COMPLETED 10-10-14	DEVELOPMENT METHOD Surge & Pump
FIELD GEOLOGIST K. Jalkut		
GROUND ELEVATION	DATUM	



ELEVATION TOP OF RISER: _____
Depth below ground: -0.32'

TYPE OF SURFACE SEAL: Quikrete Concrete Mix

TYPE OF PROTECTIVE CASING: _____

I.D. OF PROTECTIVE CASING: _____

DIAMETER OF HOLE: 3.25 in below prot. casing

TYPE OF RISER PIPE: Schedule 40 PVC

RISER PIPE I.D.: 1.5 in

TYPE OF BACKFILL/SEAL: No. 2 Hollliston Sand (~10-18 US Sieve size)

ELEVATION/DEPTH TOP OF SEAL: / 10'

TYPE OF SEAL: Medium Bentonite Chips

ELEVATION/DEPTH TOP OF SAND: / 13'

ELEVATION/DEPTH TOP OF SCREEN: / 15.82' (~16')

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 0.010 slots x 10'

TYPE OF SAND PACK: Pre-packed screen w/20-40 mesh silica sand; No. 2 sand (10-18 sieve size) in annular space

DIAMETER OF HOLE IN BEDROCK: N/A

ELEVATION / DEPTH BOTTOM OF SCREEN: / 25.82 (~26')

ELEVATION / DEPTH BOTTOM OF SAND: / ↓

ELEVATION/DEPTH BOTTOM OF HOLE: / ↓

BACKFILL MATERIAL BELOW SAND: N/A

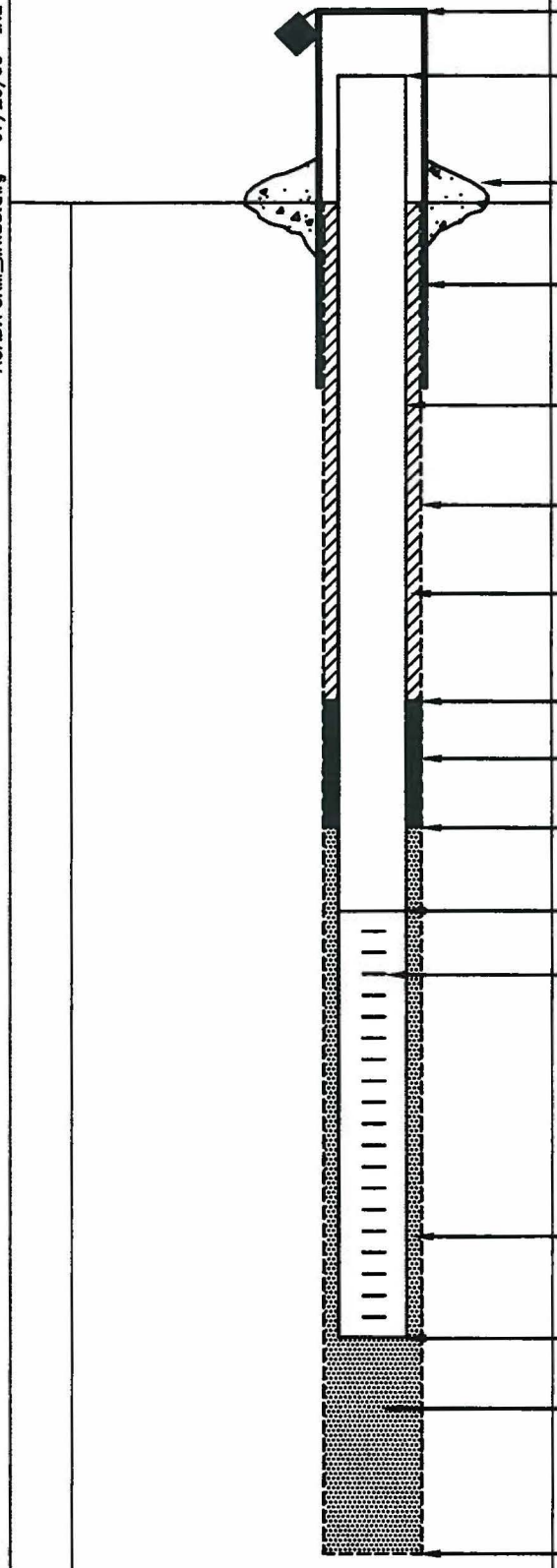
ACAD: FORM_MWFM.dwg 07/20/99 INL

WELL NO.: MW01-13Sa (replacement well)

Tetra Tech

OVERBURDEN MONITORING WELL SHEET STICK-UP

PROJECT: NCBC Davisville - CED Area	LOCATION: N. Kingstown, RI	DRILLER: D. Newton / IDS, Inc.
PROJECT NO.: 112G01813	BORING: MW01-13Sa	DRILLING METHOD: DPT
DATE BEGUN: 10-8-14	DATE COMPLETED: 10-8-14	DEVELOPMENT METHOD: Surge & Pump
FIELD GEOLOGIST: K. Jalkut		
GROUND ELEVATION:	DATUM:	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: 12.80

ELEVATION/HEIGHT OF TOP OF RISER PIPE: 12.69

TYPE OF SURFACE SEAL: Quikrete Concrete Mix

I.D. OF SURFACE CASING: 4in
TYPE OF SURFACE CASING: Steel Guard Pipe

RISER PIPE I.D.: 1.5 in
TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 3.25 in below prot. casing

TYPE OF BACKFILL: No. 2 Hollis ton sand (~10-18 US Sieve Size)

ELEVATION/DEPTH TOP OF SEAL: 7'

TYPE OF SEAL: Medium Bentonite Chips

DEPTH TOP OF SAND PACK: 10'

ELEVATION/DEPTH TOP OF SCREEN: 13.11 (~13')

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 0.010 slots x 10'

I.D. OF SCREEN: 1.5 in ID (2.5 in OD)

TYPE OF SAND PACK: Pre-packed screen w/ 20-40 mesh silica sand; No. 2 sand (10-18 US sieve size) in annular space

ELEVATION/DEPTH BOTTOM OF SCREEN: 23.11 (~23')

ELEVATION/DEPTH BOTTOM OF SAND PACK: 23.11 (~23')
BACKFILL MATERIAL BELOW SAND: N/A

ELEVATION/DEPTH OF HOLE: 23.11 (~23')

ACAD:FORM_MWSU.dwg 07/20/99 INL

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW01-10S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1545 WEATHER: Sunny windy 80s (80-85°F)
↳ ~15 mph from SW
BP = ~29-90 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)
IS WELL LOCKED: (Yes) No Added Master Lock w/ 2246 key
IS WELL LABELED: (Yes) No
CONCRETE PAD: (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 2 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump (Peristaltic Pump Tubing) None
GUARD PIPE HEIGHT: 1.54' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.22 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) (STICK-UP) or DOWN 1.54 − 0.22 = 1.32'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 24.56' / semi-firm
WATER LEVEL DEPTH (FT FROM TOP OF MP) 21.66'

COMMENTS: PID Reading = NM
Blue protective casing - 4" In brush behind soil/concrete pile
Triplet location - 2 blue casings - short height; 1 tall-brown

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW81-135 | PROJECT: Davisville CED Area, N. Kingstown, RI

INSPECTED BY: KJ, PS | PROJECT NUMBER: 112G01813 WE01

DATE: 8/ 27 /2014 TIME: 1820 | WEATHER: Sunny breezy 80s (80-85°F) → ~15 mph SW BP = 29.88 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)

GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded

IS WELL LOCKED: (Yes) No Replaced lock - difficult to open Master Locke #2246

IS WELL LABELED: (Yes) No

CONCRETE PAD: (Intact) Cracked Broken Heaved None

EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement

INSIDE WELL DIAMETER: 2 (INCHES)

TOP OF WELL RISER: (Intact) Damaged

DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)

GUARD PIPE HEIGHT: 1.59' (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): +0.24 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A

HEIGHT WELL CASING (RISER) STICK-UP or DOWN 1.59' - 0.24' = 1.35'

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 19.11' / semi-soft

WATER LEVEL DEPTH (FT FROM TOP OF MP) 16.42'

COMMENTS: PID Reading = NM NE of trailer (triplet)

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW01-14S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1727 WEATHER: Sunny, ~15mph wind from SW, 80-85°F BP = 29.89 in

VISUAL WELL INSPECTION:

WELL TYPE: Stick-up / Flush-mount (road box)

GUARD PIPE/ROAD BOX: Intact / Damaged / Corroded

IS WELL LOCKED: Yes / No — Replaced lock - corroded. Master Lock #2246

IS WELL LABELED: Yes / No

CONCRETE PAD: Intact / Cracked / Broken / Slightly Heaved / None

EXPANSION PLUG or BLADDER CAP: Present or Missing — OK or Needs Replacement

INSIDE WELL DIAMETER: 2 (INCHES)

TOP OF WELL RISER: Intact / Damaged

DEDICATED PUMP/TUBING: Bladder Pump / Peristaltic Pump Tubing / None

GUARD PIPE HEIGHT: 1.33' (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.16' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS: Present / Some Missing #Needed / Size

O-RING: Present or Missing — Intact or Damaged

WATER IN ROAD BOX: Yes / No

TOP MEASURING POINT (MP): PVC / Steel / Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present): N/A

HEIGHT WELL CASING (RISER) STICK-UP or DOWN: 1.33' − 0.16' = 1.17'

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS: 26.22' / semi-soft

WATER LEVEL DEPTH (FT FROM TOP OF MP): 24.05'

COMMENTS: PID Reading = NM Fence behind trailer

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02r-03S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1800 WEATHER: 80-85°F, ~15 mph wind from SW, Sunny
BP = ~29.88 in

VISUAL WELL INSPECTION:

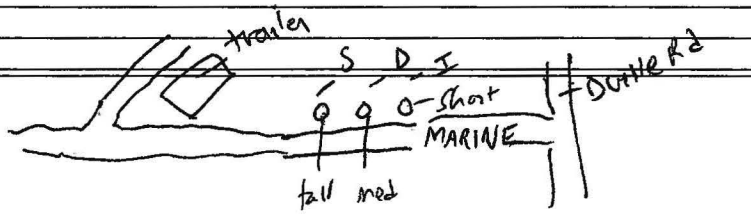
WELL TYPE: Stick-up Flush-mount (road box)
GUARD PIPE/ROAD BOX: Intact Damaged Corroded
IS WELL LOCKED: Yes No
IS WELL LABELED: Yes No
CONCRETE PAD: Intact Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: Present or Missing OK or Needs Replacement
INSIDE WELL DIAMETER: 2 (INCHES)
TOP OF WELL RISER: Intact Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing None
GUARD PIPE HEIGHT: 3.21' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.45' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): PVC Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN 3.21' - 0.45' = 2.76'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 33.25' / Firm
WATER LEVEL DEPTH (FT FROM TOP OF MP) 26.26'

COMMENTS: PID Reading = Other side Marine Rd - across from site
6" protective casing



Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02-045a
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1400~~1425~~ WEATHER: Sunny windy, 80s (~85°F)
→ 15-20 mph from SW
BP = ~29.93 in

VISUAL WELL INSPECTION:

WELL TYPE:	Stick-up	Flush-mount (road box)			
GUARD PIPE/ROAD BOX:	Intact	Damaged	Corroded		
IS WELL LOCKED:	Yes	No			
IS WELL LABELED:	Yes	No			
CONCRETE PAD:	Intact	Cracked	Broken	Heaved	None
EXPANSION PLUG or BLADDER CAP:	Present or Missing		OK or Needs Replacement		
INSIDE WELL DIAMETER:	2 (INCHES)				
TOP OF WELL RISER:	Intact	Damaged			
DEDICATED PUMP/TUBING:	Bladder Pump	Peristaltic Pump Tubing	None		
GUARD PIPE HEIGHT:	N/A (FT ABOVE GRADE)				

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.42' (FT)

ROADBOX ONLY:

WELL COVER BOLTS (2)	Present	Some Missing	#Needed / Size	
O-RING:	Present or Missing	Intact or Damaged		
WATER IN ROAD BOX	Yes	No		

TOP MEASURING POINT (MP):	PVC Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present)	N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN	-0.42 (to ground surface not 4" casing)
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS	25.89' / firm
WATER LEVEL DEPTH (FT FROM TOP OF MP)	19.62'

COMMENTS: PID Reading = NM
Located in NORAD car lot - next to back fence
Need ~"h" socket for bolts
Need to get bigger tools to open well - talk to Jack + Brian Reynolds @ trailer re: MW03-015
21mm socket
PVC above 4" casing inside 12" roadbox

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02-05S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1:15 WEATHER: 80-85°F, 15-20mph wind from SW, sunny BP = ~29.95 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)
IS WELL LOCKED: (Yes) No — Cut Lock - corroded; replaced w/ Master Lock + key # 2246
IS WELL LABELED: (Yes) No
CONCRETE PAD: (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 2 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 2.15' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): ~0.24' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN 2.15' - 0.24' = 1.91'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 28.0' / semi-soft
WATER LEVEL DEPTH (FT FROM TOP OF MP) 21.44

COMMENTS: PID Reading = NM

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WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02-085a
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1300 WEATHER: Sunny, windy, 80s (~85°F) → 15-20mph from SW
BP = ~29.95 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)

GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded

IS WELL LOCKED: (Yes) No Cut + replace v. corroded "SECURITY" lock use Master Lock w/ #2246 key

IS WELL LABELED: (Yes) No

CONCRETE PAD: (Intact) Cracked Broken Heaved None

EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement

INSIDE WELL DIAMETER: 2 (INCHES)

TOP OF WELL RISER: (Intact) Damaged

DEDICATED PUMP/TUBING: Bladder Pump (Peristaltic Pump Tubing) None

GUARD PIPE HEIGHT: 2.19' (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.18' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A

HEIGHT WELL CASING (RISER) STICK-UP or DOWN 2.19' - 0.18' = 2.01

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 28.39 / semi soft

WATER LEVEL DEPTH (FT FROM TOP OF MP) 22.25'

COMMENTS: PID Reading = NM

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02-09Sa
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1345 WEATHER: Sunny windy 80s (85°F)
↳ 15-20 mph wind from SW
BP = ~29.93 in

VISUAL WELL INSPECTION:

WELL TYPE: Stick-up (Flush-mount (road box))
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: Yes (No)
IS WELL LABELED: (Yes) No
CONCRETE PAD: (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 2 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump (Peristaltic Pump Tubing) None
GUARD PIPE HEIGHT: N/A (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.42 (FT)
relative to ground, not top of 4" casing

ROADBOX ONLY:

WELL COVER BOLTS (2) (Present) Some Missing #Needed / Size
O-RING: (Present) or Missing Intact or Damaged
WATER IN ROAD BOX Yes (No)

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or (DOWN) -0.42'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 26.76 / semi-soft
WATER LEVEL DEPTH (FT FROM TOP OF MP) 19.95

COMMENTS: PID Reading = NM Located in NORAD car lot - near back fence
2" well in 4" casing surrounded by a 12" roadbox

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Need 1/2" socket for bolts

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02-10S BK
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1440 WEATHER: ~85°F, sunny, 15-20 mph wind from SW BP = 29.92 in

VISUAL WELL INSPECTION:

WELL TYPE: Stick-up / Flush-mount (road box)
GUARD PIPE/ROAD BOX: Intact / Damaged / Corroded
IS WELL LOCKED: Yes / No
IS WELL LABELED: Yes / No
CONCRETE PAD: Intact / Cracked / Broken / Heaved / None
EXPANSION PLUG or BLADDER CAP: Present or Missing — OK or Needs Replacement
INSIDE WELL DIAMETER: 2 (INCHES)
TOP OF WELL RISER: Intact / Damaged
DEDICATED PUMP/TUBING: Bladder Pump / Peristaltic Pump Tubing / None
GUARD PIPE HEIGHT: N/A (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -1.47' (FT)

ROADBOX ONLY:

WELL COVER BOLTS: Present / Some Missing #Needed / Size
O-RING: Present or Missing — Intact or Damaged
WATER IN ROAD BOX: Yes / No

TOP MEASURING POINT (MP): PVC / Steel / Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present): N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN: -1.47'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS: 25.06 / semi-firm
WATER LEVEL DEPTH (FT FROM TOP OF MP): 18.33

COMMENTS: PID Reading = NM
Corrugated/crimped 6" metal casing w/ 2" PVC inside
12" roadbox. Hard sand at top of 3-pavg/PVC riser
Located in NORAD car lot

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SITE 2
~~XXX~~
O-D
CORE O-S

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02-115a/B
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1510 WEATHER: ~85°F, sunny, 15-20 mph wind from SW
BP = ~29.92 in

VISUAL WELL INSPECTION:

WELL TYPE: Stick-up (Flush-mount (road box))
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: Yes (No)
IS WELL LABELED: (Yes) No
CONCRETE PAD: (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
~~Not used - replaced w/ rubber cap - plug in road box~~
INSIDE WELL DIAMETER: 2 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump (Peristaltic Pump Tubing) None
GUARD PIPE HEIGHT: N/A (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.31' (FT)

ROADBOX ONLY:

WELL COVER BOLTS (2) (Present) Some Missing #Needed / Size
O-RING: (Present) or Missing Intact or Damaged
WATER IN ROAD BOX (y) (Yes) ~~No~~ - inside 6" - 0.1' deep - rocky substrate below water

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN -0.31'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS ~~26.08~~ ~~26.15~~ / firm
WATER LEVEL DEPTH (FT FROM TOP OF MP) ~~18.87~~ 19.2

COMMENTS: PID Reading = NM
NORAD
In car lot
21mm socket 2" well in 6" casing inside 12" road box
Metallic sheen on water in road box - took photo

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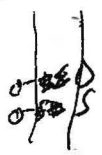
~~EXA~~



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WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: 25 MW01 S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1145 WEATHER: 80-85°F, sunny, 15-20mph wind from WSW
BP = ~29.98in

VISUAL WELL INSPECTION:

WELL TYPE: Stick-up Flush-mount (road box)

GUARD PIPE/ROAD BOX: Intact Damaged Corroded

IS WELL LOCKED: Yes No

IS WELL LABELED: Yes No

CONCRETE PAD: Intact Cracked Broken Heaved None

EXPANSION PLUG or BLADDER CAP: Present or Missing OK or Needs Replacement

INSIDE WELL DIAMETER: _____ (INCHES)

TOP OF WELL RISER: Intact Damaged

DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing None

GUARD PIPE HEIGHT: _____ (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): _____ (FT)

ROADBOX ONLY:

WELL COVER BOLTS Present Some Missing #Needed / Size_____

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): PVC Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) _____

HEIGHT WELL CASING (RISER) STICK-UP or DOWN _____

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS _____

WATER LEVEL DEPTH (FT FROM TOP OF MP) _____

COMMENTS: PID Reading = Could not find w/ GPS

Nearby CB #8; 1" PVC adjacent to road DSW = 21.20' TD = 25.4' SOFT BOTTOM
S/U = +1.26
Tubing on ground

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WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-01S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1120 WEATHER: Sunny, breezy 80s (80-83°F)
↳ 15-20mph wind from WSW
BP = ~29.98 in

VISUAL WELL INSPECTION:

WELL TYPE: Stick-up Flush-mount (road box)

GUARD PIPE/ROAD BOX: Intact Damaged Corroded

IS WELL LOCKED: Yes No

IS WELL LABELED: Yes No

CONCRETE PAD: Intact Cracked Broken Heaved None

EXPANSION PLUG or BLADDER CAP: Present or Missing OK or Needs Replacement

INSIDE WELL DIAMETER: _____ (INCHES)

TOP OF WELL RISER: Intact Damaged

DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing None

GUARD PIPE HEIGHT: _____ (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): _____ (FT)

ROADBOX ONLY:

WELL COVER BOLTS Present Some Missing #Needed / Size_____

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): PVC Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) _____

HEIGHT WELL CASING (RISER) STICK-UP or DOWN _____

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS _____

WATER LEVEL DEPTH (FT FROM TOP OF MP) _____

COMMENTS: PID Reading = NM

Can't Locate
150' from MW03-05S = drain in field. No evidence of a well.

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Buried Underground

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-02S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1048 WEATHER: Sunny, breezy, 80s (low)
→ ~15 mph wind SW
BP: ~30.01 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)

GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)

IS WELL LOCKED: Yes (No)

IS WELL LABELED: (Yes) No

CONCRETE PAD: Intact Cracked (Broken) Heaved None

EXPANSION PLUG or BLADDER CAP: (Present) or (Missing) slip cap (OK) or Needs Replacement

INSIDE WELL DIAMETER: 2 (INCHES)

TOP OF WELL RISER: (Intact) Damaged

DEDICATED PUMP/TUBING: Bladder Pump (Peristaltic Pump Tubing) None

GUARD PIPE HEIGHT: 2.19 (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.37 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A

HEIGHT WELL CASING (RISER) STICK-UP or DOWN 2.19 - 0.37 = 1.82'

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 25.75 / Firm

WATER LEVEL DEPTH (FT FROM TOP OF MP) 18.21

COMMENTS: PID Reading = NM

TtNUS Form 0021 Modified for Davisville

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-03S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1100 WEATHER: ~80°F, sunny, 15-20 mph wind SW BP = ~30.00 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)

GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)

IS WELL LOCKED: (Yes) No — Different lock = security; cut lock; replaced w/ Master Lock #2246

IS WELL LABELED: (Yes) No

CONCRETE PAD: Intact Cracked (Broken) Heaved None

EXPANSION PLUG or BLADDER CAP: (Present) or Missing — Slip Cap (OK) or Needs Replacement

INSIDE WELL DIAMETER: 2 (INCHES)

TOP OF WELL RISER: (Intact) Damaged

DEDICATED PUMP/TUBING: Bladder Pump (Peristaltic Pump Tubing) None

GUARD PIPE HEIGHT: 1.91 (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): ~0.49' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present): N/A

HEIGHT WELL CASING (RISER) STICK-UP or DOWN: 1.91 - 0.49' = 1.42'

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS: 20.85 / Semi Firm

WATER LEVEL DEPTH (FT FROM TOP OF MP): 18.03'

COMMENTS: PID Reading = NM

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-04S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1135 WEATHER: Sunny breezy 80s (low) & 15-20 mph wind SW BP = ~29.98 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)

GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)

IS WELL LOCKED: (Yes) No Cut lock - can't open w/ #2246 - corroded (salt air?) - replaced w/ new Master Lock w/ #2246 key

IS WELL LABELED: (Yes) No

CONCRETE PAD: (Intact) Cracked Broken Heaved None

EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement

INSIDE WELL DIAMETER: 2 (INCHES)

TOP OF WELL RISER: (Intact) Damaged

DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)

GUARD PIPE HEIGHT: 1.92' (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.25 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A

HEIGHT WELL CASING (RISER) STICK-UP or DOWN 1.92' - 0.25' = 1.67'

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 26.55' / Firm

WATER LEVEL DEPTH (FT FROM TOP OF MP) 19.35'

COMMENTS: PID Reading = NM Adjacent to paved road Datum Site 2+3

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW05-05S (3) PROJECT: Davisville CED Area, N. Kingstown, RI

INSPECTED BY: KJ, PS PROJECT NUMBER: 112G01813 WE01

DATE: 8/ 27 /2014 TIME: 1130 WEATHER: 80-83°F, Sunny, 15-20 mph wind SW BP = 29.98 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)

GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)

IS WELL LOCKED: (Yes) No Cut Lock + replaced w/ Master Lock #2246 - previous lock would not open w/ #2246 key

IS WELL LABELED: (Yes) No

CONCRETE PAD: (Intact) Cracked Broken Heaved None

EXPANSION PLUG or BLADDER CAP: (Present) or Missing OK or Needs Replacement

INSIDE WELL DIAMETER: 2 (INCHES)

TOP OF WELL RISER: (Intact) Damaged

DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)

GUARD PIPE HEIGHT: 2.22 (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.40 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A

HEIGHT WELL CASING (RISER) STICK-UP or DOWN 2.22 - 0.40 = 1.80'

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 27.94 / semi soft

WATER LEVEL DEPTH (FT FROM TOP OF MP) 20.57'

COMMENTS: PID Reading = NM

Soil around pad eroded away
Adjacent to paved road Inbound Sites 2+3

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-15I
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1652 WEATHER: Sunny breezy 80s (80-85°F) ~20 mph wind from SW BP = ~29.90in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)

GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)

IS WELL LOCKED: (Yes) No

IS WELL LABELED: (Yes) (No) Labelled now

CONCRETE PAD: (Gravelly) (Intact) Cracked Broken Heaved None

EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement

X INSIDE WELL DIAMETER: (1 1/2) (INCHES)

TOP OF WELL RISER: (Intact) Damaged

DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)

GUARD PIPE HEIGHT: 3.19' (FT ABOVE GRADE)

DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.14' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size

O-RING: Present or Missing Intact or Damaged

WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap

THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A

HEIGHT WELL CASING (RISER) (STICK-UP) or DOWN 3.19' - 0.14' = 3.05'

TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 58.34/soft

WATER LEVEL DEPTH (FT FROM TOP OF MP) 22.87'

COMMENTS: PID Reading = NM CED DRUM Disposal Area

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-15S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1655 WEATHER: Sunny, breezy 80s (82-85°F) → ~20 mph wind from SW BP = 29.90 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) No Labelled now
CONCRETE PAD: (Gravelly) (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
* INSIDE WELL DIAMETER: 1 1/2 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 3.18' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.25' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN 3.18' - 0.25' = 2.93'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 26.11' / firm
WATER LEVEL DEPTH (FT FROM TOP OF MP) 22.65'
COMMENTS: PID Reading = NM CED Drum Disposal Area

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-16I
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1705 WEATHER: 82-85°F, sunny, ~20 mph wind from SW

VISUAL WELL INSPECTION:

BP = ~29.90 in

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) (No) Labelled now
CONCRETE PAD: (Gravelly) (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 1½ (INCHES) *
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 2.92' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.14' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN 2.92' - 0.14' = 2.78'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 57.92 / soft
WATER LEVEL DEPTH (FT FROM TOP OF MP) 20.86'

COMMENTS: PID Reading = NM CED Drum Disposal Area

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-16S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1700 WEATHER: Sunny, breezy 80s (82-85°F) → 20mph wind from SW BP=~29.90 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) No Labeled now
CONCRETE PAD: (gravelly) (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
* INSIDE WELL DIAMETER: 1½ (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 3.22' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.23 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN 3.22' - 0.23' = 2.99'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 24.45' / firm
WATER LEVEL DEPTH (FT FROM TOP OF MP) 20.92'

COMMENTS: PID Reading = NM CED Drum Disposal Area

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-17I
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1635 WEATHER: Sunny breezy, 80s (82-85°F) ~20 mph wind from SW BP: ~29.90 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) No Labelled now
CONCRETE PAD: (gravelly) (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 1½ (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 3.33' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.19' (FT)

ROADBOX ONLY:

WELL COVER BOLTS N/A Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN 3.33' - 0.19' = 3.14'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 57.60' / semi soft
WATER LEVEL DEPTH (FT FROM TOP OF MP) 21.2'

COMMENTS: PID Reading = NM
3 inch protective casing
CED Drum Disposal Area

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-17S
PROJECT: Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS
PROJECT NUMBER: 112G01813 WE01
DATE: 8/ 27 /2014 TIME: 1645 WEATHER: Sunny, breezy, 80s (82-85°F) ~20mph from SW BP: ~29.90in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged (Corroded)
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) No Labelled now
CONCRETE PAD: (gravelly) (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 1½ (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 3.24' (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.25' (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) (STICK-UP) or DOWN 3.24' - 0.25' = 2.99'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 24.51 / firm
WATER LEVEL DEPTH (FT FROM TOP OF MP) 21.10'

COMMENTS: PID Reading = NM Approx. 18" away from MW03-17I

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-01Sa
PROJECT: Fmr NCBC Davisville CED Area, N. Kingstown, RI
INSPECTED BY: (KJ) PS, WP
PROJECT NUMBER: 112G01813 WE01
DATE: 10/15/2014 TIME: 1437 WEATHER: P. Sunny, low 70s, 15-20mph wind from S
BP = 30.03 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) No
CONCRETE PAD: Buried (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 1.5 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 2.80 (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.2 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) (STICK-UP) or DOWN 2.80 - 0.2 = ~~2.78~~ 2.60
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 26.66 / Firm + .27 for probe = 26.93
WATER LEVEL DEPTH (FT FROM TOP OF MP) 20.17

COMMENTS: PID Reading (ppm) = N/M WL meter = S/N 58488
Screen = 14.15-24.15 or ~14-24' bgs.

TtNUS Form 0021 Modified for Davisville

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW03-03Sa
PROJECT: Fmr NCBC Davisville CED Area, N. Kingstown, RI
INSPECTED BY: (KJ) PS, WP
PROJECT NUMBER: 112G01813 WE01
DATE: 10/15/2014 TIME: 1448 WEATHER: P. Cloudy, low 70s, 15-20mph from S
BP= 30.05 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) No
CONCRETE PAD: (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: Present or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 1.5 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 2.25 (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.15 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN 2.25 − 0.15 = 2.10
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 26.66 / Firm + probe pt (.27') = 26.93
WATER LEVEL DEPTH (FT FROM TOP OF MP) 19.82

COMMENTS: PID Reading (ppm) = N/M WL meter = S/N 58488
Screen = 14.83 − 24.83 ft ~ 15-25' bgs.

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→ OVER

Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW02-06Sa
PROJECT: Fmr NCBC Davisville CED Area, N. Kingstown, RI
INSPECTED BY: KJ, PS, WP
PROJECT NUMBER: 112G01813 WE01
DATE: 10/15/2014 TIME: 1517 WEATHER: P.Sunny, low 70s, 15-20mph from S
BP= 30.03in

VISUAL WELL INSPECTION:

WELL TYPE: Stick-up / Flush-mount (road box)
GUARD PIPE/ROAD BOX: Intact / Damaged / Corroded
IS WELL LOCKED: Yes / No
IS WELL LABELED: Yes / No
CONCRETE PAD: Intact / Cracked / Broken / Heaved / None
EXPANSION PLUG or BLADDER CAP: Present or Missing / OK or Needs Replacement
INSIDE WELL DIAMETER: 1.5 (INCHES)
TOP OF WELL RISER: Intact / Damaged
DEDICATED PUMP/TUBING: Bladder Pump / Peristaltic Pump Tubing / None
GUARD PIPE HEIGHT: N/A (FT ABOVE GRADE)
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): -0.32 (FT)

ROADBOX ONLY:

WELL COVER BOLTS: Present / Some Missing / #Needed / Size
O-RING: Present or Missing / Intact or Damaged
WATER IN ROAD BOX: Yes / No

TOP MEASURING POINT (MP): PVC / Steel / Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present): N/A
HEIGHT WELL CASING (RISER) STICK-UP or DOWN: See above (-0.32)
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS: 25.55 / firm (add .27 for probe) = 25.82 Solinst
WATER LEVEL DEPTH (FT FROM TOP OF MP): 20.50

COMMENTS: PID Reading (ppm) = N/M WL meter = S/N 58488

Screen = 15.82 - 25.82 (~16-26)

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Tetra Tech Inc.

WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET

WELL NUMBER: MW01-13Sa
PROJECT: Fmr NCBC Davisville CED Area, N. Kingstown, RI
INSPECTED BY: (KJ) PS, WP
PROJECT NUMBER: 112G01813 WE01
DATE: 10 / 15 /2014 TIME: 1400 WEATHER: P. Sunny, low 70s, 15-20mph from S
BP = 30.06 in

VISUAL WELL INSPECTION:

WELL TYPE: (Stick-up) Flush-mount (road box)
GUARD PIPE/ROAD BOX: (Intact) Damaged Corroded
IS WELL LOCKED: (Yes) No
IS WELL LABELED: (Yes) No
CONCRETE PAD: (see note) (Intact) Cracked Broken Heaved None
EXPANSION PLUG or BLADDER CAP: (Present) or Missing (OK) or Needs Replacement
INSIDE WELL DIAMETER: 1.5 (INCHES)
TOP OF WELL RISER: (Intact) Damaged
DEDICATED PUMP/TUBING: Bladder Pump Peristaltic Pump Tubing (None)
GUARD PIPE HEIGHT: 2.8 (FT ABOVE GRADE) Surface pad beneath rocks around base of well
DISTANCE BETWEEN PROTECTIVE CASING & WELL CASING (RISER): 0.11 (FT)

ROADBOX ONLY: N/A

WELL COVER BOLTS Present Some Missing #Needed / Size
O-RING: Present or Missing Intact or Damaged
WATER IN ROAD BOX Yes No

TOP MEASURING POINT (MP): (PVC) Steel Bladder Cap
THICKNESS OF BLADDER PUMP CAP (FT) (If present) N/A
HEIGHT WELL CASING (RISER) (STICK-UP) or DOWN 2.8 - 0.11 = 2.69'
TOTAL DEPTH (FT FROM TOP OF MP) / BOTTOM FIRMNESS 25.53 / ~~semi soft~~ slightly firm + .27 fmg rube = 25.80
WATER LEVEL DEPTH (FT FROM TOP OF MP) 18.71

COMMENTS: PID Reading (ppm) = N/M WL meter = S/N 58488

Screen (ft bgs) = 13.11-23.11 or ~13-23' bgs rounded.

OVER →

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, CED Area, N. Kingstown, RI	Sample ID Number:	RB01 -101014
Project Number:	112G01813/ CTO WE01	Sampled By:	Jalkut/Seward/Pryor
Sample Location:		C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 101014
Time: 1545
Method: Direct Pour

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: Surface or Subsurface Soil
Equipment Used: Plastic scoop
Equipment Type:
[ ] Dedicated
[ ] Reusable
[x] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH-GRO (MTBE-Naphthalene)	≤6°C, HCL	2 x 40 ml vials	(YES) / NO
TPH-DRO (C9-C40)	≤6°C	2 x 1 liter amber glass jars	(YES) / NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, CED Area, N. Kingstown, RI	Sample ID Number:	RB02 -101414
Project Number:	112G01813/ CTO WE01	Sampled By:	Jalkut/Seward/Pryor
Sample Location:		C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 101414
Time: 830
Method: Direct Pour

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: Surface or Subsurface Soil
Equipment Used: aluminum sampling pan
Equipment Type:
[ ] Dedicated
[ ] Reusable
[x] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH-GRO (MTBE-Naphthalene)	≤6°C, HCL	2 x 40 ml vials	(YES)/ NO
TPH-DRO (C9-C40)	≤6°C	2 x 1 liter amber glass jars	(YES)/ NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, CED Area, N. Kingstown, RI	Sample ID Number:	RB03 -101414
Project Number:	112G01813/ CTO WE01	Sampled By:	Jalkut/Seward/Pryor
Sample Location:		C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 101414
Time: 1600
Method: Direct Pour

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: Surface or Subsurface Soil
Equipment Used: plastic liner
Equipment Type:
[ ] Dedicated
[ ] Reusable
[x] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH-GRO (MTBE-Naphthalene)	≤6°C, HCL	2 x 40 ml vials	(YES) / NO
TPH-DRO (C9-C40)	≤6°C	2 x 1 liter amber glass jars	(YES) / NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, CED Area, N. Kingstown, RI	Sample ID Number:	TB01 -101014
Project Number:	112G01813/ CTO WE01	Sampled By:	Jalkut/Seward/Pryor
Sample Location:		C.O.C. Number:	

QA Sample Type:

[X] Trip Blank [ ] Rinsate Blank

[ ] Source Water Blank (Field Blank) [ ] Other Blank _____

SAMPLING DATA:

Date: 101014
Time: 830
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared [] Tap
[] Purchased [] Fire Hydrant
[] Other _____

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: _____
Supplier: _____
Manufacturer: _____
Order Number: _____
Lot Number: _____
Expiration Date: _____

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used: _____
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH-GRO (MTBE- Naphthalene)	≤6°C, 5 ml MeOH	1 x 40 ml vial w/MeOH	(YES) / NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, CED Area, N. Kingstown, RI	Sample ID Number:	TB02 -101314
Project Number:	112G01813/ CTO WE01	Sampled By:	Jalkut/Seward/Pryor
Sample Location:		C.O.C. Number:	

QA Sample Type:

[X] Trip Blank [ ] Rinsate Blank

[ ] Source Water Blank (Field Blank) [ ] Other Blank _____

SAMPLING DATA:		**WATER SOURCE:**	
Date:	101314	[X] Laboratory Prepared	[] Tap
Time:	800	[] Purchased	[] Fire Hydrant
Method:	Provided by the lab	[] Other	

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):		**RINSATE INFORMATION (If Applicable):**	
Product Name:		Media Type:	NA
Supplier:		Equipment Used:	
Manufacturer:		Equipment Type:	
Order Number:			[ ] Dedicated
Lot Number:			[ ] Reusable
Expiration Date:			[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH-GRO (MTBE- Naphthalene)	≤6°C, 5 ml MeOH	1 x 40 ml vial w/MeOH	(YES)/ NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Fmr NCBC Davisville, CED Area, N. Kingstown, RI	Sample ID Number:	TB03 -101414
Project Number:	112G01813/ CTO WE01	Sampled By:	Jalkut/Seward/Pryor
Sample Location:		C.O.C. Number:	

QA Sample Type:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 101414
Time: 800
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH-GRO (MTBE- Naphthalene)	≤6°C, 5 ml MeOH	1 x 40 ml vial w/MeOH	(YES) / NO

OBSERVATIONS / NOTES:

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0010204
Sample Location: 03SB001
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0905	2.0 - 4.0	Brown and Tan	Layer 1 (2-2.8') - Sand (f-c) Tr. Gravel (f); Layer 2 (2.8-3.4') - Sand (f); poorly graded Layer 3 (3.4-3.9') - Sand (f-c), some Gravel (f+c)
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description. 03SB001 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2B interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0010406
Sample Location: 03SB001
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	4.0 - 6.0	Tan to Dk Brown	Sand (f-c) overlying Sand (f-m), some Gravel (f+c); dry, no stains, no odors
Time:	0915			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤ 6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤'6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB001 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3B interval (f-m sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0010610
Sample Location: 03SB001
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0920	6.0 - 10.0	Dk Brown/Lt. Tan/Tan	Sand (f-m), some Gravel (f+c) overlying layers of poorly graded Sand (f) and well graded Sand (f-c), some Gravel (f+c); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤ 6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB001 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the bottom of the S-4B interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0020204
Sample Location: 03SB002
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	2.0 - 4.0	Gray/Brown	Sand (f-c) and Gravel (f+c), Trace Silt w/rock fragments at bottom of liner; dry, no stains, no odors.
Time:	0935			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB002 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of the S-2 interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0020406
Sample Location: 03SB002
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	4.0 - 6.0	Gray/Brown/Brn/Dk Gray excluding rock colors	Alternating layers of poorly graded sand w/ gravel and broken rock overlying silty sand w/gravel; dry, no stains, no odors.
Time:	0940			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB002 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3C interval (f-m sand, little to few f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0020610
Sample Location: 03SB002
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	6.0 - 10.0	Various shades of Gray, Brown, and Tan	Poorly graded sand w/silt & gravel, broken rock; overlying well graded sand & gravel; dry, no stains, no odors
Time:	0945			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB002 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4D interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0030204
Sample Location: 03SB003
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1005	2.0 - 4.0	Various shades of Gray and Brown to Reddish/Brown	Layer 1 - Sand (f-m), tr - some Gravel (f); Layer 2- Sand (f-m), some Gravel (f); Layer 3 - broken rock; Layer 4 - Sand (f-m), some Gravel (f); Layer 5 - Sand (f-m), tr. Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB003 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2E interval (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0030406
Sample Location: 03SB003
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	4.0 - 6.0	Gray/Brown to Brown	Sand (f-c), tr. gravel (f) overlying Sand (f); dry, no stains, no odors
Time:	1010			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB003 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3B interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0030610
Sample Location: 03SB003
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1015	6.0 - 10.0	Brown to Gray/Brown to Tan	Layer 1 - Sand (f); Layer 2 - Sand (f-c) and Gravel (f); Layer 3 - Sand (m); Layer 4 - Sand (f-c) and Gravel (f); Layer 5 - Sand (m), tr. Gravel (f); Layer 6 - Sand (f-c) and Gravel (f+c)
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB003 is a biased sample location. Alternating layers of poorly graded sand and well graded sand w/ gravel. In the 6-10 ft interval, the GRO fraction was collected from the S-4D interval (f-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0040204
Sample Location: 03SB004
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	2.0 - 4.0	Tan- Gray to Gray/Brown	Sand (f), tr. Gravel (coarse) overlying Sand (f-c) and Gravel (f+c); broken rock; dry, no stains, no odors
Time:	1055/0000			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	2 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB004 is a biased sample location. This is a location with a historical hit. In the 2-4 ft interval, the GRO fraction was collected from the S-2B interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	DUP01 or FD01-101014)

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0040406
Sample Location: 03SB004
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	4.0 - 6.0	Various shades of Gray/Brown/ Reddish Brown	Layer 1 - Sand (f-c) and Gravel (f-c); Layer 2 - Sand (m), tr. Gravel (f); Layer 3 - Sand (f-c) and Gravel (f+c); Layer 4 - broken rock; dry, no stains, no odors
Time:	1100			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB004 is a biased sample location. This is a location with a historical hit.
In the 4-6 ft interval, the GRO fraction was collected from the S-3C interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0040610
Sample Location: 03SB004
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	6.0 - 10.0	Gray/Brown w/Red	Sand (f-c) and Gravel (f+c), broken rock fragments (some oxidized); dry, no stains, no odors
Time:	1105			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB004 is a biased sample location. This is a location with a historical hit.
In the 6-10 ft interval, the GRO fraction was collected from S-4, approximately 3 ft down from the top of the recovered interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0050204
Sample Location: 03SB005
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	2.0 - 4.0	Brown	Sand (f-m, tr coarse), little gravel (f+c); dry, no stains, no odors
Time:	1120			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB005 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2 interval (f-m sand, f+c gravel), approximately 3/4 way down the recovered soil core; the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0050406
Sample Location: 03SB005
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	4.0 - 6.0	Various shades of Brown/Red-Brown/Tan/Gray	Well graded sand w/gravel overlying poorly graded sand w/ silt and poorly graded sand; dry, no stains, no odors
Time:	1125			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB005 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from near the bottom of the S-3B interval (f-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0050610
Sample Location: 03SB005
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	6.0 - 10.0	Various shades of Tan, Red-Brown, Brown, & Gray	Poorly graded sand w/ silt overlying poorly graded sand & broken rock; overlying silty sand, well graded sand, and well graded sand w/gravel
Time:	1130			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB005 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the bottom of the S-4E interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0060204
Sample Location: 03SB006
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	2.0 - 4.0	Tan Brown to Lt Gray	Sand (med) tr. Gravel (f) overyling Sand (m-c) and little Gravel (f). The bottom interval consists of Sand (f)
Time:	1150			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description. 03SB006 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2C interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0060406
Sample Location: 03SB006
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	4.0 - 6.0	Lt Gray to Dk Gray	Sand (f) overyling a layer of Silty Sand (f-m) tr. Gravel (f); dry, no stains, no odors
Time:	1155			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB006 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of the S-3B interval (silty f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0060610
Sample Location: 03SB006
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1200	6.0 - 10.0	Dk Brown/Gray, Gray Brn, and Black/Dk Gray	Well graded sand w/silt & gravel, broken rock overlying wg sand w/gravel, silty sand, and wg sand w/ gravel; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

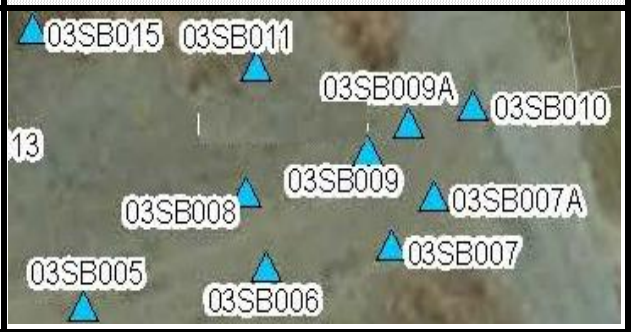
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB006 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the lower portion of the S-4 interval (4D = silty f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0070204
Sample Location: 03SB007
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	2.0 - 4.0	Gray/Brown	Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	1220			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

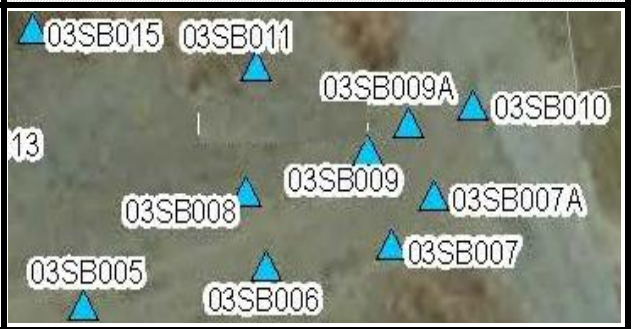
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB007 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected in the middle of the S-2 interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0070406
Sample Location: 03SB007
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	4.0 - 6.0	Gray/Brown	Sand (f-c) and Gravel (f+c) w/ some oxidized rock fragments; dry, no stains, no odors
Time:	1225			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB007 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the oxidized zone in the S-3 interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0070610
Sample Location: 03SB007
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	6.0 - 10.0	Various shades of Gray, Tan to Red Brown, Tan-Brn, and Gray-Brn excluding color of rock	Layer 1 - Sand (f-c) and Gravel (f); Layer 2 - Sand (m); Layer 3 - Sand (f); Layer 4 - Sand (f-c) and Gravel (f+c); Layer 5 - broken rock; Layer 6 - Sand (f-c) and Gravel (f+c)
Time:	1230			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

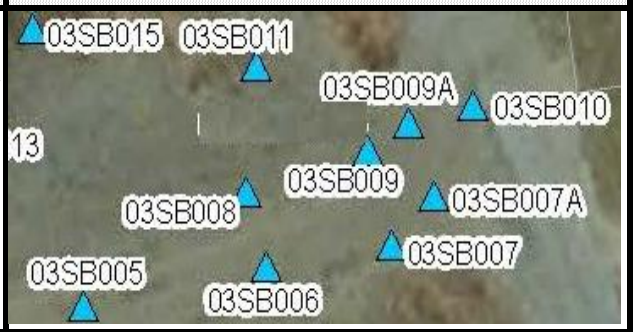
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Oxidized grains in S-4B; oxidized fragments in S-4D and S-4E. 03SB007 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the bottom of the S-4F interval (darker portion, f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB007a0204
Sample Location: 03SB007a
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	2.0 - 4.0	Brown	Sand (f-m), few Gravel (f), trace Silt; dry, no stains, no odors
Time:	1020			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Checked position of SB007 after drilling. Advanced a 2nd boring (7a) when it was discovered that the 1st attempt at the SB007 boring was in the wrong place (pin flag missing). 03SB007a is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected in the middle of the S-2 interval (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB007a0406
Sample Location: 03SB007a0406
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1025			
Method:	acetate sleeve	4.0 - 6.0	Brown	Sand (f-m), tr. Gravel (f); dry, no stains, no odors
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Checked position of SB007 after drilling. Advanced a 2nd boring (7a) when it was discovered that the 1st attempt at the SB007 boring was in the wrong place (pin flag missing). 03SB007a is a biased sample location. Poor recovery. In the 4-6 ft interval, the GRO fraction was collected in the middle of the S-3 interval (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB007a0610
Sample Location: 03SB007a
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1030	6.0 - 8.5 (refusal)	Brn to Tan to various shades of Gray	Layer 1 - Sand (f-c) and Gravel (f + c); Layer 2 Sand (mostly fine), trace Gravel (coarse); Layer 3 - Silty fine Sand, little gravel (f+c); Layer 4 - broken rock; Layer 5 - Sand (f-m) - rock fragments; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

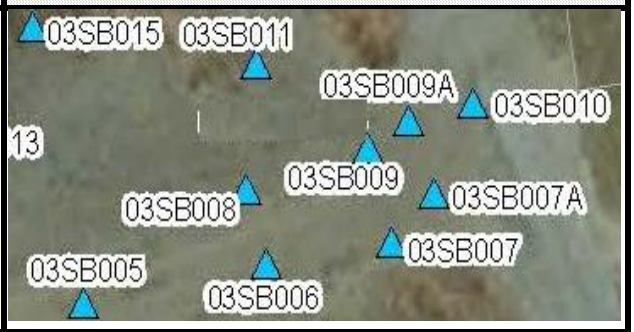
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Checked position of SB007 after drilling. Advanced a 2nd boring (7a) when it was discovered that the 1st attempt at the SB007 boring was in the wrong place (pin flag missing). 03SB007a is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from S-4B (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.
Refusal encountered at 8.5 ft bgs at 03SB007a. **NOTE - THE 0610 SAMPLE DESIGNATION SHOULD HAVE BEEN LABELED 0608.5.**

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0080204
Sample Location: 03SB008
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	2.0 - 4.0	Tan-Brown	Sand (mostly f, tr med, tr coarse), tr. Gravel (f); dry, no stains, no odors
Time:	1250/0000			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	2 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB008 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected approximately 3/4 the way down the soil core, where both fine and coarse sand were present; the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	DUP02 or FD02-101014

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0080406
Sample Location: 03SB008
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014			
Time:	1255			
Method:	acetate sleeve	4.0 - 6.0	Lt Tan/Brown to Gray/Brown	Layer 1 - Sand (f, tr med), Tr Gravel (f); Layer 2 - Sand (f-m), tr. Gravel (f); Layer 3 - Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH,≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB008 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3B interval (f-m sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.
Collected GRO fraction from S-3B interval (fine-m sand, tr c sand, tr f gravel); soil then homogenized and DRO fraction collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0080610
Sample Location: 03SB008
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	6.0 - 10.0	Dk Gray to Gray-Red/Brown, excluding color of broken rock	Layer 1 - Sand (f-m) and Gravel (f); Layer 2 - broken rock; Layer 3 - Sand (f-c) and Gravel (f+c); Layer 4 - broken rock fragments
Time:	1300			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB008 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4A interval (f-m sand, f gravel, oxidized, ~10% fines); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0090204
Sample Location: 03SB009
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	2.0 - 4.0	Tan/Brown to Gray/Brown to Gray	Sand (f) little Gravel (f) overlying a layer of Sand (f-c) and Gravel (f-c) overlying a layer of Sand (m) tr. Gravel (f)
Time:	1320			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB009 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from S-2B (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0090406
Sample Location: 03SB009
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014			
Time:	1325			
Method:	acetate sleeve	4.0 - 6.0	Tan/Brown	Two layers of Sand (f-c) and Gravel (f-c), with a layer of Sand (m) and Gravel (f) in between; dry, no stains, no odors.
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB009 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from S-3B (m sand, tr f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0090610
Sample Location: 03SB009
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	6.0 - 10.0	Various shades of Brn-Gray, Dk Gray, Gray-Brn, and Red-Brn	PG Sand; WG Sand; Silty Sand w/ gravel; PG Sand; WG Sand w/gravel; and Broken Rock; dry, no stains, no odors
Time:	1330			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

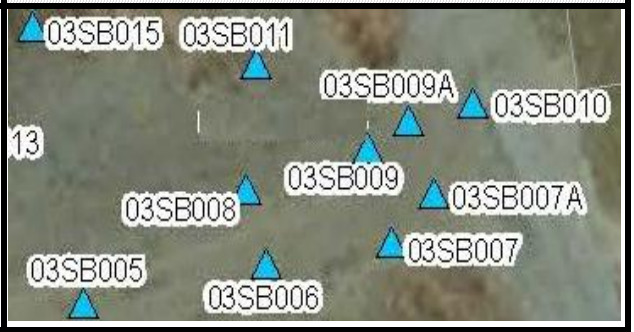
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB009 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from S-4B (f-c sand, oxidized, tr f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB009a0204
Sample Location: 03SB009a
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1000	2.0 - 4.0	Brown	Sand (f-m), Little Gravel (f+c), Little Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Checked position of SB009 after drilling. Advanced a 2nd boring when it was discovered that the 1st attempt at the SB009 boring was in the wrong place (pin flag missing). 03SB009a is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of S-2 (f-m sand, f=c gravel, ~10-15% fines); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB009a0406
Sample Location: 03SB009a0406
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	4.0 - 6.0	Brown	Sand (f-m) and Gravel (f+c); dry, no stains, no odors
Time:	1005			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Checked position of SB009 after drilling. Advanced a 2nd boring when it was discovered that the 1st attempt at the SB009 boring was in the wrong place (pin flag missing). 03SB009a is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of S-3 (f-m sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD: ----

Duplicate ID No.: -----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0090610
Sample Location: 03SB009
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Brn to Dk Gray to Gray-Brn and Lt Gray-Brn w/Red	Layer 1 - Sand (f-m) little Gravel (f-c); Layer 2 - Silty Sand, Tr Gravel; Layer 3 - Sand (f-c) and Gravel (f+c), Little Silt; dry, no stains, no odors
Time:	1010			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Checked position of SB009 after drilling. Advanced a 2nd boring when it was discovered that the 1st attempt at the SB009 boring was in the wrong place (pin flag missing). 03SB009a is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4A interval (f-m sand, little f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0100204
Sample Location: 03SB010
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0935	2.0 - 4.0	Brn	Sand (f), little Silt overlying a layer of Sand (f-m), some Gravel (f+c), little Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Location in road. 03SB010 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from S-2B (f-m sand, f+c gravel, little silt); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0100406
Sample Location: 03SB010
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	4.0 - 6.0	Brn to Light Gray	Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	0940			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Location on road. 03SB010 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from S-3A (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0100610
Sample Location: 03SB010
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Tan Brn/Tan/Dk Gray/Dk Red/Brn and Gray	Layer 1 - Sand (f-c) and Gravel (f+c); Layers 2 and 3 - Sand (f) w/ coarsening sand at bottom; Layer 4 - Silty Sand (f) w/Gravel (f+c); Layer 5 - WG Sand (f-c) w/ Gravel (f+c), little Silt; dry, no stains, no odors
Time:	0945			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Location in road. 03SB010 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from S-4C (f-m sand, oxidized); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0110204
Sample Location: 03SB011
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	2.0 - 4.0	Lt. Brn	Sand (f-m) with some Gravel (f+c) overlying a layer of Sand (med.); dry, no stains, no odors
Time:	1115			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB011 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the bottom of S-2B (medium sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0110406
Sample Location: 03SB011
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1120	4.0 - 6.0	Various shades of Gray-Brn, Red-Brn, & Tan-Brn, excluding color of rock fragments	3 layers of wg sand w/gravel, 2 layers of broken rock, and a thin layer of pg sand; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB011 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of S-3C (medium sand, oxidized zone); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0110610
Sample Location: 03SB011
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Various shades of Tan-Brn to Red-Brn to Dk Gray to Dk Brn	WG sand w/gravel to pg sand to 3 layers of silty sand w/ gravel and 2 in-between layers of broken rock; dry, no stains, no odors
Time:	1125			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB011 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the middle of S-4B (med sand, oxidized grains); the soil was then homogenized and the DRO fraction was collected from mixed soil. Oxidized spots also observed at S-4G interval.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0120204
Sample Location: 03SB012
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1045			
Method:	acetate sleeve	2.0 - 4.0	Lt. Brn to Gray-Brn	Sand (f) with tr. Gravel (f) overlying a layer of Sand (f-c) and Gravel (f+c), tr Silt; dry, no stains, no odors
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB012 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of S-2B (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0120406
Sample Location: 03SB012
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	4.0 - 6.0	Gray-Brn	Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	1050			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB012 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of S-3 (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0120610
Sample Location: 03SB012
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Various shades of Gray to Gray-Brn overlying shades of Tan-Brown & Brn	Silty Sand w/ gravel with an in-between layer of broken rock overlying wg sand w/gravel and an in-between layer of pg sand; dry, no stains, no odors
Time:	1055			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB012 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the middle of S-4C (silty sand w/gravel interval); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0130204
Sample Location: 03SB013
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	2.0 - 4.0	Brn	Sand (f-m) little Gravel (f); dry, no stains, no odors
Time:	1215			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB013 is a biased sample location. Poor recovery. In the 2-4 ft interval, the GRO fraction was collected from the middle of S-2 (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0130406
Sample Location: 03SB013
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1220			
Method:	acetate sleeve	4.0 - 6.0	Brn	Sand (f-m) little Gravel (f); dry, no stains, no odors
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB013 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of S-3 (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0130610
Sample Location: 03SB013
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1225	6.0 - 10.0	Brn to Gray-Brn	Layer 1 - Sand (f-m) some Gravel (f+c), tr Silt; Layer 2 - Sand (f-c) and Gravel (f+c), tr Silt; Layer 3 - Sand (f-c) and Gravel (f+c) w/pulverized rock, tr Silt; Layer 4 - Sand (f-c) and Gravel (f+c), tr Silt
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, 6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Basically poorly graded sand overlying a well graded sand w/gravel, tr silt.
03SB013 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the top of the recovered soil core (f-m sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0140204
Sample Location: 03SB014
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1305			
Method:	acetate sleeve	2.0 - 4.0	Tan-Brn	Sand (f-m,) some Gravel (f); dry, no stains, no odors
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB014 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of S-2 (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0140406
Sample Location: 03SB014
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	4.0 - 6.0	Tan/Brown	Sand (f-m), some Gravel (f); dry, no stains, no odors
Time:	1310			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB014 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of S-3 (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:	Signature(s):
----	-----	Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0140610
Sample Location: 03SB014
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Brn to Dk Gray to Gray-Brn	Layer 1 - Sand (f-m), some Gravel (f); Layer 2 - Sand (m), little Gravel (f); Layer 3 - Silty Sand (f), some Gravel (f); Layer 4 - Sand (m) little Gravel (f); dry, no stains, no olfactory evidence of odor
Time:	1315			
Method:	acetate sleeve			
Monitor Reading (ppm):	6.2 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab. Basically poorly graded sand w/gravel on top and bottom w/an interval of silty sand w/ gravel in-between these layers. 03SB014 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the top of the recovered soil core (S-4A, f-m sand, f gravel), where a PID reading up to 6.2 ppm was encountered; soil then homogenized and DRO fraction collected from mixed soil. No visual evidence of stains or olfactory evidence of odor noted from this interval.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0150204
Sample Location: 03SB015
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	2.0 - 4.0	Gray-Brn to Tan-Brn to Yellow-Brn	Top layer - Sand (f-c) and Gravel (f-c) w/black chips; Middle layer - Sand (f); Bottom layer - Sand (f-c) little Gravel (f); dry, no stains, no odors
Time:	1335			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB015 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2B interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0150406
Sample Location: 03SB015
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	4.0 - 6.0	Brn to Tan-Brn to Dk Gray, excluding color of broken rock	PG graded sand w/broken rock; WG sand w/ gravel and broken rock as an in-between layer; overlying silty sand w/gravel at bottom; dry, no stains, no odors
Time:	1340			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB015 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3E interval (f-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0150610
Sample Location: 03SB015
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Dk Gray to Tan-Brn, excluding color of broken rock intervals	2 layers of Silty Sand, some Gravel (f) with a broken rock layer in between overlying 2 layers of WG Sand w/ gravel with a broken rock layer in between these layers; dry, no stains, no odors
Time:	1345			
Method:	acetate sleeve			
Monitor Reading (ı	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

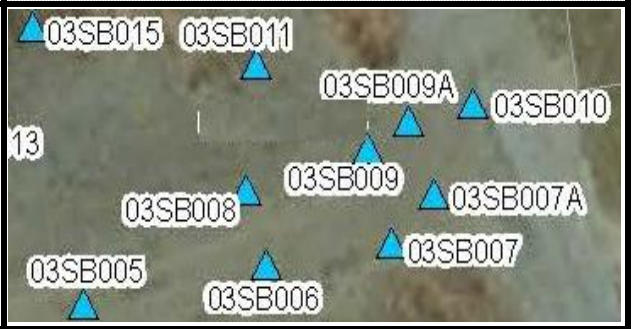
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB015 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4C interval (silty f sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0160204
Sample Location: 03SB016
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1145/0000			
Method:	acetate sleeve	2.0 - 4.0	Brn to Tan-Brn to Red-Brn	2 layers of Silty Sand (f) w/gravel with a layer of Sand (f-c) and Gravel (f) in between these layers; dry, no stains, no odors
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	2 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB016 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2B interval (f-c sand, f gravel [coarse interval between two fine-grained intervals]); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	FD03-101314 (DUP03)

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0160406
Sample Location: 03SB016
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1150			
Method:	acetate sleeve	4.0 - 6.0	Brn	Sand (f-m) and Gravel (f); dry, no stains, no odors
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB016 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of S-3 (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0160610
Sample Location: 03SB016
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Brn to Gray w/Red-Brn to Red-Brn to Dk Gray	Layer 1 - Sand (f-m) little Gravel (f); Layer 2 - Sand (f) tr. Gravel, oxidized interval; Layer 3 - Sand (m); Layer 4 - Silty Sand (f) some Gravel (f+c); dry, no stains, no odors
Time:	1155			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Basically a PG sand unit w/ gravel overlying a silty sand unit w/gravel.
03SB016 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4D interval (silty f sand, f+c gravel, till-like); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0170204
Sample Location: 03SB017
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	2.0 - 4.0	Dk Brn to Lt Brn to Tan-Brn	Sand (f), tr Silt overlying a layer of Sand (f), tr. Gravel (f); dry, no stains, no odors
Time:	1405			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Location in road. Removed asphalt surface w/ dedicated bit prior to drilling.
03SB017 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the bottom of the soil core (S-2C, f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0170406
Sample Location: 03SB017
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1410	4.0 - 6.0	Various shades of Brn	Layers 1, 2= Sand (f); Layer 3 - Sand (f-m), tr. Gravel (f); Layer 4 - Sand (f-c) and Gravel (f+c), broken and oxidized rock fragments; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Location on asphalt road. Removed asphalt w/ a dedicated bit prior to sampling. 03SB017 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3D interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0170610
Sample Location: 03SB017
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Various shades of Brn, Orange-Yellow, Dk Gray	Layer 1 - Sand (f-m); Layer 2 - Sand (f); Layer 3 - Sand (f-c) and Gravel (f+c); Layer 4 - Sand (m-c), little Gravel (f); Layer 5 - Sand (f); Layer 6 - Silty Sand (f) some Gravel (f) w/oxidized spots; dry, no stains, no odors
Time:	1415			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab. Location in road. Removed asphalt w/a dedicated bit prior to drilling. 03SB017 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4E interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0180204
Sample Location: 03SB018
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1520			
Method:	acetate sleeve	2.0 - 4.0	Brown to Gray-Brn	Sand (f-m), little Gravel (f-c) overlying Sand (f-c) and Gravel (f+c), tr Silt; dry, no stains, no odors
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB018 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the bottom of the recovered soil core (S-2B, f-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0180406
Sample Location: 03SB018
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1525	4.0 - 6.0	Dk Brn to Gray-Brn to Orange-Brn, excluding color of broken rock	Layer 1 - Sand (f-c); Layer 2 - Sand (f-c) and Gravel (f); Layer 3 - Broken, pulverized rock; Layer 4 - Sand (f-c), and Gravel (f+c).
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab. Basically, interval consists of WG sand w/gravel with a layer of broken rock. 03SB018 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the bottom of the recovered soil core (S-3D, f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0180610
Sample Location: 03SB018
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Various shades of Gray-Brn and Dk Gray, excluding color of broken rock	Layer 1 - Sand (f-m) little Gravel (f), tr Silt; Layer 2 - Silty Sand (f) some Gravel (f+c), oxidized spots; Layer 3 - pulverized, oxidized rock fragments; Layer 4 - Sand (f-c) and Gravel (f+c); Layer 5 - weathered broken rock; Layer 6 - Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	1530			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB018 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4B interval (silty f sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0190204
Sample Location: 03SB019
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1540	2.0 - 4.0	Gray/Brown	Sand (f-c) and Gravel (f+c), tr Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB019 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of the S-2 soil core (f-c sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0190406
Sample Location: 03SB019
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1545	4.0 - 6.0	Various shades of Gray-Brn, Gray, and Red-Brn	Layer 1 - Sand (f-c) and Gravel (f+c) w/ oxidized spots; Layer 2 - Sand (f); Layers 3 and 4 - Sand (m) w/oxidized spots; Layer 5 Silty Sand (f), some Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ı 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab. Basically this interval consists of WG Sand w/gravel, PG Sand, and Silty f Sand, some f Gravel. 03SB019 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from S-3D (f Sand, gray); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0190610
Sample Location: 03SB019
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Gray/Brown to Gray	Two layers of oxidized Sand (f-c) and Gravel (f+c) separated by a layer of pulverized rock; dry, no stains, no odors
Time:	1550			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
Basically this unit consists of 2 layers of WG Sand w/gravel with a layer of broken rock in between the layers. 03SB019 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the top of the recovered interval (S-4A, f-c Sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0200204
Sample Location: 03SB020
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1625	2.0 - 4.0	Gray/Brown	Sand (f-c) and Gravel (f+c), tr Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB020 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of S-2 (coarse grained interval, similar to S-1C); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0200406
Sample Location: 03SB020
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1630	4.0 - 6.0	Tan-Brn to Red-Gray-Brn to Dk Gray	Top layers - Sand (f) overlying a layer of Sand (m) w/oxidized grains. Bottom layer - Silty Sand (f), some Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB020 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of S-3 (medium sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0200610
Sample Location: 03SB020
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1635	6.0 - 10.0	Dk Gray to Dk Red-Brn to Red Brn	Layer 1 - Silty Sand (f), some Gravel (f); Layer 2 - Sand (f-c), some Gravel (c), little Silt; Layer 3 - Sand (f-c, oxidized grains) and Gravel (f+c), tr Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB020 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the bottom of S-4 (sand & gravel, tr silt); the soil was then homogenized and the DRO fraction collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0210204
Sample Location: 03SB021
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	2.0 - 4.0	Dk Brn	Sand (mostly fine), tr Silt; dry, no stains, no odors
Time:	1650			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB021 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of the S-2 soil core (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0210406
Sample Location: 03SB021
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	4.0 - 6.0	Brown, Gray Brn, and Red Brn excluding color of pulverized rock	Layer 1 - Sand (f) tr. Gravel (f); Layer 2 - Sand (f-c) and Gravel (f+c); Layer 3 - pulverized rock; Layer 4 - Sand (f-c) little Gravel (f); Layer 5 - Sand (f-m); dry, no stains, no odors
Time:	1655			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB021 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from S-3D (f-c sand, f gravel, oxidized); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0210610
Sample Location: 03SB021
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1700	6.0 - 10.0	Gray-Brn/Red-Brn/Orange-Brn/Dk Gray	Top layers - Sand (f-m) with a layer of Sand (f-c) and Gravel (f+c) in between. Bottom layer - Silty Sand (f) some Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB021 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from S-4C (f-m sand, oxidized); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0220204
Sample Location: 03SB022
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1445			
Method:	acetate sleeve	2.0 - 4.0	Tan/Brown	Sand (Mostly fine); dry, no stains, no odors
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	3 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB022 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of the S-2 soil core (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes, Lab QC #4	----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0220406
Sample Location: 03SB022
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	4.0 - 6.0	Tan-Brn and Gray-Brn	Layer 1 - Sand (f); Layer 2 - Sand (f-c) and Gravel (f+c); Layer 3 - Sand (m); Layer 4 - Sand (f-c) and Gravel (f); dry, no stains, no odors
Time:	1450			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB022 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from S-3C (mostly med sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0220610
Sample Location: 03SB022
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	6.0 - 10.0	Various shades of Brown and Gray	9 layers overall including 2 layers of PG sand w/WG Sand & Gravel in between; 2 alternating layers of Silty Sand w/ gravel and broken rock; overlying a WG sand w/gravel unit; dry, no stains, no odors
Time:	1455			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB022 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the middle of the S-4 soil core (Silty f Sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0230204
Sample Location: 03SB023
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Dk Brn/Tan-Brn/Tan	Sand (f-c) and Gravel (f-c) overlying Sand (mostly medium, oxidized), tr. Gravel (f) and a layer of sand (mostly medium, not oxidized); dry, no stains, no odors
Time:	0840			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	3 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB023 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of the S-2 soil core (m sand, oxidized); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes, Lab QC #5	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0230406
Sample Location: 03SB023
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0845	4.0 - 6.0	Brn-Gray/Gray/Red-Orange Brn/Dk Gray	Layer 1 - Sand (f-c) and Gravel (f+c); Layers 2 and 3 - Sand (f, oxidized); Layer 4 - Sand (f-c) some Gravel (f); Layer 5 - Silty Sand (f) some Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB023 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from S-3B near the top of the recovered interval (f sand, oxidized); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0230610
Sample Location: 03SB023
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0850	6.0 - 10.0	Dk Gray/Red-Brown	Layer 1 - Silty Sand (f) some Gravel (f); Layer 2- Silty Sand (f) some Gravel (coarse); Layer 3- Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB023 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4B interval (Silty f Sand, c. gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0240204
Sample Location: 03SB024
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Gray-Dk Brn to Tan, excluding color of broken rock	Two layers of Sand (f-c) and Gravel (f+c) with a layer of broken rock in between. Bottom layer consists of Sand (f); dry, no stains, no odors
Time:	0915			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB024 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the top of the S-2 soil core (f-c sand; f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0240406
Sample Location: 03SB024
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0920	4.0 - 6.0	Gray-Brn/Orange-Brn/Dk Gray	Layer 1 - Sand (f-c) and Gravel (f); Layer 2 - Sand (mostly med, oxidized); Layer 3 - Silty Sand (f) some Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB024 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3C interval (Silty f sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0240610
Sample Location: 03SB024
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	6.0 - 10.0	Dk Gray/Gray-Brn-Orange/Dk Brn-Gray	Two layers of Silty Sand (f) tr. to some Gravel (f) with a layer of Sand (f-c) and Gravel (f) in between; dry, no stains, no odors
Time:	0925			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB024 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4B interval (f-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil. **NOTE: REFUSAL ENCOUNTERED AT 8.5 FT BGS. DEPTH INTERVAL FOR LAST INTERVAL SHOULD HAVE BEEN 0608.5 (6-8.5 FT BGS).**

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0250204
Sample Location: 03SB025
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Brown/Orange-Brn	Sand (f) little Gravel (f) overlying a layer of Sand (f-c) and Gravel (f); dry, no stains, no odors
Time:	0945			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB025 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2A interval (mostly f sand, little f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0250406
Sample Location: 03SB025
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	4.0 - 6.0	Gray-Brn to Dk Gray	Sand (f-c) and Gravel (f+c) overlying Silty Sand (f) and Gravel (f); dry, no stains, no odors
Time:	0950			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB025 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3B interval (silty f sand w/gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0250610
Sample Location: 03SB025
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	6.0 - 10.0	Brown/Tan-Brn/Dk Gray/Orange-Brn, excluding color of broken rock	Layer 1 - Sand (f-c) and Gravel (f+c); Layer 2 - Sand (f) little Gravel (f); Layer 3 - broken rock; Layer 4 - Silty Sand (f) few Gravel (f); Layer 5 - Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	0955			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB025 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4D interval (silty f sand, few gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0260204
Sample Location: 03SB026
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014			
Time:	1010			
Method:	acetate sleeve	2.0 - 4.0	Dk Gray-Brown to Brn	Silty Sand (f) (>15% fines), little Gravel (f) overlying Sand (f), little Silt (~10% fines); dry, no stains, no odors
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB026 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2A interval (silty f sand, little gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0260406
Sample Location: 03SB026
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1015	4.0 - 6.0	Gray/Brown to Gray Orange-Brn	Sand (f-c) and Gravel (f-c); increasing oxidation w/depth; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB026 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the top of the recovered soil core, S-2A (silty f sand, little gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0260610
Sample Location: 03SB026
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1020	6.0 - 10.0	Gray-Brn/Tan-Gray Red-Orange/Dk Gray	Layer 1 - Sand (f-c) tr. Gravel (f); Layer 2 - Sand (f, oxidized); Layer 3 - Silty Sand (f) little Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB026 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the middle of the S-4 soil core (f sand, oxidized); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0270204
Sample Location: 03SB027
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Brn, excluding color of broken rock	Layer 1 - Broken rock; Layer 2 - Sand (f-c) and Gravel (f+c), tr Silt; Layer 3 Sand (f-m) little Gravel (f); dry, no stains, no odors
Time:	1100/0000			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	2 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB027 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of the S-2 soil core (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	FD06-101414 (DUP06)

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0270406
Sample Location: 03SB027
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	4.0 - 6.0	Brown	Sand (f-m), little Gravel (f-c), tr Silt; dry, no stains, no odors
Time:	1105			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB027 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of the recovered S-3 soil core (f-m sand, little f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0270610
Sample Location: 03SB027
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1110	6.0 - 10.0	Brown	Sand (f-m), some Gravel (f+c), tr. Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab. 03SB027 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the middle of the S-4 interval (f-m sand, some gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0280204
Sample Location: 03SB028
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014			
Time:	1035			
Method:	acetate sleeve	2.0 - 4.0	Gray/Brown	Sand (f-c) and Gravel (f); dry, no stains, no odors
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB028 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected approx 3/4 the way down from the top of the recovered soil core (f-c sand, mostly f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0280406
Sample Location: 03SB028
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1040	4.0 - 6.0	Red-Brn/Gray-Brn/Dk Gray	Sand (f-c) and Gravel (f+c), very oxidized at top w/less oxidation evidence at S-3B. The bottom layer consisted of Silty Sand (f), little Gravel (f), oxidized; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ı 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB028 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3B interval (f-c sand, f+c gravel, no oxidation evidence); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0280610
Sample Location: 03SB028
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1045	6.0 - 10.0	Gray-Brn to Dk Brn-Gray to Gray-Brn, excluding color of broken rock	2 Layers of Sand (f-c) and Gravel (f+c) with layers of Silty Sand (f), little Gravel (f) and broken rock in between; dry, no stains, no odors.
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB028 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4B interval (silty f sand, little gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0290204
Sample Location: 03SB029
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1155	2.0 - 4.0	Lt Gray-Brown to Dk Brn to Gray to Dk Brn	Sand (f-c) and Gravel (f+c) overlying layers of Sand (f) and broken rock; dry, no stains, no odors.
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB029 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2D interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0290406
Sample Location: 03SB029
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1200	4.0 - 6.0	Dk Brn/Gray-Brn/Gray Orange-Yellow Brn/Dk Gray	Layer 1 - Sand (f), tr Silt; Layer 2 - Sand (f-c) and Gravel (f+c); Layer 3 - Sand (m) tr. Gravel (f); Layer 4 - Silty Sand (f) tr. Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description. Driller overdrove liner in the 4-6 ft interval. Total depth was to 7 ft. Soil from 6-7 ft was logged but not sampled for analysis.
Sample was originally placed on hold and later analyzed by the lab.
03SB029 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3C interval (m sand, tr f gravel, oxidized); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0290610
Sample Location: 03SB029
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1205	6.0 - 10.0	Dk Gray to Gray-Brown	Silty Sand (f) tr. Gravel (f) overlying Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description. A second boring was advanced next to the original boring b/c driller overdrove the liner from the previous interval. This interval represents soil observed from 6-10 ft bgs. Sample was originally placed on hold and later analyzed by the lab. 03SB029 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4A interval (silty f sand, tr gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0300204
Sample Location: 03SB030
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1225	2.0 - 4.0	Dk Brn to Tan	Silty Sand (f) little Gravel (f) overlying Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB030 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2A interval (silty f sand, little f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0300406
Sample Location: 03SB030
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	4.0 - 6.0	Gray-Brn to Tan-Brn to Dk Gray	Layer 1 - Sand (f-c) and Gravel (f); Layer 2 - Sand (f); Layer 3 - Silty Sand (f) little Gravel (f)
Time:	1230			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB030 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3A interval (f-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0300610
Sample Location: 03SB030
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1235	6.0 - 10.0	Dk Gray/Gray-Brn/Gray/Tan-Brn, excluding color of broken rock	Layer 1 - Silty Sand (f) tr. Gravel (f); Layer 2 - broken rock; Layer 3 - Sand (f-c) and Gravel (f+c); Layer 4 (more gravel than sand) - Sandy (f-c) Gravel (f+c); Layer 5 - Sand (m) tr. Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB030 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4C interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0310204
Sample Location: 03SB031
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1300	2.0 - 4.0	Dk Brn to Light Brn	Layer 1 - Sand (f); tr Silt Layer 2 - Sand (f-c) tr. Gravel (f); tr Silt Layer 3 - Sand (f-m) little Gravel (f); tr Silt; Dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB031 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2B interval (f-c sand, tr f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0310406
Sample Location: 03SB031
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1305	4.0 - 6.0	Gray-Brn to Dk Brn, excluding color of broken rock	A layer of Sand (m-c) tr. Gravel (f) and a layer of Silty Sand (f) tr. Gravel (f) with a layer of broken rock in between; dry, no stains, no odors.
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB031 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3A interval (m-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0310610
Sample Location: 03SB031
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1310	6.0 - 10.0	Dk Gray	Silty Sand (f) tr. to little Gravel (f); oxidized coarse sand threads w/l the silty sand; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB031 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the middle of the S-4 interval (silty f sand, tr to littel gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0320204
Sample Location: 03SB032
Sampled By:
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Lighter Brn to Light Tan to Brn	2 layers of Sand (f)(different colors) overlying Sand (f-m); dry, no stains, no odors
Time:	1410/0000			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	2 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB032 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from the S-2B interval (f sand, light tan); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	FD07-101414 (DUP07)

Signature(s): Kayleen Jackett

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0320406
Sample Location: 03SB032
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	4.0 - 6.0	Dk Gray	Silty Sand (f) few Gravel (f), oxidized spots and threads; dry, no stains, no odors
Time:	1415			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB032 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the middle of the S-3 interval (silty f sand, few gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0320610
Sample Location: 03SB032
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	6.0 - 10.0	Dk Gray, excluding color of broken rock	Alternating layers of Silty Sand (f) with some Gravel (f) and broken rock fragments; dry, no stains, no odors
Time:	1420			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB032 is a biased sample location. In the 6-10 ft interval, the GRO fraction was collected from the S-4A interval (silty f sand, some f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0330204
Sample Location: 03SB033
Sampled By:
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Dk Tan-Brn	Sand (f) little Gravel (coarse); dry, no stains, no odors
Time:	1335			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB033 is a biased sample location. In the 2-4 ft interval, the GRO fraction was collected from near the end of the recovered soil core from S-2 (f sand, little c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jackett

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0330406
Sample Location: 03SB033
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1340	4.0 - 6.0	Dk Gray-Brn to Tan	Layer 1 - Sand (f-c) little Gravel (f+c), tr Silt; Layers 2&3 - Sand (m), different colors; Layer 4 - Sand (f); Layer 5 - Sand (m); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB033 is a biased sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3C interval (mostly med sand, fewer dk colored minerals than the interval above it); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:	Signature(s):
----	-----	Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0330610
Sample Location: 03SB033
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1345	6.0 - 10.0	Dk Gray	Alternating layers of Silty Sand (f) with little Gravel (f) and broken rock fragments; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB033 is a biased sample location in the road. In the 6-10 ft interval, the GRO fraction was collected from the S-4A interval (Silty f Sand, little f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil. **NOTE - REFUSAL ENCOUNTERED AT 9.5 FT BGS. Last sample designation should have been 0609.5 (6-9.5 ft bgs).**

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0340204
Sample Location: 03SB034
Sampled By:
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Tan-Brown	Sand (f) tr. Gravel (coarse); dry, no stains, no odors
Time:	1455			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB034 is a grid sample location. In the 2-4 ft interval, the GRO fraction was collected from the middle of the S-2 interval (f sand, tr c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jackett

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0340406
Sample Location: 03SB034
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	4.0 - 6.0	Dk Brn to Gray Brn	Sand (f) tr. Gravel (f) overlying Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	1500			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB034 is a grid sample location. In the 4-6 ft interval, the GRO fraction was collected from the S-3B interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0340610
Sample Location: 03SB034
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	6.0 - 10.0	Gray-Brn to Dk Gray	Sand (f-c) and Gravel (f+c) overlying Silty Sand (f) some Gravel (f+c), heavily oxidized grains, weathered gravels; dry, no stains, no odors
Time:	1505			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB034 is a grid sample location. In the 6-10 ft interval, the GRO fraction was collected from the top of the S-4B interval (silty f sand, some f+ c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SB0350204
Sample Location: 03SB035
Sampled By:
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	2.0 - 4.0	Tan to Gray-Brn	Sand (f) overlying Sand (f-m) tr. Gravel (f); dry, no stains, no odors
Time:	1530			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB035 is a grid sample location in the road. In the 2-4 ft interval, the GRO fraction was collected from the S-2B interval (f-m sand, tr f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jackett

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0350406
Sample Location: 03SB035
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2015	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1535	4.0 - 6.0	Gray Reddish-Brn to Dk Gray to Gray to Dk Gray	Layer 1 - Sand (f) tr. Gravel (f); Layer 2 - Silty Sand (f) little Gravel (f), oxidized spots, threads; Layer 3 - Sand (f) tr. Gravel (f); Layer 4 - Silty Sand (f) little Gravel (f); oxidized spots, threads; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB035 is a grid sample location in the road. Driller overdrove liner to 6.4 ftbgs but I did not include soil from the 6-6.4 ft interval in the sample for analysis. Only included soil from 4-6 ft bgs. The GRO fraction was collected from the S-3C interval (f sand, tr f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SB0350610
Sample Location: 03SB035
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2015	6.0 - 10.0	Gray-Brn, excluding color of broken rock	2 layers of Silty Sand (f), little Gravel (f) with a layer of broken rock in between. Bottom layer - Sand (f-c), tr. Gravel (f); dry, no stains, no odors
Time:	1540			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Sample was originally placed on hold and later analyzed by the lab.
03SB035 is a grid sample location in the road. Driller advanced a second boring adjacent to first boring b/c he overdrove liner into this interval in previous boring. In the 6-10 ft interval from the second boring, the GRO fraction was collected from the S-4D interval (f-c sand, tr f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

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HANIBAL TECHNOLOGY

Page 1 of 4

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling: Quick Turn
TAT- Indicate Date Needed: _____
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc
6061 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P. Seward

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= Methanol (5ml) 12= _____

List preservative code below: 11 — —

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Refer to lab subcontract

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (Cubi and Hach)	# of Amber Glass (1L)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-NAPTHALENE)	TPH DRO (C9-C40) TOTAL SOLIDS						
	TB01-101014	10/10	0830	G	QC	1	—	—	—	1	—						soil trip blank
	03SS0010002	10/10	0900	G	SO	1	1	—	—	1	1						
	03SB0010204	10/10	0905	G	SO	1	1	—	—	1	1						
	03SB0010406	10/10	~~0915~~ 0915	G	SO	1	1	—	—	1	1						On Hold
	03SB0010610	10/10	0920	G	SO	1	1	—	—	1	1						On Hold
	03SS0020002	10/10	0930	G	SO	1	1	—	—	1	1						
	03SB0020204	10/10	0935	G	SO	1	1	—	—	1	1						
	03SB0020406	10/10	0940	G	SO	1	1	—	—	1	1						On Hold
	03SB0020610	10/10	0945	G	SO	1	1	—	—	1	1						On Hold
	03SS0030002	10/10	1000	G	SO	1	1	—	—	1	1						

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kaylee Jalkut/K. Jalkut		10/10/14	1630	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 2 of 4

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Special Handling: Quick-Turn
TAT- Indicate Date Needed: _____
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Report To: Scott Anderson
C/o Tetra Tech Inc
6601 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH Delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut & P. Seward

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Methanol (5ml) 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

List preservative code below: 11 | | 1 | | | | | |

QA/QC Reporting Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: RI GW to Lab subcontracted

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (Clear vials)	# of Amber Glass (4oz jar)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-NAPHTHALENE)	TPH DRO (C9-C40 TOTAL SILICA)	Notes
	03SB0030204	10/10	1005	G	SO	1	1	1	1	1	1	
	03SB0030406	10/10	1010	G	SO	1	1	1	1	1	1	On Hold
	03SB0030610	10/10	1015	G	SO	1	1	1	1	1	1	On Hold
	03SS0040002	10/10	1050	G	SO	1	1	1	1	1	1	
	03SB0040204	10/10	1055	G	SO	1	1	1	1	1	1	(D1)
	03SB0040406	10/10	1100	G	SO	1	1	1	1	1	1	On Hold
	03SB0040610	10/10	1105	G	SO	1	1	1	1	1	1	On Hold
	03SS0050002	10/10	1115	G	SO	1	1	1	1	1	1	
	03SB0050204	10/10	1120	G	SO	1	1	1	1	1	1	
	03SB0050406	10/10	1125	G	SO	1	1	1	1	1	1	On Hold

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kayleen Jalkut / K. Jalkut		10/10/14	1630	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

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Agawam, MA 01001
(413) 789-9018

☐ 8405 Benjamin Road, Ste A
Tampa, FL 33634
(813) 888-9507

☐ 646 Camp Avenue
N Kingstown, RI 02852
(401) 732-3400

Special Handling: Quick Turn

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Report To: Scott Anderson
c/o Tetra Tech, Inc.
6101 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH Delineation
Location: N. Kingstown State: RI
Sampler(s): K. Jalkut P Seward

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Methanol (5ml) 12= _____

List preservative code below: 11 —

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (8oz jars)	# of Clear Glass	# of Plastic	Analyses: TPHCARO (MTBE-NAPHTHALENE)	TPH DRO (C9-C40) TOTAL SOLIDS	QA/QC Reporting Level / Notes
	FD01-101014	10/10	0000	G	SO	1	1	1	1	1	1	(1)
	03SB005 0610	10/10	1130	G	SO	1	1	1	1	1	1	On Hold
	03SS006 0002	10/10	1145	G	SO	1	1	1	1	1	1	
	03SB006 0204	10/10	1150	G	SO	1	1	1	1	1	1	
	03SB006 0406	10/10	1155	G	SO	1	1	1	1	1	1	On Hold
	03SB006 0610	10/10	1200	G	SO	1	1	1	1	1	1	On Hold
	03SS007 0002	10/10	1215	G	SO	3	2	1	1	3	2	Lab QC volume
	03SB007 0204	10/10	1220	G	SO	1	1	1	1	1	1	
	03SB007 0406	10/10	1225	G	SO	1	1	1	1	1	1	On Hold
	03SB007 0610	10/10	1230	G	SO	1	1	1	1	1	1	On Hold

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kaylee Jalkut / K. Jalkut		10/10/14	1630	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

(1) Refer to the subcontract

SPECTRUM ANALYTICAL, INC.
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Page 4 of 4

CHAIN OF CUSTODY RECORD

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Special Handling: Quick Turn
TAT- Indicate Date Needed: _____
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
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Report To: Scott Anderson
C/o Tetra Tech Inc
(601 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH Delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P Seward

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= Methanol (5ml) 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-NAPHTHALENE)	TPH DRO (C9-C40) TO TAL SOLIDS	TPH GRO (MTBE-NAPHTHALENE)	TPH DRO (C9-C40) 1L AMBER	List preservative code below: 11	–	2	–	QA/QC Reporting Notes:
	03SS00080002	10/10	1245	G	SO	1	1	–	–	1	1	–	–					
	03SB00080204	10/10	1250	G	SO	1	1	–	–	1	1	–	–					(D2)
	03SB00080406	10/10	1255	G	SO	1	1	–	–	1	1	–	–					On Hold
	03SB00080610	10/10	1300	G	SO	1	1	–	–	1	1	–	–					On Hold
	03SS00090002	10/10	1315	G	SO	1	1	–	–	1	1	–	–					
	03SB00090204	10/10	1320	G	SO	1	1	–	–	1	1	–	–					
	03SB00090406	10/10	1325	G	SO	1	1	–	–	1	1	–	–					On Hold
	03SB00090610	10/10	1330	G	SO	1	1	–	–	1	1	–	–					On Hold
	FD02-101014	10/10	0000	G	SO	1	1	–	–	1	1	–	–					(D2)
	RB01-101014	10/10	1545	G	QC	2	2*	–	–	–	–	2	2					* 1L amber bottle Rinsed w/ rinsed plastic scoop (disposable)

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

RQN 1 to lab see attached

Relinquished by:	Received by:	Date:	Time:	Temp°C
K Jalkut / K. Jalkut	K. J	10/10/14	1630	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Page 1 of 7

CHAIN OF CUSTODY RECORD

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C/o Tetra Tech Inc
6061 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N Kingstown State: RI
Sampler(s): K Jalkut P Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Soil methanol 12= _____

List preservative code below: 11 | | – | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
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G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab Coc attachment

						Containers:				Analyses:								
Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	# of VOA Vials (40 ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	TPHGRO (MBE-NAPHTHALENE)		TPHDRO (C9-C40) TOTAL SOILS						
	TB02-101314	10/13	0800	G	QC	1	–	–	1	1		1						
	0355010 0002	10/13	0930	G	SO	3	2	–	–	3		2						Lab QC volume # 2
	03SB010 0204	10/13	0935	G	SO	1	1	–	–	1		1						
	03SB010 0406	10/13	0940	G	SO	1	1	–	–	1		1						On Hold
	03SB010 0610	10/13	0945	G	SO	1	1	–	–	1		1						On Hold
	~~03SB009a~~ KJ 10/13																	
	0355009a 0002	10/13	0955	G	SO	1	1	–	–	1		1						
	03SB009a 0204	10/13	1000	G	SO	1	1	–	–	1		1						
	03SB009a 0406	10/13	1005	G	SO	1	1	–	–	1		1						On Hold
	03SB009a 0610	10/13	1010	G	SO	1	1	–	–	1		1						On Hold

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Pryor	K-J	10-14-14	0740	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 2 of 7

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Report To: Scott Anderson
c/o Tetra Tech, Inc
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Talkut P. Seward W Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml Methanol 12= _____

List preservative code below: 11 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40 ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-NAPHTHALENE)		TPH DRO (C9-C40) TOTAL SOLIDS						QA/QC Reporting Level
	03SS007a 0002	10/13	1015	G	SO	1	1			1		1						
	03SS007a 0204	10/13	1020	G	SO	1	1			1		1						
	03SS007a 0406	10/13	1025	G	SO	1	1			1		1						On Hold
	03SS007a 0610	10/13	1030	G	SO	1	1			1		1						On Hold
	03SS011 0002	10/13	1110	G	SO	1	1			1		1						
	03SB011 0204	10/13	1115	G	SO	1	1			1		1						
	03SB011 0406	10/13	1120	G	SO	1	1			1		1						On Hold
	03SB011 0610	10/13	1125	G	SO	1	1			1		1						On Hold
	03SS012 0002	10/13	1040	G	SO	1	1			1		1						
	03SB012 0204	10/13	1045	G	SO	1	1			1		1						

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt R		10-14-14	0740	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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c/o Tetra Tech, Inc
6961 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P. Seward W Ryan

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
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O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

List preservative code below: 11 —

QA/QC Reporting Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab Subcontract

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40 ml unpres)	# of Amber Glass (4oz jar)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (NWTPH-Gx)	TPH DRO (C9-C40) Total Solids						Comments
	03SB012 0406	10/13	1050	G	SO	1	1			1	1						On Hold
	03SB012 0610	10/13	1055	G	SO	1	1			1	1						On Hold
	03SS016 0002	10/13	1140	G	SO	3	2			3	2						Lab QC volume #3
	03SB016 0204	10/13	1145	G	SO	1	1			1	1						(D3)
	03SB016 0406	10/13	1150	G	SO	1	1			1	1						On Hold
	03SB016 0610	10/13	1155	G	SO	1	1			1	1						On Hold
	FD03-101314	10/13	0000	G	SO	1	1			1	1						(D3)
	03SS013 0002	10/13	1210	G	SO	1	1			1	1						
	03SB013 0204	10/13	1215	G	SO	1	1			1	1						
	03SB013 0406	10/13	1220	G	SO	1	1			1	1						On Hold

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Ryan		10-14-14	0740	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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Telephone #: 412 921 7090
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Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P. Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | | – | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Calls	QA/QC Reporting Level
	03SB0130610	10/13	1225	G	SO	1	1			1	1	On Hold
	03SS0140002	10/13	1300	G	SO	1	1			1	1	
	03SB0140204	10/13	1305	G	SO	1	1			1	1	
	03SB0140406	10/13	1310	G	SO	1	1			1	1	On Hold
	03SB014 0610	10/13	1315	G	SO	1	1			1	1	On Hold
	03 ~~SB015~~ SS0150002	10/13	1330	G	SO	1	1			1	1	
	03SB0150204	10/13	1335	G	SO	1	1			1	1	
	03SB0150406	10/13	1340	G	SO	1	1			1	1	On Hold
	03SB0150610	10/13	1345	G	SO	1	1			1	1	On Hold
	03SS0170002	10/13	1400	G	SO	1	1			1	1	

☐ Level I ☐ Level II ☐ Level III ☐ Level IV ☐ Other _____

State-specific reporting standards: Report to Lab standard

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10-14-14	0740	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P Seward W Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Sml methanol 12= _____

List preservative code below: 11 | | - | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

PdBr to lab subcontract

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids							
	03SB017 0204	10/13	1405	G	SO	1	1			1	1							
	03SB017 0406	10/13	1410	G	SO	1	1			1	1							On Hold
	03SB017 0610	10/13	1415	G	SO	1	1			1	1							On Hold
	03 FD04-101314	10/13	0000	G	SO	1	1			1	1							~~Dc~~ (D4)
	03SS022 0002	10/13	1440	G	SO	1	1			1	1							(D4)
	03SB022 0204	10/13	1445	G	SO	3	2			3	2							Lab QC volume #4
	03SB022 0406	10/13	1450	G	SO	1	1			1	1							On Hold
	03SB022 0610	10/13	1455	G	SO	1	1			1	1							On Hold
	03SS018 0002	10/13	1515	G	SO	1	1			1	1							
	03SS018 0204	10/13	1520	G	SO	1	1			1	1							

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Pryor	K Jalkut	10-14-14	0740	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 6 of 7

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Quick Turn
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc
(661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000 2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, P Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

List preservative code below: 11 | | – | | | | | |

QA/QC Reporting Notes:
Refer to Lab subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	# of VOA Vials (40ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic		TPH GRO (MTBE - Naphthalene)		TPH DRO (C9-C40) Total Solids						
	03SB018 0406	10/13	1525	G	SO	1	1				1		1						On Hold
	03SB018 0610	10/13	1530	G	SO	1	1				1		1						On Hold
	03SS019 0002	10/13	1535	G	SO	1	1				1		1						
	03SB019 0204	10/13	1540	G	SO	1	1				1		1						
	03SB019 0406	10/13	1545	G	SO	1	1				1		1						On Hold
	03SB019 0610	10/13	1550	G	SO	1	1				1		1						On Hold
	03SS020 0002	10/13	1620	G	SO	1	1				1		1						
	03SB020 0204	10/13	1625	G	SO	1	1				1		1						
	03SB020 0406	10/13	1630	G	SO	1	1				1		1						On Hold
	03SB020 0610	10/13	1635	G	SO	1	1				1		1						On Hold

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt R	[signature]	10-14-14	0740	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 7 of 7

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
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Special Handling:
TAT- Ind icate Date Needed: Quick Turn
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· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
6161 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P Seward W Ryan

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 – (remaining blank)

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jar)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Extr	Notes
	03SS0210002	10/13	1645	G	SO	1	1			1	1	
	03SB0210204	10/13	1650	G	SO	1	1			1	1	
	03SB0210406	10/13	1655	G	SO	1	1			1	1	On Hold
	03SB0210610	10/13	1700	G	SO	1	1			1	1	On Hold

K Jalkut 10/13/14

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

RPD to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Ryan	[signature]	10-14-14	0740	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 1 of 6

CHAIN OF CUSTODY RECORD

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☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634 & (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

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Report To: Scott Anderson
C/o Tetra Tech, Inc
661 Andersen Dr.
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.0123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N Kingstown State: RI
Sampler(s): K Jalkut, P. Seward, W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 — 2 —

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Refer to Subcontract

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (40z jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) (1L Amber)	
	TB03-101414	10/14	0800	G	QC	1	—	—	—	1	—	—	—	
	FD05-101414	10/14	0000	G	SO	1	1	—	—	1	1	—	—	(D2)
	03SS023 0002	10/14	0835	G	SO	1	1	—	—	1	1	—	—	(D5)
	03SB023 0204	10/14	0840	G	SO	3	2	—	—	3	2	—	—	Lab QC volume #5
	03SB023 0406	10/14	0845	G	SO	1	1	—	—	1	1	—	—	On Hold
	03SB023 0610	10/14	0850	G	SO	1	1	—	—	1	1	—	—	On Hold
	RB02-101414	10/14	~~0900~~ 0830	G	QC	2**	2*	—	—	—	—	2	2	*1 liter amber **40ml vial w/HCL
	03SS024 0002	10/14	0910	G	SO	1	1	—	—	1	1	—	—	Rinsed unused aluminum pan - disposable
	03SB024 0204	10/14	0915	G	SO	1	1	—	—	1	1	—	—	
	03SB024 0406	10/14	0920	G	SO	1	1	—	—	1	1	—	—	On Hold

Relinquished by:	Received by:	Date:	Time:	Temp°C
Nab K	K P	10/15/14	12:20	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 2 of 6

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
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Report To: Scott Anderson
c/o Tetra Tech, Inc
661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, P. Seward, N. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | – |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (4 per vial)	# of Amber Glass (4oz Jars)	# of Clear Glass	# of Plastic	Analyses: TPH ERO (w/ TBE - Naphthalene)	TPH DRO (C9-C40) Total Solids	QA/QC Reporting Notes:
	03SB024 0610	10/14	0925	G	SO	1	1			1	1	On Hold
	03SB025 0002	10/14	0940	G	SO	1	1			1	1	
	03SB025 0204	10/14	0945	G	SO	1	1			1	1	
	03SB025 0406	10/14	0950	G	SO	1	1			1	1	On Hold
	03SB025 0610	10/14	0955	G	SO	1	1			1	1	On Hold
	03SS026 0002	10/14	1005	G	SO	1	1			1	1	
	03SB026 0204	10/14	1010	G	SO	1	1			1	1	
	03SB026 0406	10/14	1015	G	SO	1	1			1	1	On Hold
	03SB026 0610	10/14	1020	G	SO	1	1			1	1	On Hold
	03SB028 0002	10/14	1030	G	SO	1	1			1	1	

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Refer to Tetra Subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 3 of 6

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
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Special Handling:
TAT- Ind icate Date Needed: Quick Turn
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Report To: Scott Anderson
c/o Tetra Tech, Inc.
661 Andersen Dr.
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K. Talkut P. Seward, W. Poyor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Solmethanol 12= _____

List preservative code below: 11 | | – | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (C5-C8 - Naphthalene)	TPH DRO (C9-C40) Total Solids	QA/QC Reporting Notes:
	03SB028 0204	10/14	1035	G	SO	1	1	–	–	1	1	
	FD06-101414	10/14	0000	G	SO	1	1	–	–	1	1	(D6)
	03SB028 0406	10/14	1040	G	SO	1	1	–	–	1	1	On Hold
	03SB028 0610	10/14	1045	G	SO	1	1	–	–	1	1	On Hold
	03SS027 0002	10/14	1055	G	SO	3	2	–	–	3	2	Lab QC volume #7
	03SB027 0204	10/14	1100	G	SO	1	1	–	–	1	1	(D6)
	03SB027 0406	10/14	1105	G	SO	1	1	–	–	1	1	On Hold
	03SB027 0610	10/14	1110	G	SO	1	1	–	–	1	1	On Hold
	03SS029 0002	10/14	1150	G	SO	1	1			1	1	
	03SB029 0204	10/14	1155	G	SO	1	1			1	1	

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
Featuring
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Page 4 of 6

CHAIN OF CUSTODY RECORD

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Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K. Jalkut, P. Seward, W. Aryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | – |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (2 pre-weighed)	# of Amber Glass (60z jars)	# of Clear Glass	# of Plastic	Analyses: TPH ERO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	QA/QC Reporting Level / Notes
	03SB029 0406	10/14	1200	G	SO	1	1	–	–	1	1	On Hold
	03SB029 0610	10/14	1205	G	SO	1	1	–	–	1	1	On Hold
	03SS030 0002	10/14	1220	G	SO	1	1	–	–	1	1	
	03SB030 0204	10/14	1225	G	SO	1	1	–	–	1	1	
	03SB030 0406	10/14	1230	G	SO	1	1	–	–	1	1	On Hold
	03SB030 0610	10/14	1235	G	SO	1	1	–	–	1	1	On Hold
	03SS031 0002	10/14	1255	G	SO	1	1	–	–	1	1	
	03SB031 0204	10/14	1300	G	SO	1	1	–	–	1	1	
	03SB031 0406	10/14	1305	G	SO	1	1	–	–	1	1	On Hold
	03SB031 0610	10/14	1310	G	SO	1	1	–	–	1	1	On Hold

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Reqs 6 hrs of sample removal

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

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Telephone #: 412 921 7090
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Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K. Jalkut, P. Seward, W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | | – | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (4oz amber vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (Purge-Aqua trakers)		TPH DRO (C9-C40) Total Solids		QA/QC Reporting Level / Notes
	03SS033 0002	10/14	1330	G	SO	1	1			1		1		
	FD07-101414	10/14	0000	G	SO	1	1			1		1		(D7)
	03SB033 0204	10/14	1335	G	SO	1	1			1		1		
	03SB033 0406	10/14	1340	G	SO	1	1			1		1		On Hold
	03SB033 0610	10/14	1345	G	SO	1	1			1		1		On Hold
	03SS032 0002	10/14	1405	G	SO	3	2			3		2		Lab QC volume #7
	03SB032 0204	10/14	1410	G	SO	1	1			1		1		(D7)
	03SB032 0406	10/14	1415	G	SO	1	1			1		1		On Hold
	03SB032 0610	10/14	1420	G	SO	1	1			1		1		On Hold
	03SS034 0002	10/14	1450	G	SO	1	1			1		1		

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to Lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 6 of 6

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/o Tetra Tech, Inc
Cdol Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | 2* | 2 | –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPHGRO (mTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	TPHGRO (mTBE-Naphthalene)	TPH DRO (C9-C40)	QA/QC Reporting Level / Notes
	03SB034 0204	10/14	1455	G	SO	1	1	–	–	1	1	–	–	
	03SB034 0406	10/14	1500	G	SO	1	1	–	–	1	1	–	–	On Hold
	03SB034 0610	10/14	1505	G	SO	1	1	–	–	1	1	–	–	On Hold
	03SS035 0002	10/14	1525	G	SO	1	1	–	–	1	1	–	–	
	03SB035 0204	10/14	1530	G	SO	1	1	–	–	1	1	–	–	
	03SB035 0406	10/14	1535	G	SO	1	1	–	–	1	1	–	–	On Hold
	03SB035 0610	10/14	1540	G	SO	1	1	–	–	1	1	–	–	On Hold
	RB03-101414	10/14	1600	G	QC	2**	2*	–	–	–	–	2	2	*1L amber bottle; **40ml vial w/HCl rinsed unused plastic jars – 24hr pickup

Relinquished by: _____ Received by: _____ Date: 10/15/14 Time: 12:20 Temp°C: _____

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to lab for shorthold

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0010002
Sample Location: 03SB001
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	10/10/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time:	0900	0-2	Tan-Brown to Brown	Poorly graded sand (0-0.6') overlying well graded sand w/gravel, trace silt (0.6-2'), dry, no stains, no odors
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB001 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom of S-1B (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0020002
Sample Location: 03SB002
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0930	0-2	Brown/Tan-Brown/Gray-Brown	Sand (f-m), little Gravel (f) overlying Sand (f), little Gravel (f+c). Bottom layer consists of Sand (f-c) and Gravel (f+c); dry, no stains, no odors.
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description. 03SB002 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0030002
Sample Location: 03SB003
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	0-2	Dk Brown to Tan-Brown	Sand (f-m) overlying Sand (f); dry, no stains, no odors
Time:	1000			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB003 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0040002
Sample Location: 03SB004
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	0-2	Dk Brown to Tan Brown	Sand (f-m), tr. Gravel (f) overlying Sand (f), tr. Gravel (f). Bottom interval consists of Sand (f), tr. Gravel (coarse); dry, no stains, no odors
Time:	1050			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB004 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0050002
Sample Location: 03SB005
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	0-2	Brown	Sand (f-m, tr. coarse), little gravel (f+c); dry, no stains, no odors
Time:	1115			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

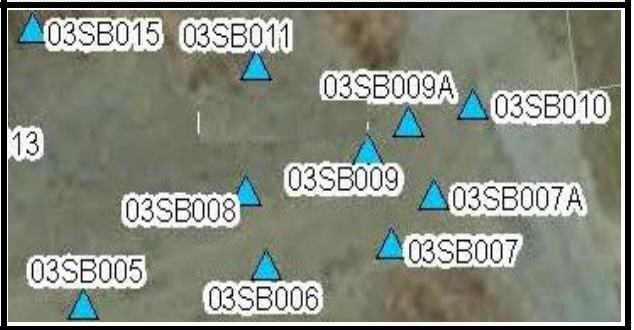
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB005 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0060002
Sample Location: 03SB006
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	0-2	Dk Brown/Brown/Gray-Brown	Sand (f-m), tr. Gravel (f) overlying a layer of Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	1145			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB006 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom of the S-1B interval (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0070002
Sample Location: 03SB007
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	0-2	Dk Brown to Tan Brown excluding color of broken rock	A layer of Sand (f-m) some Gravel (f+c) and a layer of Sand (f), little Gravel (f), with a layer of broken rock in between; dry, no stains, no odors.
Time:	1215			
Method:	acetate sleeve			
Monitor Reading (p	0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	3 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB007 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the middle of the S-1C interval (f sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES, #1	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS007a0002
Sample Location: 03SB007a
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1015	0-2	Dk Brn, Gray-Brn, Brn	Layer 1 - Sand (f-m) tr. Gravel (f); Layer 2 - Sand (f) tr. Gravel (f); Layer 3 - Sand (f-m); Layer 4 - Sand (f-m), little Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Checked position of SB007 after drilling. Advanced a 2nd boring when it was discovered that the 1st attempt at the SB007 boring was in the wrong place (pin flag missing). 03SB007a is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1C interval (f-m sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0080002
Sample Location: 03SB008
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	0-2	Dk Brn to Brn to Tan-Brn, excluding color of rock	Layer 1 - Sand (f) tr. Gravel (f); Layer 2 - Sand (f) little Gravel (f); Layer 3 - broken rock; Layer 4 - Sand (f); dry , no stains, no odors
Time:	1245			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

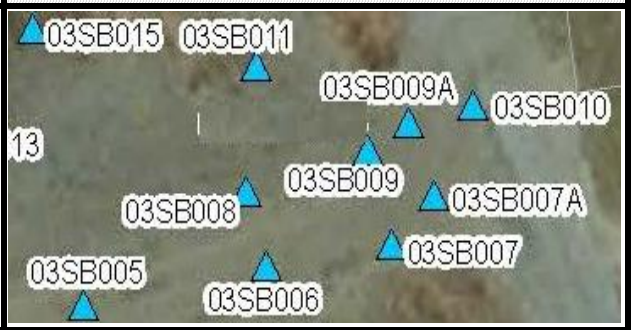
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB008 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0090002
Sample Location: 03SB009
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/10/2014	0-2	Dk Brn to Tan-Brn	Sand (f-c), tr. Gravel (f) overlying a layer of Sand (f) and Gravel (f); dry, no stains, no odors
Time:	1315			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB009 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS009a0002
Sample Location: 03SB009a
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time:	0955	0-2	Dk Brown to Brown	Sand (f-m) tr Gravel (f) overlying a layer of Sand (f-m) and Gravel (f+c); dry, no stains, no odors
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

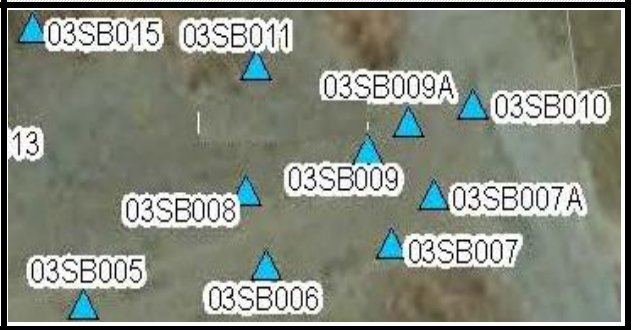
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Checked position of SB009 after drilling. Advanced a 2nd boring when it was discovered that the 1st attempt at the SB009 boring was in the wrong place (pin flag missing). 03SB009a is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f-m sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil. Dark 1/4" thick band of f sand at bottom, no readings.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0100002
Sample Location: 03SB010
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	0-2	Brn	Asphalt surface (1 - 1.5") overyling a layer of Sand (f-c) little Gravel (f) overlying a layer of Sand (f) with little Silt; dry, no stains, no odors
Time:	0930			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	3 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Location on road. 03SB010 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the middle of S-1B (f sand, little silt); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes, Lab QC #2	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0110002
Sample Location: 03SB011
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1110	0-2	Dk Brn to Brn	Sand (f), Tr Gravel (f+c) overlying a layer of Sand (f) with some Gravel (f+c); dry, no stains, no odors
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB011 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from S-1B (f sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0120002
Sample Location: 03SB012
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1040	0-2	Dk Brn to Lt Brn	f-m Sand, tr f Gravel overlying a layer of f Sand; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB012 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the middle of S-1B (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0130002
Sample Location: 03SB013
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1210	0-2	Brn	Sand (f-m) little Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB013 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from teh middle of S-1 (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0140002
Sample Location: 03SB014
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1300	0-2	Brown to Gray/Brown	Top layer -- Sand (f-m), middle layer -- Sand (f), tr Gravel (f), bottom layer -- Sand (f-m) with some Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB014 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom of the soil core, S-1C (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0150002
Sample Location: 03SB015
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	0-2	Lt Brn to Brn to Gray-Brn	Top layer -- Sand (f-m) and Gravel (f); Middle layer - Silty Sand (f), tr Gravel (f); Bottom Layer - Sand (f-c) and Gravel (f+c), black-colored rock chips?; dry, no stains, no odors
Time:	1330			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

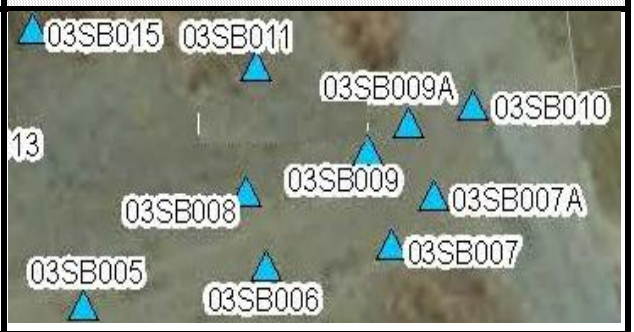
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB015 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1C interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0160002
Sample Location: 03SB016
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1140	0-2	Various shades of Brn, Lt Brn, and Gray-Brn	Layer 1 - Sand (f); Layer 2 - Sand (f) with some Gravel (f); Layer 3 - Sand (f-m), some Gravel (f); Layer 4 - Silty Sand (f) w/oxidized grains; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	3 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB016 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1C interval (f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes, Lab QC #3	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0170002
Sample Location: 03SB017
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1400	0-2	Various shades of Tan, Gray-Brn, and Gray	Layer 1 - Sand (f); Layer 2 - Sand (f-m) some Gravel (f); Layer 3 - Sand (f); Layer 4 - Sand (f-m) some Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
Location in road. Asphalt removed w/dedicated bit prior to sampling.
03SB017 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom of the recovered soil core (S-1D, f-m sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0180002
Sample Location: 03SB018
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014			
Time:	1515	0-2	Various shades of Brn	Layer 1 - Sand (f-m), tr Silt; Layer 2 - Sand (f), tr Silt; Layer 3 - Sand (f) tr. (f) Gravel; Layer 4 - Sand (f-m) little Gravel (f+c)
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB018 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0190002
Sample Location: 03SB019
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/13/2014	0-2	Lt Gray/Brown to Brown to Orange/Brown	Layer 1 - Sand (f), some Gravel (f); Layers 2 and 3 - Sand (f), tr Gravel (f); dry, no stains, no odors
Time:	1535			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB019 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom half of the recovered interval (S-1C); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0200002
Sample Location: 03SB020
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1620	0-2	Dk Brn to Brn, Red-Brn, & Gray-Brn	Layer 1 - Sand (f-m), tr Gravel (f), tr Silt; Layer 2 - Sand (f) tr. Gravel (f); Layer 3 - Sand (f-c) and Gravel (f+c), tr Silt
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB020 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom half of S-1C (coarser grained interval); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0210002
Sample Location: 03SB021
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1645	0-2	Dk Brn to Brn to Tan-Gray Brn	Layer 1 - Sand (f-m); Layer 2 - Sand (f-m) tr. Gravel (f); Layer 3 - Sand (m)
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB021 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from S-1C (medium sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	-----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0220002
Sample Location: 03SB022
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/13/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1440/0000	0-2	Dk Brn/Tan-Brn-Yellow/Lt Brn/Brn	Layers 1 - Sand (f-c) and Gravel (f+c); Layer 2 - Sand (f-c) little Gravel (f); Layer 3 - Sand (f-m); Layer 4 - Sand (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	2 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB022 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from S-1C (mostly f-m sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	FD04-101314 (DUP04)

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0230002
Sample Location: 03SB023
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0835/0000	0-2	Dk Brn and Brn	Layer 1 - Sand (f-m) tr. Gravel (f); Layer 2 - Sand (f) tr. Gravel (f); Layer 3 - Sand (f), tr Gravel (f+c); Layer 4 - Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	2 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB023 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from S-1C (mostly f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	FD05-101414 (DUP05)

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0240002
Sample Location: 03SB024
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 0910	0-2	Dk Brn/Brn/Orange-Brn	Sand (f-m), tr Gravel (f), tr Silt overlying: Sand (f), tr Gravel (f), tr Silt; and Sand (f, tr med to c sand), tr Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB024 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom of the S-1 soil core (f sand, tr med -c sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0250002
Sample Location: 03SB025
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014			
Time:	0940	0-2	Gray/Brown to Light Brn to Brn	Layer 1 - Sand (f) tr Gravel (f); Layer 2 - Sand (f-c) some Gravel (f); Layer 3 - Sand (f) little Gravel (f); dry, no stains, no odors
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB025 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom of the soil core (S-1C, f sand, little f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0260002
Sample Location: 03SB026
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	0-2	Dk- Brn/Brown/ Gray-Brn w/orange	Layer 1 - Sand (f) tr. Gravel (f); Layer 2 - Sand (f) few Gravel (f+c); Layer 3 - Sand (f-m) little Gravel (f); Layer 4 - Sand (f-c) and Gravel (f+c); dry, no stains, no odors
Time:	1005			
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB026 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1D interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0270002
Sample Location: 03SB027
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1055	0-2	Dk Brn to Brn	Sand (f-c) tr. Gravel (f) overlying Sand (f-m), little Gravel (f+c); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	3 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB027 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the bottom of the recovered soil core (S-1B, f-med sand, little f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes, Lab QC #6	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0280002
Sample Location: 03SB028
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1030	0-2	Dk Brn/Lighter Brn/Dk Gray/Brn	Layer 1 - Sand (f-c), tr. Gravel (f); Layer 2 - Sand (mostly fine), little Gravel (fine); Layer 3 - rock frag.; Layer 4 - Sand (f), tr. Gravel (f), tr Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB028 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1D interval (f sand, tr f gravel, tr silt); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0290002
Sample Location: 03SB029
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1150	0-2	Gray/Brown	Sand (f-c) and Gravel (f+c), tr Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH,≤ 6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB029 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the middle of the recovered soil core (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0300002
Sample Location: 03SB030
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1220	0-2	Brn to Dk Brn to Light Brn	Layer 1 - Sand (f-m) tr. Gravel (f); Layer 2 - Sand (f-m) little Gravel (f); Layer 3 - Sand (f-c) and Gravel (f+c); Layer 4 - Sand (f-m) little Gravel (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (p 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB030 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1C interval (f-c sand, f+c gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s):

Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0310002
Sample Location: 03SB031
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1255	0-2	Dk Brn to Gray-Brn	2 layers of Sand (f-m) tr. Gravel (f) overlying Sand (f-c) little Gravel (f), tr Silt; dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB031 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1C interval (f-c sand, little f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0320002
Sample Location: 03SB032
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1405	0-2	Dk Brn/Dk Gray/Lighter Gray	Layer 1 - Sand (f-m), little Gravel (f); Layer 2 - Sand (f-m) tr. Gravel (f); Layer 3 - Sand (f-m), no gravel; Layer 4 - Sand (f); dry, no stains, no odors
Method: acetate sleeve			
Monitor Reading (ppm): 0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	3 x 40 mL vials	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	2 x 4-oz amber jars	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB032 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f-m sand, tr f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes, Lab QC #7	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

Sample ID No.: 03SS0330002
Sample Location: 03SB033
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time:	1330	0-2	Yellow-Orange Brn/Gray Brn/Dk Tan-Brn	Layer 1 - Sand (f-c) , little Gravel (f) Layer 2 - Sand (f-c) and Gravel (f) Layer 3 - Sand (f); Dry, no stains, no odors
Method:	acetate sleeve			
Monitor Reading (ppm):	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB033 is a biased sample location. In the 0-2 ft interval, the GRO fraction was collected from the S-1B interval (f-c sand, f gravel); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0340002
Sample Location: 03SB034
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

		Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Date:	10/14/2014	0-2	Dk Brn to Gray-Brn to Tan-Brn	Layer 1 - Sand (f) , tr. Gravel (f); Layer 2 - Sand (f), little Gravel (coarse); Layer 3 - Sand (f); Dry, no stains, no odors
Time:	1450			
Method:	acetate sleeve			
Monitor Reading (p	0.0 ppm			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB034 is a grid sample location. In the 0-2 ft interval, the GRO fraction was collected from the middle of the S-1C interval (f sand); the soil was then homogenized and the DRO fraction was collected from mixed soil.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jalkut

Tetra Tech

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CED Area, Fmr NCBC Davisville
Project No.: 112G01813 WE 01

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: 03SS0350002
Sample Location: 03SB035
Sampled By: P. Seward/K. Jalkut
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 10/14/2014	Depth Interval (ft bgs)	Color	Description (Sand, Silt, Clay, Moisture, etc.)*
Time: 1525	0-2	Gray-Brn to Gray to Brn to Tan	Sand (f-c) and Gravel (f+c) overlying a layer of broken rock. Bottom intervals consist of layers of Sand (f) w/variable colors; dry, no stains, no odors.
Method: acetate sleeve			
Monitor Reading (p 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Reading (ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TPH GRO (MTBE - Naphthalene)	MeOH, ≤6°C	1 x 40 mL vial	(YES) NO
TPH DRO (C9-C40)/Total Solids	≤6°C	1 x 4-oz amber jar	(YES) NO

OBSERVATIONS / NOTES:

* See sample boring log for a detailed sample description.
03SB035 is a grid sample location in the road. In the 0-2 ft interval, the GRO fraction was collected from the S-1C interval (f sand, brn); the soil was then homogenized and the DRO fraction was collected from mixed soil.

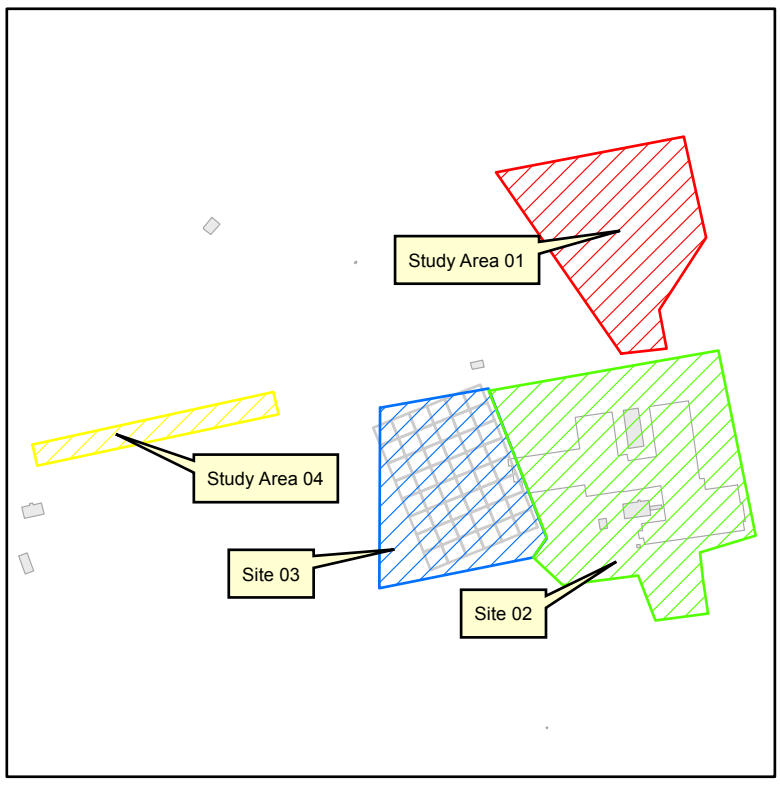
MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
----	----

Signature(s): Kayleen Jalkut

PGH P:\GIS\DAVISVILLE_NCBC\MAPDOCS\MXD\SITE3_TPH_PROPSAMPLOC_R1.MXD 10/27/14 KM



N

TOTAL PETROLEUM HYDROCARBONS
6100 mg/kg

TOTAL PETROLEUM HYDROCARBONS
4800 mg/kg

TOTAL PETROLEUM HYDROCARBONS
3300 mg/kg

TOTAL PETROLEUM HYDROCARBONS
2900 mg/kg

TOTAL PETROLEUM HYDROCARBONS
2600 mg/kg

TOTAL PETROLEUM HYDROCARBONS
2800 mg/kg

TOTAL PETROLEUM HYDROCARBONS
3110 mg/kg

TOTAL PETROLEUM HYDROCARBONS
57000 mg/kg

TOTAL PETROLEUM HYDROCARBONS
6700 mg/kg

TOTAL PETROLEUM HYDROCARBONS
550 mg/kg

TOTAL PETROLEUM HYDROCARBONS
1100 mg/kg

03SB035
03SB033
03SB034
03SB032
S-03-06-00-S
03SB031
03SB030
03SB029
03SB028
S-03-09-00-S
03SB027
03SB026
03SB025
03SB024
SS3C-1
03SB021
S-03-05-00-S
03SB023
03SB022
03SB020
S-03-04-00-S
03SB017
03SB019
03SB016
03SB014
03SB018
S-03-10-00-S
03SB015
03SB011
S-03-07-00-S
S-03-03-00-S
03SB009A
03SB010
03SB013
S-03-01-00-S
S-03-02-00-S
03SB009
03SB007A
03SB012
03SB008
03SB007
03SB005
03SB006
03SB004
S-03-08-00-S
03SB003
03SB002
03SB001

Legend

- Biased Sample
- Grid Sample
- Historical Sample Location
- 50' x 50' Sampling Grid
- Existing Building
- Former Building

NOTE:
All historical results are from surface soil samples collected from 0 to 2 feet below ground surface.

80 0 80
Feet

DRAWN BY: J. NOVAK	DATE: 03/05/13	CONTRACT NUMBER: —	CTO NUMBER: —
CHECKED BY: S. ANDERSON	DATE: 10/27/14	APPROVED BY: —	DATE: —
REVISED BY: K. MOORE	DATE: 10/27/14	APPROVED BY: —	DATE: —
SCALE: AS NOTED		FIGURE NO.: 4-3	REV: 0

HISTORICAL TPH CONCENTRATIONS AND PROPOSED SAMPLING LOCATIONS AT SITE 03
FORMER CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Date: Oct-2014 Picture No. 1 Location: MW03-01Sa

Comment: Advancing soil boring with DPT drill rig at MW03-01Sa.

Date: Oct-2014 Picture No. 2 Location: MW01-13Sa

Comment: DPT drill rig at MW01-13Sa near Dolly Madison House.

Date: Oct-2014 Picture No. 3 Location: MW02-06Sa

Comment: Installing replacement well at MW02-06Sa in car lot.

Date: Oct-2014 Picture No. 4 Location: MW01-13Sa

Comment: Replacement well at MW01-13Sa with original well adjacent (blue casing).

Date: Oct-2014 Picture No. 5 Location: CED Area

Comment: Pre-packed well screen for replacement wells in CED Area.

Date: Oct-2014 Picture No. 6 Location: CED Area

Comment: Close-up of pre-packed well material around well screen.

Date: Oct-2014 Picture No. 7 Location: MW01-13Sa

Comment: MW01-13Sa area after drillers smoothed out ruts created by turning DPT rig.

Date: Oct-2014 Picture No. 8 Location: Decon Pad

Comment: Decontamination pad for DPT drill rig and tooling.

Date: Oct-2014 Picture No. 9 Location: MW02-10S
Comment: Instrumentation used for groundwater purging and sampling at MW02-10S.

Date: Oct-2014 Picture No. 10 Location: MW02-10S
Comment: Groundwater sampling at MW02-10S, looking north.

Date: Oct-2014 Picture No. 11 Location: Car lot
Comment: Protecting new well in car lot prior to installing surface pad.

Date: Sept-2014 Picture No. 12 Location: Former B224
Comment: Location of Former B224, looking north-northeast.

Date: Sept-2014 Picture No. 13 Location: MW03-01Sa

Comment: Tetra Tech field technician conducting well development at MW03-01Sa.

Date: Oct-2014 Picture No. 14 Location: MW02-06Sa

Comment: Soil core from pilot hole at MW02-06Sa.

Date: Oct-2014 Picture No. 15 Location: MW03-03Sa

Comment: Close-up of oxidized threads in sand from MW03-03Sa pilot hole.

Date: Oct-2014 Picture No. 16 Location: SB031

Comment: Pockets of coarse sand (oxidized) within silty fine sand at SB031 from 6 to 10 feet bgs.

Date: Oct-2014 Picture No. 17 Location: 03SB016
Comment: Soil core from soil boring SB016 from 6 to 10 feet bgs.

Date: Oct-2014 Picture No. 18 Location: CED Area
Comment: Tetra Tech field technician screening soil core with PID.

Date: Oct-2014 Picture No. 19 Location: 03SB004
Comment: Lower silty sand unit in soil boring SB004 from 4 to 6 feet bgs.

Date: Oct-2014 Picture No. 20 Location: 03SB004
Comment: Broken rock encountered at end of soil core from SB004 from 4 to 6 feet bgs.

TABLE 1
ANALYTICAL PROGRAM SUMMARY
CED AREA INVESTIGATION - SITES 2, 3, AND DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTON, RI

Well ID	Well Screen (ft bgs)	Sample Interval Depth (ft bgs)	Geologic Unit at Sample Interval	VOCs	TPH-GRO	TPH-DRO	Naphthalene	Total Metals	Dissolved Metals	SVOCs, Pesticides & PCBs
FALL 2014 - CED AREA INVESTIGATION										
2014 Monitoring Well Groundwater Samples										
MW01-10S	13-23	22.5	Shallow Overburden	X	X	X	X	X	X	
MW01-12S	14-24	22	Shallow Overburden	X	X	X	X	X	X	
MW01-13Sa	13-23	21	Shallow Overburden	X	X	X	X	X	X	
MW01-14S	15-25	24.5	Shallow Overburden	X	X	X	X	X	X	
MW02-03S	20-30[1]	28	Shallow Overburden	X	X	X	X	X	X	
MW02-04Sa	16-26	23	Shallow Overburden	X	X	X	X	X	X	
MW02-05S	16.5-26.5	24	Shallow Overburden	X	X	X	X	X	X	
MW02-06Sa	16-26	23	Shallow Overburden	X	X	X	X	X	X	
MW02-08Sa	11.8-26.8	24.8	Shallow Overburden	X	X	X	X	X	X	
MW02-09Sa	12-27	23	Shallow Overburden	X	X	X	X	X	X	
MW02-10S	13-28	24	Shallow Overburden	X	X	X	X	X	X	
MW02-11S	13-28	24	Shallow Overburden	X	X	X	X	X	X	
MW03-01Sa	14-24	22	Shallow Overburden	X	X	X	X	X	X	
MW03-02S	8.5-23.5	21.5	Shallow Overburden	X	X	X	X	X	X	
MW03-03Sa	15-25	22.5	Shallow Overburden	X	X	X	X	X	X	
MW03-04S	10-25	23.25	Shallow Overburden	X	X	X	X	X	X	
MW03-05S	11-26	23	Shallow Overburden	X	X	X	X	X	X	
MW03-15S	13-23	21.5	Shallow Overburden	X	X	X		X	X	X
MW03-15I	45-55	50	Intermediate Overburden	X	X	X		X	X	X
MW03-16S	11.5-21.5	20.5	Shallow Overburden	X	X	X		X	X	X
MW03-16I	45-55	50	Intermediate Overburden	X	X	X		X	X	X
MW03-17S	11.5-21.5	20	Shallow Overburden	X	X	X		X	X	X
MW03-17I	45-55	50	Intermediate Overburden	X	X	X		X	X	X

Notes:

1) Well screen depth for MW02-03S based on total well depth of 33 ft below top of riser as measured during Fall 2014 Investigation. Assume well screen is set at bottom of well and extends 10 ft.

ft bgs - feet below ground surface

VOCs - Volatile organic compounds

TPH-GRO - Total Petroleum Hydrocarbons - Gasoline Range Organics (MTBE to Naphthalene)

TPH-DRO - Total Petroleum Hydrocarbons - Diesel Range Organics (C9-C40)

SVOCs - Semi-volatile organic compounds

PCBs - Polychlorinated biphenyls

TABLE 2
WELL CONSTRUCTION AND CONDITION SUMMARY
CED AREA INVESTIGATION - SITES 2, 3, AND DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTON, RI

Well ID	Easting	Northing	Boring Log	MW Const. Log	Year Installed	Protective Casing	Protective Casing Material	Protective Casing Height (ft above grade)	Well Riser Material	Well Screen Material	Geologic Unit at Screened	Top of Casing Elevation (FAMSL)	Top of Riser Elevation (FAMSL)	Ground Surface Elevation (FAMSL)	Depth Top of Screen (ft bgs)	Depth Bottom of Screen (ft bgs)	Top of Screen Elevation (FAMSL)	Bottom of Screen Elevation (FAMSL)	Well Condition Notes
FALL 2014 - CED AREA INVESTIGATION																			
MW01-10S	519775.5400	194870.9300	Y	Y	1995	Guard Pipe	Steel	1.54	2" PVC	2" PVC	Shallow Overburden	42.75	42.73	41.21	13	23	28.21	18.21	Guard pipe corroded, blue protective casing 4in, dedicated peristaltic pump tubing
MW01-12S	520597.0000	194729.0000	Y	Y	1995	Road Box	Metal	NA	2" PVC	2" PVC	Shallow Overburden		36.01	36.34	14	24	22.34	12.34	
MW01-13S	521376.1200	194994.2500	Y	Y	1995	Guard Pipe	Steel	1.59	2" PVC	2" PVC	Shallow Overburden	26.24	25.99	24.65	8	18	16.65	6.65	Original well
MW01-13Sa			Y	Y	2014	Guard Pipe	Metal	2.8	1.5" PVC	1.5" PVC	Shallow Overburden				13	23	-13.00	-23.00	2014 Replacement well, surface pad beneath rocks around base of well
MW01-14S	521355.3000	194684.8500	Y	Y	1995	Guard Pipe	Steel	1.33	2" PVC	2" PVC	Shallow Overburden	37.49	37.38	36.16	15	25	21.16	11.16	Guard pipe corroded, concrete pad broken, slightly heaved, dedicated peristaltic pump tubing
MW02-03S[1]	521031.9400	194396.0100	Y	Y	1989	Guard Pipe	Metal	3.21	2" PVC	2" PVC	Shallow Overburden	43.14	42.68	39.93	20	30	19.93	9.93	Guard pipe corroded
MW02-04Sa	520658.6200	194257.8800	Y	N	1989	Road Box	Metal	NA	2" PVC	2" PVC	Shallow Overburden		38.19	38.50	16	26	22.50	12.50	Road box corroded, dedicated peristaltic pump tubing
MW02-05S	520620.9500	194277.7500	Y	N	1989	Guard Pipe	Metal	2.15	2" PVC	2" PVC	Shallow Overburden	40.65	38.17	38.50	16.5	26.5	22.00	12.00	EA's 1998 Report indicates this well is a flush mount (see riser and ground surface elevations) but Oct-14 inspection notes this well has a 2.15 stick up. Guard pipe corroded
MW02-06S	520644.2300	194196.8500	Y	N	1989	Road Box	Metal	NA	2" PVC	2" PVC	Shallow Overburden		36.98	37.40	16	26	21.40	11.40	Original well
MW02-06Sa			Y	Y	2014	Road Box	Metal	NA	1.5" PVC	1.5" PVC	Shallow Overburden				16	26	-16.00	-26.00	2014 Replacement well
MW02-08Sa	520634.6300	194369.0500	N	N	1993	Guard Pipe	Metal	2.19	2" PVC	2" PVC	Shallow Overburden	41.09	38.64	38.9	11.8	26.8	27.10	12.10	EA's 1998 Report indicates this well is a flush mount (see riser and ground surface elevations) but Oct-14 inspection notes this well has a 2.19 stick up. Dedicated peristaltic pump tubing
MW02-09Sa	520528.5400	194227.1400	Y	Y	1993	Road Box	Metal	NA	2" PVC	2" PVC	Shallow Overburden		37.93	38.51	12	27	26.51	11.51	Dedicated peristaltic pump tubing
MW02-10S	520677.6300	194231.8400	Y	Y	1993	Road Box	Metal	NA	2" PVC	2" PVC	Shallow Overburden		37.01	37.64	13	28	24.64	9.64	Road box corroded
MW02-11S	520798.4100	194090.7000	N	N	1993	Road Box	Metal	NA	2" PVC	2" PVC	Shallow Overburden		40.22	38.00	13	28	25.00	10.00	EA's 1998 Report indicates this well has a 2.22 stick up (see riser and ground surface elevations) but Oct 14 inspection notes flush mount with 2in well, 6in casing, and 12in road box. Dedicated peristaltic pump tubing.
MW03-01S	520250.6900	194313.0200	Y	N	1989	Road Box	Metal	NA			Shallow Overburden		36.61	37.12	12.6	22.6	24.52	14.52	Original well, found buried, no cap, no road box, full of dirt, attempted abandonment, cemented in, could not pull out
MW03-01Sa			Y	Y	2014	Guard Pipe	Metal	2.8	1.5" PVC	1.5" PVC	Shallow Overburden				14	24	-14.00	-24.00	2014 Replacement well, concrete pad buried
MW03-02S	520255.2200	194490.4200	N	N	1993	Guard Pipe	Metal	2.19	2" PVC	2" PVC	Shallow Overburden	38.39	38.37	36.20	8.5	23.5	27.70	12.70	Guard pipe corroded, concrete pad broken, dedicated peristaltic pump tubing
MW03-03S	520175.2600	194343.2600	N	N	1993	Guard Pipe	Metal	1.91	2" PVC	2" PVC	Shallow Overburden	38.31	38.36	36.40	9	24	27.40	12.40	Original well, guard pipe corroded, concrete pad broken, dedicated peristaltic pump tubing
MW03-03Sa			Y	Y	2014	Guard Pipe	Metal	2.25	1.5" PVC	1.5" PVC	Shallow Overburden				15	25	-15.00	-25.00	2014 Replacement well
MW03-04S	520341.8100	194512.3000	Y	Y	1993	Road Box	Metal	1.92	2" PVC	2" PVC	Shallow Overburden	39.62	37.24	37.70	10	25	27.70	12.70	Guard pipe corroded

TABLE 2
WELL CONSTRUCTION AND CONDITION SUMMARY
CED AREA INVESTIGATION - SITES 2, 3, AND DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTON, RI

Well ID	Easting	Northing	Boring Log	MW Const. Log	Year Installed	Protective Casing	Protective Casing Material	Protective Casing Height (ft above grade)	Well Riser Material	Well Screen Material	Geologic Unit at Screened	Top of Casing Elevation (FAMSL)	Top of Riser Elevation (FAMSL)	Ground Surface Elevation (FAMSL)	Depth Top of Screen (ft bgs)	Depth Bottom of Screen (ft bgs)	Top of Screen Elevation (FAMSL)	Bottom of Screen Elevation (FAMSL)	Well Condition Notes
MW03-05S	520408.7200	194358.5900	Y	Y	1993	Road Box	Metal	2.22	2" PVC	2" PVC	Shallow Overburden	40.59	37.89	38.37	11	26	27.37	12.37	Guard pipe corroded, soil around pad has eroded away
MW03-15S			Y	Y	2014	Guard Pipe	Steel	3.18	1.5" PVC	1.5" PVC	Shallow Overburden				13	23			Guard pipe corroded
MW03-15I			Y	Y	2014	Guard Pipe	Steel	3.19	1.5" PVC	1.5" PVC	Intermediate Overburden				45	55			Guard pipe corroded
MW03-16S			Y	Y	2014	Guard Pipe	Steel	3.22	1.5" PVC	1.5" PVC	Shallow Overburden				11.5	21.5			
MW03-16I			Y	Y	2014	Guard Pipe	Steel	2.92	1.5" PVC	1.5" PVC	Intermediate Overburden				45	55			
MW03-17S			Y	Y	2014	Guard Pipe	Steel	3.24	1.5" PVC	1.5" PVC	Shallow Overburden				11.5	21.5			Guard pipe corroded
MW03-17I			Y	Y	2014	Guard Pipe	Steel	3.33	1.5" PVC	1.5" PVC	Intermediate Overburden				45	55			3in protective casing

Notes:

1) Well screen depth for MW02-03S based on total well depth of 33 ft below top of riser as measured during Fall 2014 Investigation. Assume well screen is set at bottum of well and extends 10 ft.

FAMSL - Feet above mean sea level

ft bgs - feet below ground surface

NA - Not applicable

TABLE 3
WELL DEVELOPMENT SUMMARY
CED AREA INVESTIGATION - SITES 2, 3, AND DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTON, RI

Well ID	Year Installed	Well Size & Material	Geo. Unit at Screened Interval	Initial Depth to Water (Aug. 27, 2014 Inspection) (ft BTOR)	Total Depth (ft BTOR)	Year Well Developed/Re-Developed	Depth to Water (Oct 15, 2014) (ft BTOR)	Top of Riser Elevation (FAMSL)	Groundwater Elevation Measurement (Oct 15, 2014) (FAMSL)	Month/Year Last Sampled
FALL 2014 - CED AREA INVESTIGATION										
MW01-10S	1995	2" PVC	Shallow Overburden	21.66	24.56	2014	23.15	42.73	19.58	Oct-14
MW01-12S	1995	2" PVC	Shallow Overburden	NM	23.6	2014	19.5	36.01	16.51	Oct-14
MW01-13S	1995	2" PVC	Shallow Overburden	16.42	19.11	2014	17.07	25.99	8.92	Mar-07
MW01-13Sa	2014	1.5" PVC	Shallow Overburden	NM	25.53	2014	18.71			Oct-14
MW01-14S	1995	2" PVC	Shallow Overburden	24.05	26.22	2014	24.61	37.38	12.77	Oct-14
MW02-03S	1989	2" PVC	Shallow Overburden	26.26	33.25	2014	27.1	42.68	15.58	Oct-14 (collected additional sample for VOC and TPH-GRO analysis in Nov-14)
MW02-04Sa	1989	2" PVC	Shallow Overburden	19.62	25.89	2014	20.68	38.19	17.51	Oct-14
MW02-05S	1989	2" PVC	Shallow Overburden	21.44	28	2014	22.5	38.17	15.67	Oct-14
MW02-06Sa	2014	1.5" PVC	Shallow Overburden	NM	25.55	2014	20.5			Oct-14
MW02-08Sa	1993	2" PVC	Shallow Overburden	22.25	28.39	2014	23.31	38.64	15.33	Oct-14
MW02-09Sa	1993	2" PVC	Shallow Overburden	19.95	26.76	2014	21	37.93	16.93	Oct-14
MW02-10S	1993	2" PVC	Shallow Overburden	18.33	25.06	2014	19.3	37.01	17.71	Oct-14
MW02-11S	1993	2" PVC	Shallow Overburden	19.2	26.08	2014	20.15	40.22	20.07	Oct-14
MW03-01Sa	2014	1.5" PVC	Shallow Overburden	NM	26.66	2014	20.17			Oct-14
MW03-02S	1993	2" PVC	Shallow Overburden	18.21	25.75	2014	19.49	38.37	18.88	Sept-14
MW03-03S	1993	2" PVC	Shallow Overburden	18.03	20.05	2014	19.32	38.36	19.04	Mar-07
MW03-03Sa	2014	1.5" PVC	Shallow Overburden	NM	26.66	2014	19.82			Oct-14
MW03-04S	1993	2" PVC	Shallow Overburden	19.35	26.55	2014	20.58	37.24	16.66	Sept-14
MW03-05S	1993	2" PVC	Shallow Overburden	20.57	27.94	2014	21.8	37.89	16.09	Oct-14
MW03-15S	2014	1.5" PVC	Shallow Overburden	22.65	26.11	2014	24.25			Oct-14
MW03-15I	2014	1.5" PVC	Intermediate Overburden	22.87	58.34	2014	24.5			Sept-14
MW03-16S	2014	1.5" PVC	Shallow Overburden	20.92	24.45	2014	22.4			Oct-14
MW03-16I	2014	1.5" PVC	Intermediate Overburden	20.86	57.92	2014	22.45			Oct-14
MW03-17S	2014	1.5" PVC	Shallow Overburden	21.1	24.51	2014	22.67			Sept-14
MW03-17I	2014	1.5" PVC	Intermediate Overburden	21.2	57.6	2014	22.8			Oct-14

Notes:
ft BTOR - feet below top of riser
FAMSL - feet above mean sea level
NM - Not measured

ATTACHMENT C

DATA TABLES

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SS0010002	03SB0010204	03SB0010406	03SB0010610
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SS0010002	03SB0010204	03SB0010406	03SB0010610
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	0	2	4	6
BOTTOM DEPTH	2	4	6	10
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	8.7	170	10	12
Gasoline Range Organics (mg/kg)	0.93 U	0.71 U	0.64 U	0.77 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	8.7	170	10	12
Miscellaneous Parameters				
Percent Moisture (%)	3.6	5.6	4.7	3.2

LOCATION	03SS0020002	03SB0020204	03SB0020406	03SB0020610
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SS0020002	03SB0020204	03SB0020406	03SB0020610
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	0	2	4	6
BOTTOM DEPTH	2	4	6	10
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	100	8.3	23	16
Gasoline Range Organics (mg/kg)	0.76 U	0.75 U	0.65 U	0.65 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	100	8.3	23	16
Miscellaneous Parameters				
Percent Moisture (%)	4.6	4.6	4.4	4.4

LOCATION	03SS0030002	03SB0030204	03SB0030406	03SB0030610
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SS0030002	03SB0030204	03SB0030406	03SB0030610
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	0	2	4	6
BOTTOM DEPTH	2	4	6	10
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	190	1.7 U	15	13
Gasoline Range Organics (mg/kg)	0.73 U	0.58 U	0.82 U	0.64 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	190	1.7 U	15	13
Miscellaneous Parameters				
Percent Moisture (%)	3.5	4	11	3.2

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SS0040002	03SB0040204	03SB0040204-D	03SB0040406
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SS0040002	03SB0040204	03SB0040204-D	03SB0040406
SAMPLE CODE	NORMAL	ORIG	DUP	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	0	2	2	4
BOTTOM DEPTH	2	4	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	160	1.7 U	8.8	8.8
Gasoline Range Organics (mg/kg)	0.65 U	0.69 U	0.68 U	0.72 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	160	1.7 U	8.8	8.8
Miscellaneous Parameters				
Percent Moisture (%)	3	4	3.7	6.6

LOCATION	03SB0040610	03SS0050002	03SB0050204	03SB0050406
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SB0040610	03SS0050002	03SB0050204	03SB0050406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	4
BOTTOM DEPTH	10	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	14	9 U	17	8.2
Gasoline Range Organics (mg/kg)	0.66 U	0.84 U	0.80 U	0.71 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	14	9 U	17	8.2
Miscellaneous Parameters				
Percent Moisture (%)	4.1	6.4	6.3	6.1

LOCATION	03SB0050610	03SS0060002	03SB0060204	03SB0060406
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SB0050610	03SS0060002	03SB0060204	03SB0060406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	4
BOTTOM DEPTH	10	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	11	15	21	12
Gasoline Range Organics (mg/kg)	0.69 U	0.86 U	0.81 U	0.65 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	11	15	21	12
Miscellaneous Parameters				
Percent Moisture (%)	4.3	8.1	2.7	8.7

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0060610	03SS0070002	03SB0070204	03SB0070406
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SB0060610	03SS0070002	03SB0070204	03SB0070406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	4
BOTTOM DEPTH	10	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	14	540	18	35
Gasoline Range Organics (mg/kg)	0.69 U	0.71 U	0.63 U	0.53 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	14	540	18	35
Miscellaneous Parameters				
Percent Moisture (%)	6.6	4.6	3.1	2.2

LOCATION	03SB0070610	03SS007A0002	03SS007A0204	03SS007A0406
SAMPLE DATE	20141010	20141013	20141013	20141013
SAMPLE ID	03SB0070610	03SS007A0002	03SS007A0204	03SS007A0406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	4
BOTTOM DEPTH	10	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	34	16	8.7	89
Gasoline Range Organics (mg/kg)	0.71 U	0.69 U	0.64 U	0.73 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	34	16	8.7	89
Miscellaneous Parameters				
Percent Moisture (%)	5.3	5.6	5.2	4.9

LOCATION	03SS007A0610	03SS0080002	03SB0080204	03SB0080204-D
SAMPLE DATE	20141013	20141010	20141010	20141010
SAMPLE ID	03SS007A0610	03SS0080002	03SB0080204	03SB0080204-D
SAMPLE CODE	NORMAL	NORMAL	ORIG	DUP
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	2
BOTTOM DEPTH	10	2	4	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	11	290	14	12
Gasoline Range Organics (mg/kg)	0.64 U	0.68 U	0.68 U	0.68 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	11	290	14	12
Miscellaneous Parameters				
Percent Moisture (%)	6.6	3	3.6	3.5

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0080406	03SB0080610	03SS0090002	03SB0090204
SAMPLE DATE	20141010	20141010	20141010	20141010
SAMPLE ID	03SB0080406	03SB0080610	03SS0090002	03SB0090204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	12	13	530	15
Gasoline Range Organics (mg/kg)	0.62 U	0.99 U	0.79 U	0.70 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	12	13	530	15
Miscellaneous Parameters				
Percent Moisture (%)	4.2	8.5	6.5	4.2

LOCATION	03SB0090406	03SB0090610	03SS009A0002	03SB009A0204
SAMPLE DATE	20141010	20141010	20141013	20141013
SAMPLE ID	03SB0090406	03SB0090610	03SS009A0002	03SB009A0204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	25	10	63	47
Gasoline Range Organics (mg/kg)	0.67 U	0.71 U	0.71 U	0.64 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	25	10	63	47
Miscellaneous Parameters				
Percent Moisture (%)	2	8	4.7	5.6

LOCATION	03SB009A0406	03SB009A0610	03SS0100002	03SB0100204
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB009A0406	03SB009A0610	03SS0100002	03SB0100204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	250	200	120	15
Gasoline Range Organics (mg/kg)	0.59 U	2.3	0.64 U	0.71 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	250	202	120	15
Miscellaneous Parameters				
Percent Moisture (%)	5.9	5.7	5.6	9.1

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0100406	03SB0100610	03SS0110002	03SB0110204
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0100406	03SB0100610	03SS0110002	03SB0110204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	300	120	120	11
Gasoline Range Organics (mg/kg)	0.74 U	0.71 U	0.71 U	0.69 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	300	120	120	11
Miscellaneous Parameters				
Percent Moisture (%)	6.5	5.8	5.6	3.6

LOCATION	03SB0110406	03SB0110610	03SS0120002	03SB0120204
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0110406	03SB0110610	03SS0120002	03SB0120204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	9	55	240	16
Gasoline Range Organics (mg/kg)	0.58 U	0.7 U	0.64 U	0.60 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	9	55	240	16
Miscellaneous Parameters				
Percent Moisture (%)	2.4	6.5	4.7	3.6

LOCATION	03SB0120406	03SB0120610	03SS0130002	03SB0130204
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0120406	03SB0120610	03SS0130002	03SB0130204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	47	16	78	36
Gasoline Range Organics (mg/kg)	0.68 U	0.72 U	0.72 U	0.66 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	47	16	78	36
Miscellaneous Parameters				
Percent Moisture (%)	2.7	9.2	6.7	7

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0130406	03SB0130610	03SS0140002	03SB0140204
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0130406	03SB0130610	03SS0140002	03SB0140204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	81	390	1000	220
Gasoline Range Organics (mg/kg)	0.71 U	0.60 U	0.90 U	0.64 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	81	390	1000	220
Miscellaneous Parameters				
Percent Moisture (%)	8.4 J	4.6	6	3.9

LOCATION	03SB0140406	03SB0140610	03SS0150002	03SB0150204
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0140406	03SB0140610	03SS0150002	03SB0150204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	230	160	330	26
Gasoline Range Organics (mg/kg)	19	460	0.86 U	0.79 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	249	620	330	26
Miscellaneous Parameters				
Percent Moisture (%)	3.7	7.7	7.8	4.3

LOCATION	03SB0150406	03SB0150610	03SS0160002	03SB0160204
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0150406	03SB0150610	03SS0160002	03SB0160204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	84	79	49 J	17
Gasoline Range Organics (mg/kg)	0.57 U	0.76 U	0.69 U	0.86 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	84	79	49	17
Miscellaneous Parameters				
Percent Moisture (%)	3.9	5.9	4.3	6.1

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0160204-D	03SB0160406	03SB0160610	03SS0170002
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0160204-D	03SB0160406	03SB0160610	03SS0170002
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	14	8.4	13	40
Gasoline Range Organics (mg/kg)	0.67 U	0.59 U	0.57 U	0.63 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	14	8.4	13	40
Miscellaneous Parameters				
Percent Moisture (%)	6.5	6.3	7	5.3

LOCATION	03SB0170204	03SB0170406	03SB0170610	03SS0180002
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0170204	03SB0170406	03SB0170610	03SS0180002
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	7.7	1.8 U	200	210
Gasoline Range Organics (mg/kg)	0.62 U	0.59 U	0.69 U	0.74 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	7.7	1.8 U	200	210
Miscellaneous Parameters				
Percent Moisture (%)	7.7	5.1	4.1	8.2

LOCATION	03SS0180204	03SB0180406	03SB0180610	03SS0190002
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SS0180204	03SB0180406	03SB0180610	03SS0190002
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	1.8 U	62	20	100
Gasoline Range Organics (mg/kg)	0.61 U	0.70 U	0.71 U	0.78 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	1.8 U	62	20	100
Miscellaneous Parameters				
Percent Moisture (%)	5	3.5	7.6	4.6

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0190204	03SB0190406	03SB0190610	03SS0200002
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0190204	03SB0190406	03SB0190610	03SS0200002
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	7.3	20	38	160 J
Gasoline Range Organics (mg/kg)	0.73 U	0.70 U	0.83 U	0.81 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	7.3	20	38	160
Miscellaneous Parameters				
Percent Moisture (%)	3.5	4.9	5.9	5.4

LOCATION	03SB0200204	03SB0200406	03SB0200610	03SS0210002
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0200204	03SB0200406	03SB0200610	03SS0210002
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	1.7 U	1.8 U	9.8	300
Gasoline Range Organics (mg/kg)	0.75 U	0.60 U	0.66 U	0.66 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	1.7 U	1.8 U	9.8	300
Miscellaneous Parameters				
Percent Moisture (%)	3.5	5	4.7	3.2

LOCATION	03SB0210204	03SB0210406	03SB0210610	03SS0220002
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SB0210204	03SB0210406	03SB0210610	03SS0220002
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	1.9 U	7.3	1.8 U	1100 J
Gasoline Range Organics (mg/kg)	0.73 U	0.58 U	0.73 U	0.70 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	1.9 U	7.3	1.8 U	1100
Miscellaneous Parameters				
Percent Moisture (%)	8.4	3.9	7.1	3

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SS0220002-D	03SB0220204	03SB0220406	03SB0220610
SAMPLE DATE	20141013	20141013	20141013	20141013
SAMPLE ID	03SS0220002-D	03SB0220204	03SB0220406	03SB0220610
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	0	2	4	6
BOTTOM DEPTH	2	4	6	10
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	740	7.7	49	110
Gasoline Range Organics (mg/kg)	0.67 U	0.77 U	0.69 U	0.62 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	740	7.7	49	110
Miscellaneous Parameters				
Percent Moisture (%)	3.4	6.9	3.3	7.2

LOCATION	03SS0230002	03SS0230002-D	03SB0230204	03SB0230406
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SS0230002	03SS0230002-D	03SB0230204	03SB0230406
SAMPLE CODE	ORIG	DUP	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	0	0	2	4
BOTTOM DEPTH	2	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	9.5	1.9 U	9.7	12
Gasoline Range Organics (mg/kg)	0.78 U	0.79 U	1.5 U	0.71 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	9.5	1.9 U	9.7	12
Miscellaneous Parameters				
Percent Moisture (%)	11	10	12	7.4

LOCATION	03SB0230610	03SS0240002	03SB0240204	03SB0240406
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0230610	03SS0240002	03SB0240204	03SB0240406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	4
BOTTOM DEPTH	10	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	11	170	1.8 U	13
Gasoline Range Organics (mg/kg)	0.79 U	0.75 U	0.80 U	0.67 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	11	170	1.8 U	13
Miscellaneous Parameters				
Percent Moisture (%)	10	9.1	3.5	11

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0240610	03SS0250002	03SB0250204	03SB0250406
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0240610	03SS0250002	03SB0250204	03SB0250406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	4
BOTTOM DEPTH	10	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	40	85	8	11
Gasoline Range Organics (mg/kg)	0.72 U	0.71 U	0.92 U	0.69 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	40	85	8	11
Miscellaneous Parameters				
Percent Moisture (%)	9.6	6.1	4.7	8.2

LOCATION	03SB0250610	03SS0260002	03SB0260204	03SB0260406
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0250610	03SS0260002	03SB0260204	03SB0260406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	4
BOTTOM DEPTH	10	2	4	6
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	32	59	12	11
Gasoline Range Organics (mg/kg)	0.69 U	0.73 U	0.69 U	0.73 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	32	59	12	11
Miscellaneous Parameters				
Percent Moisture (%)	7.6	4.3	9.9	3.5

LOCATION	03SB0260610	03SS0270002	03SB0270204	03SB0270204-D
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0260610	03SS0270002	03SB0270204	03SB0270204-D
SAMPLE CODE	NORMAL	NORMAL	ORIG	DUP
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	6	0	2	2
BOTTOM DEPTH	10	2	4	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	13	110	14	14
Gasoline Range Organics (mg/kg)	0.70 U	0.68 U	1.0 U	0.98 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	13	110	14	14
Miscellaneous Parameters				
Percent Moisture (%)	7	5.1	6.1	5.2

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0270406	03SB0270610	03SS0280002	03SB0280204
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0270406	03SB0270610	03SS0280002	03SB0280204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	11	14	180	13
Gasoline Range Organics (mg/kg)	0.82 U	0.75 U	0.71 U	0.65 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	11	14	180	13
Miscellaneous Parameters				
Percent Moisture (%)	7.4	7.5	5.5	3.3

LOCATION	03SB0280406	03SB0280610	03SS0290002	03SB0290204
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0280406	03SB0280610	03SS0290002	03SB0290204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	15	35	170	16
Gasoline Range Organics (mg/kg)	0.62 U	0.74 U	0.70 U	0.76 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	15	35	170	16
Miscellaneous Parameters				
Percent Moisture (%)	6.8	6.7	4.5	5.7

LOCATION	03SB0290406	03SB0290610	03SS0300002	03SB0300204
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0290406	03SB0290610	03SS0300002	03SB0300204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	12	11	330	15
Gasoline Range Organics (mg/kg)	0.71 U	0.64 U	0.73 U	0.66 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	12	11	330	15
Miscellaneous Parameters				
Percent Moisture (%)	6.5	9.9	6.7	8.9

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0300406	03SB0300610	03SS0310002	03SB0310204
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0300406	03SB0300610	03SS0310002	03SB0310204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	28	27	26	1.8 U
Gasoline Range Organics (mg/kg)	0.62 U	0.69 U	0.63 U	0.68 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	28	27	26	1.8 U
Miscellaneous Parameters				
Percent Moisture (%)	5.6	4.7	5.1	6.1

LOCATION	03SB0310406	03SB0310610	03SS0320002	03SB0320204
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0310406	03SB0310610	03SS0320002	03SB0320204
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	4	6	0	2
BOTTOM DEPTH	6	10	2	4
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	1.8 U	1.9 U	53	9.7
Gasoline Range Organics (mg/kg)	0.67 U	0.68 U	0.73 U	0.66 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	1.8 U	1.9 U	53	9.7
Miscellaneous Parameters				
Percent Moisture (%)	5.2	8.7	7.2	5.4

LOCATION	03SB0320204-D	03SB0320406	03SB0320610	03SB0330002
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0320204-D	03SB0320406	03SB0320610	03SB0330002
SAMPLE CODE	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	7.8	13	10	22
Gasoline Range Organics (mg/kg)	0.66 U	0.68 U	0.79 U	0.58 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	7.8	13	10	22
Miscellaneous Parameters				
Percent Moisture (%)	5.6	9.2	8.2	19

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	03SB0330204	03SB0330406	03SB0330610	03SS0340002
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0330204	03SB0330406	03SB0330610	03SS0340002
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	2.1 U	1.7 U	**10**	**130**
Gasoline Range Organics (mg/kg)	0.92 U	0.66 U	0.89 U	0.66 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	2.1 U	1.7 U	**10**	**130**
Miscellaneous Parameters				
Percent Moisture (%)	**21**	**2.7**	**19**	**5.6**

LOCATION	03SB0340204	03SB0340406	03SB0340610	03SS0350002
SAMPLE DATE	20141014	20141014	20141014	20141014
SAMPLE ID	03SB0340204	03SB0340406	03SB0340610	03SS0350002
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6	0
BOTTOM DEPTH	4	6	10	2
Petroleum Hydrocarbons				
Extractable Total Petroleum Hydrocarbon (mg/kg)	**7.4**	**13**	**11**	**17**
Gasoline Range Organics (mg/kg)	0.60 U	0.67 U	0.71 U	0.59 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	**7.4**	**13**	**11**	**17**
Miscellaneous Parameters				
Percent Moisture (%)	**4**	**4.5**	**7.8**	**3.1**

LOCATION	03SB0350204	03SB0350406	03SB0350610
SAMPLE DATE	20141014	20141014	20141014
SAMPLE ID	03SB0350204	03SB0350406	03SB0350610
SAMPLE CODE	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL
TOP DEPTH	2	4	6
BOTTOM DEPTH	4	6	10
Petroleum Hydrocarbons			
Extractable Total Petroleum Hydrocarbon (mg/kg)	**8.9**	1.8 U	**110**
Gasoline Range Organics (mg/kg)	0.75 U	0.68 U	0.71 U
Total Petroleum Hydrocarbons (mg/kg)[(1)(2)]	**8.9**	1.8 U	**110**
Miscellaneous Parameters			
Percent Moisture (%)	**1.9**	**6.9**	**7.5**

TABLE C-1
PETROLEUM HYDROCARBON RESULTS
COMPARISON TO DIRECT CONTACT CRITERIA
CED AREA SITE 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

Detected concentrations are presented in bold font.

Footnotes:
2 - Total petroleum hydrocarbons are the sum of detected extractable total petroleum hydrocarbon and gasoline range organic results.
3 - For samples in which both extractable TPH and GRO were non-detected, the detection limit for extractable TPH was used for TPH.

Definitions:
NA = Not applicable/not available

Qualifiers:
J = Estimated value.
U = Non-detected value.

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-10S	MW01-12S	MW01-13S	MW01-14S	MW02-03S
SAMPLE ID	MW01-10S-NWG-100214	MW01-12S-NWG-100214	MW01-13Sa-NWG-102714	MW01-14S-NWG-100914	MW02-03S-NWG-100314
SAMPLE DATE	20141002	20141002	20141027	20141009	20141003
TOP DEPTH (FEET)	13	14	13	15	20
BOTTOM DEPTH (FEET)	23	24	23	25	30
VOLATILES (UG/L)					
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	NA
1,1,2-TRICHLOROTRIFLUOROETHANE	1 UJ	1 UJ	1 U	1 U	NA
1,1-DICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,1-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2,3-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U	1 U	NA
1,2-DIBROMOETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2-DICHLOROETHANE	0.5 UJ	0.5 UJ	0.5 U	0.5 U	NA
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	NA
1,3-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,4-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
2-BUTANONE	2.5 U	2.5 U	2.5 UJ	2.5 U	NA
2-HEXANONE	2.5 U	2.5 U	2.5 U	2.5 U	NA
4-METHYL-2-PENTANONE	1 U	1 U	1 U	1 U	NA
ACETONE	2.5 U	2.5 U	2.5 U	2.5 UJ	NA
BENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
BROMOCHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
BROMODICHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
BROMOFORM	1 U	1 U	1 UJ	1 U	NA
BROMOMETHANE	1 U	1 U	1 UJ	1 UJ	NA
CARBON DISULFIDE	0.5 U	0.5 U	0.5 U	0.5 U	NA
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	NA
CHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
CHLORODIBROMOMETHANE	1 U	1 U	1 U	1 U	NA
CHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
CHLOROFORM	0.5 U	0.5 U	0.5 U	0.5 U	NA
CHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
CYCLOHEXANE	1 U	1 U	1 U	1 U	NA
DICHLORODIFLUOROMETHANE	1 UJ	1 UJ	1 U	1 UJ	NA
ETHYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
ISOPROPYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
METHYL ACETATE	1 U	1 U	1 U	1 U	NA
METHYL CYCLOHEXANE	1 U	1 U	1 U	1 U	NA
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U	0.5 U	0.5 U	NA
METHYLENE CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	NA
STYRENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	NA
TOLUENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
TOTAL XYLENES	1 U	1 U	1 U	1 U	NA
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	NA
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
TRICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	NA
TRICHLOROFLUOROMETHANE	1 UJ	1 UJ	1 UJ	1 UJ	NA
VINYL CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	NA

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-10S	MW01-12S	MW01-13S	MW01-14S	MW02-03S
SAMPLE ID	MW01-10S-NWG-100214	MW01-12S-NWG-100214	MW01-13Sa-NWG-102714	MW01-14S-NWG-100914	MW02-03S-NWG-100314
SAMPLE DATE	20141002	20141002	20141027	20141009	20141003
TOP DEPTH (FEET)	13	14	13	15	20
BOTTOM DEPTH (FEET)	23	24	23	25	30
SEMIVOLATILES (UG/L)					
1,1-BIPHENYL	NA	NA	NA	NA	NA
1,4-DIOXANE	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA
ACETOPHENONE	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA
ATRAZINE	NA	NA	NA	NA	NA
BENZALDEHYDE	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA
CAPROLACTAM	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-10S	MW01-12S	MW01-13S	MW01-14S	MW02-03S
SAMPLE ID	MW01-10S-NWG-100214	MW01-12S-NWG-100214	MW01-13Sa-NWG-102714	MW01-14S-NWG-100914	MW02-03S-NWG-100314
SAMPLE DATE	20141002	20141002	20141027	20141009	20141003
TOP DEPTH (FEET)	13	14	13	15	20
BOTTOM DEPTH (FEET)	23	24	23	25	30
FLUORANTHENE	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
PESTICIDES (UG/L)					
4,4'-DDD	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA
PCBS (UG/L)					
AROCLOR-1016	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA
METALS (UG/L)					
ALUMINUM	11.7 U	8.5 U	22	17.8 U	202
ANTIMONY	0.2 U	0.2 U	0.28 J	0.2 U	0.2 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW01-10S	MW01-12S	MW01-13S	MW01-14S	MW02-03S
SAMPLE ID	MW01-10S-NWG-100214	MW01-12S-NWG-100214	MW01-13Sa-NWG-102714	MW01-14S-NWG-100914	MW02-03S-NWG-100314
SAMPLE DATE	20141002	20141002	20141027	20141009	20141003
TOP DEPTH (FEET)	13	14	13	15	20
BOTTOM DEPTH (FEET)	23	24	23	25	30
ARSENIC	0.38 U	0.38 U	0.38 U	0.38 U	0.24 U
BARIUM	5.1 J	5.6 J	5.6 J	10.5	16.2
BERYLLIUM	0.15 U	0.15 U	0.15 U	0.15 U	0.17 U
CADMIUM	0.15 U	0.09 J	0.15 U	0.091 J	0.19 J
CALCIUM	4380	10600	5710	7810	34300
CHROMIUM	0.91 J	0.72 J	1.1 J	1.2 J	1 J
COBALT	0.033 U	0.24 U	0.56	0.098 U	0.56 J
COPPER	0.38 U	0.39 J	0.51 J	0.38 U	0.72 J
IRON	20 U	20 U	32.5 J	20 U	20 U
LEAD	0.15 U	0.15 U	0.39 U	0.15 U	0.12 U
MAGNESIUM	1430	1700	1620	2110	5850
MANGANESE	3.9	1.4 J	24.1	4.4	18.3
MERCURY	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
NICKEL	0.25 U	0.74 J	4.1	1.6	0.9 J
POTASSIUM	822	1340	1320	1590	2020
SELENIUM	0.25 U	0.25 U	0.25 U	0.37 J	0.41 J
SILVER	0.091 U	0.094 U	0.1 U	0.04 U	0.078 U
SODIUM	6420	4090	8590	27000	11800
THALLIUM	0.075 U	0.075 U	0.075 U	0.075 U	0.11 U
VANADIUM	1 U	1 U	1 U	1 U	1 U
ZINC	1 U	1.4 J	9.3 U	1.5 J	5.6
DISSOLVED METALS (UG/L)					
ALUMINUM	11.2 U	6.7 U	22.1	19.3 U	184
ANTIMONY	0.2 U	0.2 U	0.4 J	0.2 U	0.2 U
ARSENIC	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
BARIUM	5 J	5.6 J	5.4 J	10.1	15.6
BERYLLIUM	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U
CADMIUM	0.15 U	0.15 U	0.15 U	0.088 J	0.19 J
CALCIUM	4330	10200	5520	7480	32800
CHROMIUM	0.83 J	0.88 J	0.85 J	0.89 J	1 J
COBALT	0.048 U	0.23 U	0.52	0.078 U	0.51 U
COPPER	0.72 J	1.1 J	1.2 J	0.58 J	1.7 J
IRON	20 U	20 U	16.6 J	150 J	20 U
LEAD	0.15 U	0.15 U	0.19 U	0.22 U	0.17 U
MAGNESIUM	1400	1640	1560	2030	5650
MANGANESE	4.2	2.6	22.5	14.4	17.5
MERCURY	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
NICKEL	0.83 J	1.3	4.4	1.4	1.4
POTASSIUM	831	1330	1280	1540	1970
SELENIUM	0.25 U	0.25 U	0.25 U	0.36 J	0.34 J
SILVER	0.091 U	0.09 U	0.1 U	0.034 U	0.07 U
SODIUM	6330	4000	8320	25900	11200
THALLIUM	0.075 U	0.075 U	0.075 U	0.075 U	0.1 U
VANADIUM	1 U	1 U	1 U	1 U	1 U
ZINC	1.6 J	2 J	22.4 J	1.4 J	6
PETROLEUM HYDROCARBONS (MG/L)					
TPH (C09-C40)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)					
GASOLINE RANGE ORGANICS	20 U	20 U	20 U	20 U	NA

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-03S		MW02-04S	MW02-05S	MW02-06S
SAMPLE ID	MW02-03S-NWG-111914	MW02-03S-NWG-111914-D	MW02-04Sa-NWG-100614	MW02-05S-NWG-100214	MW02-06Sa-NWG-102914
SAMPLE DATE	20141119	20141119	20141006	20141002	20141029
TOP DEPTH (FEET)	20	20	16	16.5	16
BOTTOM DEPTH (FEET)	30	30	26	26.5	26
VOLATILES (UG/L)					
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMOETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 UJ
2-HEXANONE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	1 U	1 U	1 U	1 U	1 U
ACETONE	2.5 U	2.5 UJ	2.5 UJ	2.5 U	2.5 U
BENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOCHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	1 U	1 U	1 U	1 U	1 UJ
BROMOMETHANE	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
CARBON DISULFIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	1 U	1 U	1 UJ	1 U	1 U
ETHYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYL ACETATE	1 U	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	1 U	1 U	1 U	1 U	1 U
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	1 UJ	1 UJ	1 U	1 U	1 U
TOLUENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROFLUOROMETHANE	0.67 J	0.88 J	1 UJ	1 UJ	1 UJ
VINYL CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-03S		MW02-04S	MW02-05S	MW02-06S
SAMPLE ID	MW02-03S-NWG-111914	MW02-03S-NWG-111914-D	MW02-04Sa-NWG-100614	MW02-05S-NWG-100214	MW02-06Sa-NWG-102914
SAMPLE DATE	20141119	20141119	20141006	20141002	20141029
TOP DEPTH (FEET)	20	20	16	16.5	16
BOTTOM DEPTH (FEET)	30	30	26	26.5	26
SEMIVOLATILES (UG/L)					
1,1-BIPHENYL	NA	NA	NA	NA	NA
1,4-DIOXANE	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA
ACETOPHENONE	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA
ATRAZINE	NA	NA	NA	NA	NA
BENZALDEHYDE	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA
CAPROLACTAM	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-03S		MW02-04S	MW02-05S	MW02-06S
SAMPLE ID	MW02-03S-NWG-111914	MW02-03S-NWG-111914-D	MW02-04Sa-NWG-100614	MW02-05S-NWG-100214	MW02-06Sa-NWG-102914
SAMPLE DATE	20141119	20141119	20141006	20141002	20141029
TOP DEPTH (FEET)	20	20	16	16.5	16
BOTTOM DEPTH (FEET)	30	30	26	26.5	26
FLUORANTHENE	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	NA	NA	0.1 U	0.1 U	0.1 U
PESTICIDES (UG/L)					
4,4'-DDD	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA
PCBS (UG/L)					
AROCLOR-1016	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA
METALS (UG/L)					
ALUMINUM	NA	NA	16.5 U	38.2	12.8 U
ANTIMONY	NA	NA	0.2 U	0.41 J	0.36 J

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-03S		MW02-04S	MW02-05S	MW02-06S
SAMPLE ID	MW02-03S-NWG-111914	MW02-03S-NWG-111914-D	MW02-04Sa-NWG-100614	MW02-05S-NWG-100214	MW02-06Sa-NWG-102914
SAMPLE DATE	20141119	20141119	20141006	20141002	20141029
TOP DEPTH (FEET)	20	20	16	16.5	16
BOTTOM DEPTH (FEET)	30	30	26	26.5	26
ARSENIC	NA	NA	0.38 U	0.38 U	0.38 U
BARIUM	NA	NA	2 J	8 J	8.2 J
BERYLLIUM	NA	NA	0.15 U	0.08 U	0.15 U
CADMIUM	NA	NA	0.1 J	0.16 J	0.15 U
CALCIUM	NA	NA	5770	7940	12100
CHROMIUM	NA	NA	1.6 J	1.3 J	0.25 U
COBALT	NA	NA	0.042 U	0.19 U	0.15 U
COPPER	NA	NA	0.38 U	0.28 J	0.55 J
IRON	NA	NA	14.5 J	20 U	20 U
LEAD	NA	NA	0.09 U	0.15 U	0.14 U
MAGNESIUM	NA	NA	1420	1830	1800
MANGANESE	NA	NA	4.1	10.8	13.8
MERCURY	NA	NA	0.05 U	0.05 U	0.05 U
NICKEL	NA	NA	0.59 J	0.57 J	0.39 J
POTASSIUM	NA	NA	711	776	1290
SELENIUM	NA	NA	0.15 J	0.2 J	0.25 U
SILVER	NA	NA	0.074 U	0.14 U	0.1 U
SODIUM	NA	NA	5900	6470	5710
THALLIUM	NA	NA	0.075 U	0.075 U	0.075 U
VANADIUM	NA	NA	1.3 J	1 U	1 U
ZINC	NA	NA	1 U	1.2 J	7.2 U
DISSOLVED METALS (UG/L)					
ALUMINUM	NA	NA	6 U	34	15.6 U
ANTIMONY	NA	NA	0.2 U	0.28 J	0.3 J
ARSENIC	NA	NA	0.38 U	0.38 U	0.38 U
BARIUM	NA	NA	2 J	5.2 J	8.1 J
BERYLLIUM	NA	NA	0.15 U	0.078 U	0.15 U
CADMIUM	NA	NA	0.088 J	0.18 J	0.15 U
CALCIUM	NA	NA	5650	7920	11800
CHROMIUM	NA	NA	1.4 J	1.3 J	0.25 U
COBALT	NA	NA	0.049 U	0.17 U	0.19 U
COPPER	NA	NA	0.87 J	1.6 J	1.7 J
IRON	NA	NA	20 U	20 U	37.6 J
LEAD	NA	NA	0.15 U	0.23 U	0.17 U
MAGNESIUM	NA	NA	1380	1830	1780
MANGANESE	NA	NA	3.9	12.1	13.9
MERCURY	NA	NA	0.05 U	0.05 U	0.053 U
NICKEL	NA	NA	1	5.3	1.4
POTASSIUM	NA	NA	716	801	1310
SELENIUM	NA	NA	0.25 U	0.25 U	0.25 U
SILVER	NA	NA	0.061 U	0.11 U	0.1 U
SODIUM	NA	NA	5780	6570	5650
THALLIUM	NA	NA	0.075 U	0.075 U	0.075 U
VANADIUM	NA	NA	0.64 J	1 U	1 U
ZINC	NA	NA	1.5 J	8	11.8 J
PETROLEUM HYDROCARBONS (MG/L)					
TPH (C09-C40)	NA	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)					
GASOLINE RANGE ORGANICS	20 U	20 U	20 U	20 U	20 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S	MW02-09S	MW02-10S		MW02-11S
SAMPLE ID	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814	MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	20141001	20141008	20141010	20141010	20141008
TOP DEPTH (FEET)	11.8	12	13	13	13
BOTTOM DEPTH (FEET)	26.8	27	28	28	28
VOLATILES (UG/L)					
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMOETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	1 U	1 U	1 U	1 U	1 U
ACETONE	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
BENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOCHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
CARBON DISULFIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	1 U	1 U	10	10	1 U
DICHLORODIFLUOROMETHANE	1 U	1 UJ	1 UJ	1 UJ	1 UJ
ETHYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	0.5 U	0.5 U	14	14	0.5 U
METHYL ACETATE	1 U	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	1 U	1 U	8	8	1 U
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U
TOLUENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROFLUOROMETHANE	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
VINYL CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S	MW02-09S	MW02-10S		MW02-11S
SAMPLE ID	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814	MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	20141001	20141008	20141010	20141010	20141008
TOP DEPTH (FEET)	11.8	12	13	13	13
BOTTOM DEPTH (FEET)	26.8	27	28	28	28
SEMIVOLATILES (UG/L)					
1,1-BIPHENYL	NA	NA	NA	NA	NA
1,4-DIOXANE	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA
ACETOPHENONE	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA
ATRAZINE	NA	NA	NA	NA	NA
BENZALDEHYDE	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA
CAPROLACTAM	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S	MW02-09S	MW02-10S		MW02-11S
SAMPLE ID	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814	MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	20141001	20141008	20141010	20141010	20141008
TOP DEPTH (FEET)	11.8	12	13	13	13
BOTTOM DEPTH (FEET)	26.8	27	28	28	28
FLUORANTHENE	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	0.1 U	0.1 U	2.6	2.8	0.1 U
PESTICIDES (UG/L)					
4,4'-DDD	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA
PCBS (UG/L)					
AROCLOR-1016	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA
METALS (UG/L)					
ALUMINUM	17 U	13.7 U	49.1	37	80.1
ANTIMONY	0.2 U	0.2 U	0.23 J	0.2 J	0.2 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW02-08S	MW02-09S	MW02-10S		MW02-11S
SAMPLE ID	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814	MW02-10S-NWG-101014	MW02-10S-NWG-101014-D	MW02-11S-NWG-100814
SAMPLE DATE	20141001	20141008	20141010	20141010	20141008
TOP DEPTH (FEET)	11.8	12	13	13	13
BOTTOM DEPTH (FEET)	26.8	27	28	28	28
ARSENIC	0.38 U	0.38 U	0.34 U	0.47 U	0.38 U
BARIUM	12.6	2.9 J	3.5 J	3.5 J	2.1 J
BERYLLIUM	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
CADMIUM	0.13 J	0.15 U	0.2 J	0.12 J	0.1 J
CALCIUM	27300	3230	11900	12300	3610
CHROMIUM	1.2 J	0.93 J	2.9	2.8	1.8 J
COBALT	1.2 U	0.05 U	0.54 U	0.55 U	0.12 U
COPPER	0.71 U	0.38 U	0.81 J	0.7 J	0.49 J
IRON	40.3 U	20 U	1010	1050	163 J
LEAD	0.11 U	0.11 U	0.17 U	0.13 U	0.22 U
MAGNESIUM	2470	814	1370	1410	1050
MANGANESE	6.5	3.5	332	357	8
MERCURY	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
NICKEL	2.6	0.25 U	0.93 J	0.91 J	0.77 J
POTASSIUM	2410	697	1400	1460	614
SELENIUM	0.27 J	0.25 U	0.31 J	0.22 J	0.25 U
SILVER	0.17 U	0.048 U	0.023 U	0.1 U	0.053 U
SODIUM	5960	5830	7370	7620	5580
THALLIUM	0.053 U	0.075 U	0.075 U	0.075 U	0.075 U
VANADIUM	1 U	1 U	1.1 J	1 U	1 U
ZINC	2.7	1 U	46.6	58.8	1 U
DISSOLVED METALS (UG/L)					
ALUMINUM	4.4 U	14.2 U	3.6 U	3.3 U	13.4 U
ANTIMONY	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ARSENIC	0.38 U	0.38 U	0.19 U	0.38 U	0.38 U
BARIUM	11	3 J	3.6 J	3.6 J	2 J
BERYLLIUM	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
CADMIUM	0.13 J	0.54 J	0.13 J	0.12 J	0.14 J
CALCIUM	28300	3100	11200	11200	3620
CHROMIUM	1 J	1.1 J	0.87 J	0.82 J	1.3 J
COBALT	1.3 U	0.027 U	0.63 U	0.64 U	0.038 U
COPPER	2.2	1.2 J	0.27 J	0.58 J	0.93 J
IRON	20 U	20 U	1580	1530	180 J
LEAD	0.15 U	2.7	0.15 U	0.15 U	0.55 J
MAGNESIUM	2570	784	1500	1500	1030
MANGANESE	6.8	3.3	501	491	5.2
MERCURY	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
NICKEL	3.3	3.6	1.2	1.8	1.3
POTASSIUM	2530	708	1520	1530	626
SELENIUM	0.29 J	0.25 U	0.31 J	0.26 J	0.27 J
SILVER	0.11 U	0.049 U	0.1 U	0.1 U	0.043 U
SODIUM	6260	5650	7870	7870	5570
THALLIUM	0.054 U	0.075 U	0.075 U	0.075 U	0.075 U
VANADIUM	1 U	1 U	0.78 J	1 U	0.94 J
ZINC	5.1	6.9	51.7	49.7	2.5
PETROLEUM HYDROCARBONS (MG/L)					
TPH (C09-C40)	0.05 U	0.05 U	0.68	0.64	0.05 U
PETROLEUM HYDROCARBONS (UG/L)					
GASOLINE RANGE ORGANICS	20 U	20 U	1300	1400	20 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-01S		MW03-02S	MW03-03S	MW03-04S
SAMPLE ID	MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914	MW03-03Sa-NWG-103014	MW03-04S-NWG-093014
SAMPLE DATE	20141029	20141029	20140929	20141030	20140930
TOP DEPTH (FEET)	14	14	8.5	15	10
BOTTOM DEPTH (FEET)	24	24	23.5	25	25
VOLATILES (UG/L)					
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMOETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 U
2-HEXANONE	2.5 U	2.5 U	2.5 U	2.5 UJ	2.5 U
4-METHYL-2-PENTANONE	1 U	1 U	1 U	1 U	1 U
ACETONE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOCHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	1 UJ	1 UJ	1 U	1 UJ	1 U
BROMOMETHANE	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
CARBON DISULFIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYL ACETATE	1 U	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	1 U	1 U	1 U	1 U	1 U
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U
TOLUENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
TRICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROFLUOROMETHANE	1 UJ	1 UJ	1 UJ	1 U	1 UJ
VINYL CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-01S		MW03-02S	MW03-03S	MW03-04S
SAMPLE ID	MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914	MW03-03Sa-NWG-103014	MW03-04S-NWG-093014
SAMPLE DATE	20141029	20141029	20140929	20141030	20140930
TOP DEPTH (FEET)	14	14	8.5	15	10
BOTTOM DEPTH (FEET)	24	24	23.5	25	25
SEMIVOLATILES (UG/L)					
1,1-BIPHENYL	NA	NA	2 U	NA	NA
1,4-DIOXANE	NA	NA	10 U	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	2 U	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	2 U	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	2 U	NA	NA
2,4-DICHLOROPHENOL	NA	NA	2 U	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	2 U	NA	NA
2,4-DINITROPHENOL	NA	NA	10 U	NA	NA
2,4-DINITROTOLUENE	NA	NA	2 U	NA	NA
2,6-DINITROTOLUENE	NA	NA	2 U	NA	NA
2-CHLORONAPHTHALENE	NA	NA	2 U	NA	NA
2-CHLOROPHENOL	NA	NA	2 U	NA	NA
2-METHYLNAPHTHALENE	NA	NA	2 U	NA	NA
2-METHYLPHENOL	NA	NA	2 U	NA	NA
2-NITROANILINE	NA	NA	2 U	NA	NA
2-NITROPHENOL	NA	NA	2 U	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	10 U	NA	NA
3-NITROANILINE	NA	NA	2 U	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	2 U	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	2 U	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	2 U	NA	NA
4-CHLOROANILINE	NA	NA	2 U	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	2 U	NA	NA
4-METHYLPHENOL	NA	NA	2 U	NA	NA
4-NITROANILINE	NA	NA	2 U	NA	NA
4-NITROPHENOL	NA	NA	2 U	NA	NA
ACENAPHTHENE	NA	NA	2 U	NA	NA
ACENAPHTHYLENE	NA	NA	2 U	NA	NA
ACETOPHENONE	NA	NA	2 U	NA	NA
ANTHRACENE	NA	NA	2 U	NA	NA
ATRAZINE	NA	NA	2 U	NA	NA
BENZALDEHYDE	NA	NA	2 UJ	NA	NA
BENZO(A)ANTHRACENE	NA	NA	2 U	NA	NA
BENZO(A)PYRENE	NA	NA	2 U	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	2 U	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	2 U	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	2 U	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	2 U	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	2 U	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	2 U	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	2 U	NA	NA
CAPROLACTAM	NA	NA	10 U	NA	NA
CARBAZOLE	NA	NA	2 U	NA	NA
CHRYSENE	NA	NA	2 U	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	2 U	NA	NA
DIBENZOFURAN	NA	NA	2 U	NA	NA
DIETHYL PHTHALATE	NA	NA	2 U	NA	NA
DIMETHYL PHTHALATE	NA	NA	2 U	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	9.3 U	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	2 U	NA	NA

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-01S		MW03-02S	MW03-03S	MW03-04S
SAMPLE ID	MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914	MW03-03Sa-NWG-103014	MW03-04S-NWG-093014
SAMPLE DATE	20141029	20141029	20140929	20141030	20140930
TOP DEPTH (FEET)	14	14	8.5	15	10
BOTTOM DEPTH (FEET)	24	24	23.5	25	25
FLUORANTHENE	NA	NA	2 U	NA	NA
FLUORENE	NA	NA	2 U	NA	NA
HEXACHLOROBENZENE	NA	NA	2 U	NA	NA
HEXACHLOROBUTADIENE	NA	NA	2 U	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	10 UJ	NA	NA
HEXACHLOROETHANE	NA	NA	2 U	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	2 U	NA	NA
ISOPHORONE	NA	NA	2 U	NA	NA
NAPHTHALENE	NA	NA	2 U	NA	NA
NITROBENZENE	NA	NA	2 U	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	2 U	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	2 U	NA	NA
PENTACHLOROPHENOL	NA	NA	10 U	NA	NA
PHENANTHRENE	NA	NA	2 U	NA	NA
PHENOL	NA	NA	2 U	NA	NA
PYRENE	NA	NA	2 U	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)					
NAPHTHALENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
PESTICIDES (UG/L)					
4,4'-DDD	NA	NA	0.025 U	NA	NA
4,4'-DDE	NA	NA	0.025 U	NA	NA
4,4'-DDT	NA	NA	0.025 U	NA	NA
ALDRIN	NA	NA	0.013 U	NA	NA
ALPHA-BHC	NA	NA	0.013 U	NA	NA
ALPHA-CHLORDANE	NA	NA	0.013 U	NA	NA
BETA-BHC	NA	NA	0.013 U	NA	NA
DELTA-BHC	NA	NA	0.013 U	NA	NA
DIELDRIN	NA	NA	0.025 U	NA	NA
ENDOSULFAN I	NA	NA	0.013 U	NA	NA
ENDOSULFAN II	NA	NA	0.025 U	NA	NA
ENDOSULFAN SULFATE	NA	NA	0.025 U	NA	NA
ENDRIN	NA	NA	0.025 U	NA	NA
ENDRIN ALDEHYDE	NA	NA	0.025 U	NA	NA
ENDRIN KETONE	NA	NA	0.025 U	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	0.013 U	NA	NA
GAMMA-CHLORDANE	NA	NA	0.013 U	NA	NA
HEPTACHLOR	NA	NA	0.013 U	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	0.013 U	NA	NA
METHOXYCHLOR	NA	NA	0.13 U	NA	NA
TOXAPHENE	NA	NA	0.5 U	NA	NA
PCBS (UG/L)					
AROCLOR-1016	NA	NA	0.25 U	NA	NA
AROCLOR-1221	NA	NA	0.5 U	NA	NA
AROCLOR-1232	NA	NA	0.25 U	NA	NA
AROCLOR-1242	NA	NA	0.25 U	NA	NA
AROCLOR-1248	NA	NA	0.25 U	NA	NA
AROCLOR-1254	NA	NA	0.25 U	NA	NA
AROCLOR-1260	NA	NA	0.25 U	NA	NA
METALS (UG/L)					
ALUMINUM	57	50.6	9.8 U	57.4	79
ANTIMONY	0.29 J	0.26 J	0.37 J	0.27 J	0.2 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-01S		MW03-02S	MW03-03S	MW03-04S
SAMPLE ID	MW03-01SA-NWG-102914	MW03-01SA-NWG-102914-D	MW03-02S-NWG-092914	MW03-03Sa-NWG-103014	MW03-04S-NWG-093014
SAMPLE DATE	20141029	20141029	20140929	20141030	20140930
TOP DEPTH (FEET)	14	14	8.5	15	10
BOTTOM DEPTH (FEET)	24	24	23.5	25	25
ARSENIC	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
BARIUM	76.8	73.7	8.5 U	9.4 J	9 U
BERYLLIUM	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
CADMIUM	0.32 U	0.29 U	0.15 U	0.3 U	0.1 J
CALCIUM	25000	24700	4840	11500	3870
CHROMIUM	0.24 J	0.35 J	1.4 J	0.61 J	1.4 J
COBALT	0.93	0.9	0.029 U	0.2 U	0.065 U
COPPER	1.1 J	0.88 J	0.24 U	1.2 J	0.33 U
IRON	76.3 J	15.3 J	20 U	61.6 J	98.3 U
LEAD	0.22 U	0.18 U	0.15 U	0.31 U	0.22 U
MAGNESIUM	6110	6070	771	2380	886
MANGANESE	159	157	4.5	49.1	15.5
MERCURY	0.065 U	0.05 U	0.05 UJ	0.05 U	0.05 UJ
NICKEL	2.3	2.4	0.2 U	2.7	0.27 U
POTASSIUM	2730	2730	1990	1590	1530
SELENIUM	0.25 U	0.25 U	0.21 J	0.25 U	0.25 U
SILVER	0.1 U	0.1 U	0.61 U	0.1 U	0.3 U
SODIUM	61800	61600	4020	12200	5460
THALLIUM	0.075 U	0.075 U	0.093 U	0.075 U	0.075 U
VANADIUM	1 U	1 U	0.65 J	1 U	1 U
ZINC	6 U	14.7 J	0.82 J	16.9 J	1.2 J
DISSOLVED METALS (UG/L)					
ALUMINUM	41.9	48.9	8.6 U	28.2	16.7 U
ANTIMONY	0.28 J	0.28 J	0.29 J	0.21 J	0.22 J
ARSENIC	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
BARIUM	75.1	76.9	8.4 U	9.7 J	8.7 U
BERYLLIUM	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
CADMIUM	0.27 U	0.27 U	0.15 U	0.15 U	2.3
CALCIUM	25900	26900	4670	11600	3850
CHROMIUM	0.33 J	0.55 J	0.94 J	0.85 J	1.1 J
COBALT	0.65	0.64	0.033 U	0.18 U	0.051 U
COPPER	1.6 J	1 J	1.1 U	1.4 J	0.99 U
IRON	20 U	240	20 U	20 U	20 U
LEAD	0.18 U	0.3 U	0.15 U	0.18 U	0.098 U
MAGNESIUM	6370	6580	745	2380	869
MANGANESE	172	180	3.7	46.8	14.5
MERCURY	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 UJ
NICKEL	3	2.4	0.9 U	1.7	0.94 U
POTASSIUM	2780	2900	1940	1600	1540
SELENIUM	0.25 U	0.25 U	0.23 J	0.25 U	0.25 U
SILVER	0.1 U	0.1 U	0.52 U	0.1 U	0.29 U
SODIUM	60900	63200	3940	12200	5470
THALLIUM	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
VANADIUM	1 U	1 U	1 U	1 U	1 U
ZINC	13.4 J	47.4 J	1.4 J	11.3 J	1.8 J
PETROLEUM HYDROCARBONS (MG/L)					
TPH (C09-C40)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)					
GASOLINE RANGE ORGANICS	20 U	20 U	20 U	20 U	20 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**MW03-05S**
SAMPLE ID	**MW03-05S-NWG-100114**
SAMPLE DATE	**20141001**
TOP DEPTH (FEET)	**11**
BOTTOM DEPTH (FEET)	**26**
VOLATILES (UG/L)	
1,1,1-TRICHLOROETHANE	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U
1,1,2-TRICHLOROETHANE	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U
1,1-DICHLOROETHANE	0.5 U
1,1-DICHLOROETHENE	0.5 U
1,2,3-TRICHLOROBENZENE	0.5 U
1,2,4-TRICHLOROBENZENE	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	1 U
1,2-DIBROMOETHANE	0.5 U
1,2-DICHLOROBENZENE	0.5 U
1,2-DICHLOROETHANE	0.5 UJ
1,2-DICHLOROPROPANE	1 U
1,3-DICHLOROBENZENE	0.5 U
1,4-DICHLOROBENZENE	0.5 U
2-BUTANONE	2.5 U
2-HEXANONE	2.5 U
4-METHYL-2-PENTANONE	1 U
ACETONE	2.5 U
BENZENE	0.5 U
BROMOCHLOROMETHANE	0.5 U
BROMODICHLOROMETHANE	0.5 U
BROMOFORM	1 U
BROMOMETHANE	1 UJ
CARBON DISULFIDE	0.5 U
CARBON TETRACHLORIDE	1 U
CHLOROBENZENE	0.5 U
CHLORODIBROMOMETHANE	1 U
CHLOROETHANE	0.5 U
CHLOROFORM	0.5 U
CHLOROMETHANE	0.5 U
CIS-1,2-DICHLOROETHENE	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 U
CYCLOHEXANE	1 U
DICHLORODIFLUOROMETHANE	1 U
ETHYLBENZENE	0.5 U
ISOPROPYLBENZENE	0.5 U
METHYL ACETATE	1 U
METHYL CYCLOHEXANE	1 U
METHYL TERT-BUTYL ETHER	0.5 U
METHYLENE CHLORIDE	0.5 U
STYRENE	0.5 U
TETRACHLOROETHENE	1 U
TOLUENE	0.5 U
TOTAL XYLENES	1 U
TRANS-1,2-DICHLOROETHENE	1 U
TRANS-1,3-DICHLOROPROPENE	0.5 U
TRICHLOROETHENE	0.5 U
TRICHLOROFLUOROMETHANE	1 UJ
VINYL CHLORIDE	0.5 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**MW03-05S**
SAMPLE ID	**MW03-05S-NWG-100114**
SAMPLE DATE	**20141001**
TOP DEPTH (FEET)	**11**
BOTTOM DEPTH (FEET)	**26**
SEMIVOLATILES (UG/L)	
1,1-BIPHENYL	NA
1,4-DIOXANE	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA
2,4,5-TRICHLOROPHENOL	NA
2,4,6-TRICHLOROPHENOL	NA
2,4-DICHLOROPHENOL	NA
2,4-DIMETHYLPHENOL	NA
2,4-DINITROPHENOL	NA
2,4-DINITROTOLUENE	NA
2,6-DINITROTOLUENE	NA
2-CHLORONAPHTHALENE	NA
2-CHLOROPHENOL	NA
2-METHYLNAPHTHALENE	NA
2-METHYLPHENOL	NA
2-NITROANILINE	NA
2-NITROPHENOL	NA
3,3'-DICHLOROBENZIDINE	NA
3-NITROANILINE	NA
4,6-DINITRO-2-METHYLPHENOL	NA
4-BROMOPHENYL PHENYL ETHER	NA
4-CHLORO-3-METHYLPHENOL	NA
4-CHLOROANILINE	NA
4-CHLOROPHENYL PHENYL ETHER	NA
4-METHYLPHENOL	NA
4-NITROANILINE	NA
4-NITROPHENOL	NA
ACENAPHTHENE	NA
ACENAPHTHYLENE	NA
ACETOPHENONE	NA
ANTHRACENE	NA
ATRAZINE	NA
BENZALDEHYDE	NA
BENZO(A)ANTHRACENE	NA
BENZO(A)PYRENE	NA
BENZO(B)FLUORANTHENE	NA
BENZO(G,H,I)PERYLENE	NA
BENZO(K)FLUORANTHENE	NA
BIS(2-CHLOROETHOXY)METHANE	NA
BIS(2-CHLOROETHYL)ETHER	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA
BUTYL BENZYL PHTHALATE	NA
CAPROLACTAM	NA
CARBAZOLE	NA
CHRYSENE	NA
DIBENZO(A,H)ANTHRACENE	NA
DIBENZOFURAN	NA
DIETHYL PHTHALATE	NA
DIMETHYL PHTHALATE	NA
DI-N-BUTYL PHTHALATE	NA
DI-N-OCTYL PHTHALATE	NA

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**MW03-05S**
SAMPLE ID	**MW03-05S-NWG-100114**
SAMPLE DATE	**20141001**
TOP DEPTH (FEET)	**11**
BOTTOM DEPTH (FEET)	**26**
FLUORANTHENE	NA
FLUORENE	NA
HEXACHLOROBENZENE	NA
HEXACHLOROBUTADIENE	NA
HEXACHLOROCYCLOPENTADIENE	NA
HEXACHLOROETHANE	NA
INDENO(1,2,3-CD)PYRENE	NA
ISOPHORONE	NA
NAPHTHALENE	NA
NITROBENZENE	NA
N-NITROSO-DI-N-PROPYLAMINE	NA
N-NITROSODIPHENYLAMINE	NA
PENTACHLOROPHENOL	NA
PHENANTHRENE	NA
PHENOL	NA
PYRENE	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)	
NAPHTHALENE	0.1 U
PESTICIDES (UG/L)	
4,4'-DDD	NA
4,4'-DDE	NA
4,4'-DDT	NA
ALDRIN	NA
ALPHA-BHC	NA
ALPHA-CHLORDANE	NA
BETA-BHC	NA
DELTA-BHC	NA
DIELDRIN	NA
ENDOSULFAN I	NA
ENDOSULFAN II	NA
ENDOSULFAN SULFATE	NA
ENDRIN	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
GAMMA-BHC (LINDANE)	NA
GAMMA-CHLORDANE	NA
HEPTACHLOR	NA
HEPTACHLOR EPOXIDE	NA
METHOXYCHLOR	NA
TOXAPHENE	NA
PCBS (UG/L)	
AROCLOR-1016	NA
AROCLOR-1221	NA
AROCLOR-1232	NA
AROCLOR-1242	NA
AROCLOR-1248	NA
AROCLOR-1254	NA
AROCLOR-1260	NA
METALS (UG/L)	
ALUMINUM	24.2
ANTIMONY	0.2 U

TABLE C-2
GROUNDWATER RESULTS - SITES 02 03
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**MW03-05S**
SAMPLE ID	**MW03-05S-NWG-100114**
SAMPLE DATE	**20141001**
TOP DEPTH (FEET)	**11**
BOTTOM DEPTH (FEET)	**26**
ARSENIC	0.38 U
BARIUM	7.1 U
BERYLLIUM	0.15 U
CADMIUM	0.49 J
CALCIUM	3710
CHROMIUM	0.9 J
COBALT	0.03 U
COPPER	0.24 U
IRON	31.6 U
LEAD	0.088 U
MAGNESIUM	760
MANGANESE	6.2
MERCURY	0.05 UJ
NICKEL	12.5
POTASSIUM	747
SELENIUM	0.25 U
SILVER	0.19 U
SODIUM	4250
THALLIUM	0.075 U
VANADIUM	1 U
ZINC	3.9
DISSOLVED METALS (UG/L)	
ALUMINUM	11.5 U
ANTIMONY	0.2 U
ARSENIC	0.38 U
BARIUM	6.2 U
BERYLLIUM	0.15 U
CADMIUM	0.43 J
CALCIUM	3440
CHROMIUM	0.94 J
COBALT	0.025 U
COPPER	0.74 U
IRON	20 U
LEAD	0.077 U
MAGNESIUM	706
MANGANESE	5.4
MERCURY	0.05 UJ
NICKEL	10.6
POTASSIUM	697
SELENIUM	0.25 U
SILVER	0.17 U
SODIUM	3990
THALLIUM	0.075 U
VANADIUM	0.64 J
ZINC	5
PETROLEUM HYDROCARBONS (MG/L)	
TPH (C09-C40)	0.05 U
PETROLEUM HYDROCARBONS (UG/L)	
GASOLINE RANGE ORGANICS	20 U

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-15S	MW03-15I	MW03-16S	MW03-16I
SAMPLE ID	MW03-15S-NWG-100114	MW03-15I-NWG-092914	MW03-16S-NWG-100614	MW03-16I-NWG-102814
SAMPLE DATE	20141001	20140929	20141006	20141028
TOP DEPTH (FEET)	13	44	11.5	45
BOTTOM DEPTH (FEET)	23	55	21.5	55
VOLATILES (UG/L)				
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	0.5 U	65
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	5.6
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U	1 U
1,2-DIBROMOETHANE	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.5 UJ	0.5 UJ	0.5 U	0.5 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	2.5 U	2.5 U	2.5 U	2.5 UJ
2-HEXANONE	2.5 U	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	1 U	1 U	1 U	1 U
ACETONE	2.5 U	2.5 U	2.5 UJ	2.5 U
BENZENE	0.5 U	0.5 U	0.5 U	0.5 U
BROMOCHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	1 U	1 U	1 U	1 UJ
BROMOMETHANE	1 UJ	1 UJ	1 UJ	1 UJ
CARBON DISULFIDE	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	1 U	1 U	1 U	1 U
CHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	0.5 U	100
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	1 U	1 U	1 UJ	1 U
ETHYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U
METHYL ACETATE	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	1 U	1 U	1 U	1 U

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**MW03-15S**	**MW03-15I**	**MW03-16S**	**MW03-16I**
SAMPLE ID	**MW03-15S-NWG-100114**	**MW03-15I-NWG-092914**	**MW03-16S-NWG-100614**	**MW03-16I-NWG-102814**
SAMPLE DATE	**20141001**	**20140929**	**20141006**	**20141028**
METHYL TERT-BUTYL ETHER	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U
TOLUENE	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	44
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	1.1	0.5 U	1.6	170
TRICHLOROFLUOROMETHANE	1 UJ	1 UJ	1 UJ	1 UJ
VINYL CHLORIDE	0.5 U	0.5 U	0.5 U	2.4
SEMIVOLATILES (UG/L)				
1,1-BIPHENYL	2 U	2 U	2 U	2 U
1,4-DIOXANE	10 U	10 U	10 U	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	2 U	2 U	2 U	2 U
2,4,5-TRICHLOROPHENOL	2 U	2 U	2 U	2 U
2,4,6-TRICHLOROPHENOL	2 U	2 U	2 U	2 U
2,4-DICHLOROPHENOL	2 U	2 U	2 U	2 U
2,4-DIMETHYLPHENOL	2 U	2 U	2 U	2 U
2,4-DINITROPHENOL	10 U	10 U	10 U	10 UJ
2,4-DINITROTOLUENE	2 U	2 U	2 U	2 U
2,6-DINITROTOLUENE	2 U	2 U	2 U	2 U
2-CHLORONAPHTHALENE	2 U	2 U	2 U	2 U
2-CHLOROPHENOL	2 U	2 U	2 U	2 U
2-METHYLNAPHTHALENE	2 U	2 U	2 U	2 UJ
2-METHYLPHENOL	2 U	2 U	2 U	2 U
2-NITROANILINE	2 U	2 U	2 U	2 U
2-NITROPHENOL	2 U	2 U	2 U	2 U
3,3'-DICHLOROBENZIDINE	10 U	10 U	10 U	10 U
3-NITROANILINE	2 U	2 U	2 U	2 U
4,6-DINITRO-2-METHYLPHENOL	2 U	2 U	2 U	2 U
4-BROMOPHENYL PHENYL ETHER	2 U	2 U	2 U	2 U
4-CHLORO-3-METHYLPHENOL	2 U	2 U	2 U	2 U
4-CHLOROANILINE	2 U	2 U	2 U	2 U
4-CHLOROPHENYL PHENYL ETHER	2 U	2 U	2 U	2 U
4-METHYLPHENOL	2 U	2 U	2 U	2 U
4-NITROANILINE	2 U	2 U	2 U	2 U
4-NITROPHENOL	2 U	2 U	2 U	2 U
ACENAPHTHENE	2 U	2 U	2 U	2 U
ACENAPHTHYLENE	2 U	2 U	2 U	2 U
ACETOPHENONE	2 U	2 U	2 U	2 U
ANTHRACENE	2 U	2 U	2 U	2 U

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**MW03-15S**	**MW03-15I**	**MW03-16S**	**MW03-16I**
SAMPLE ID	**MW03-15S-NWG-100114**	**MW03-15I-NWG-092914**	**MW03-16S-NWG-100614**	**MW03-16I-NWG-102814**
SAMPLE DATE	**20141001**	**20140929**	**20141006**	**20141028**
ATRAZINE	2 U	2 U	2 U	2 U
BENZALDEHYDE	2 UJ	2 UJ	2 UJ	2 UJ
BENZO(A)ANTHRACENE	2 U	2 U	2 U	2 U
BENZO(A)PYRENE	2 U	2 U	2 U	2 U
BENZO(B)FLUORANTHENE	2 U	2 U	2 U	2 U
BENZO(G,H,I)PERYLENE	2 U	2 U	2 U	2 U
BENZO(K)FLUORANTHENE	2 U	2 U	2 U	2 U
BIS(2-CHLOROETHOXY)METHANE	2 U	2 U	2 U	2 U
BIS(2-CHLOROETHYL)ETHER	2 U	2 U	2 U	2 U
BIS(2-ETHYLHEXYL)PHTHALATE	2 U	2 U	2 U	2 U
BUTYL BENZYL PHTHALATE	2 U	2 U	2 U	2 U
CAPROLACTAM	10 U	10 U	10 U	10 U
CARBAZOLE	2 U	2 U	2 U	2 U
CHRYSENE	2 U	2 U	2 U	2 U
DIBENZO(A,H)ANTHRACENE	2 U	2 U	2 U	2 U
DIBENZOFURAN	2 U	2 U	2 U	2 U
DIETHYL PHTHALATE	2 U	2 U	2 U	2 U
DIMETHYL PHTHALATE	2 U	2 U	2 U	2 U
DI-N-BUTYL PHTHALATE	2.8 U	7.2 U	4.8 U	2.4 U
DI-N-OCTYL PHTHALATE	2 U	2 U	2 U	2 U
FLUORANTHENE	2 U	2 U	2 U	2 U
FLUORENE	2 U	2 U	2 U	2 U
HEXACHLOROBENZENE	2 U	2 U	2 U	2 U
HEXACHLOROBUTADIENE	2 U	2 U	2 U	2 U
HEXACHLOROCYCLOPENTADIENE	10 UJ	10 UJ	10 UJ	10 UJ
HEXACHLOROETHANE	2 U	2 U	2 U	2 U
INDENO(1,2,3-CD)PYRENE	2 U	2 U	2 U	2 U
ISOPHORONE	2 U	2 U	2 U	2 U
NAPHTHALENE	2 U	2 U	2 U	2 U
NITROBENZENE	2 U	2 U	2 U	2 U
N-NITROSO-DI-N-PROPYLAMINE	2 U	2 U	2 U	2 U
N-NITROSODIPHENYLAMINE	2 U	2 U	2 U	2 U
PENTACHLOROPHENOL	10 U	10 U	10 U	10 UJ
PHENANTHRENE	2 U	2 U	2 U	2 U
PHENOL	2 U	2 U	2 U	2 U
PYRENE	2 U	2 U	2 U	2 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	NA	0.1 U	NA	NA

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-15S	MW03-15I	MW03-16S	MW03-16I
SAMPLE ID	MW03-15S-NWG-100114	MW03-15I-NWG-092914	MW03-16S-NWG-100614	MW03-16I-NWG-102814
SAMPLE DATE	20141001	20140929	20141006	20141028
PESTICIDES (UG/L)				
4,4'-DDD	0.025 U	0.025 U	0.025 U	0.025 U
4,4'-DDE	0.025 U	0.025 U	0.025 U	0.025 U
4,4'-DDT	0.025 U	0.025 U	0.025 U	0.025 U
ALDRIN	0.013 U	0.013 U	0.013 U	0.013 U
ALPHA-BHC	0.013 U	0.013 U	0.013 U	0.013 U
ALPHA-CHLORDANE	0.013 U	0.013 U	0.013 U	0.013 U
BETA-BHC	0.013 U	0.013 U	0.013 U	0.013 U
DELTA-BHC	0.013 U	0.013 U	0.013 U	0.013 U
DIELDRIN	0.025 U	0.025 U	0.025 U	0.025 U
ENDOSULFAN I	0.013 U	0.013 U	0.013 U	0.013 U
ENDOSULFAN II	0.025 U	0.025 U	0.025 U	0.025 U
ENDOSULFAN SULFATE	0.025 U	0.025 U	0.025 U	0.025 U
ENDRIN	0.025 U	0.025 U	0.025 U	0.025 U
ENDRIN ALDEHYDE	0.025 U	0.025 U	0.025 U	0.025 U
ENDRIN KETONE	0.025 U	0.025 U	0.025 U	0.025 U
GAMMA-BHC (LINDANE)	0.013 U	0.013 U	0.013 U	0.013 U
GAMMA-CHLORDANE	0.013 U	0.013 U	0.013 U	0.013 U
HEPTACHLOR	0.013 U	0.013 U	0.013 U	0.013 U
HEPTACHLOR EPOXIDE	0.013 U	0.013 U	0.013 U	0.013 U
METHOXYCHLOR	0.13 U	0.13 U	0.13 U	0.13 U
TOXAPHENE	0.5 U	0.5 U	0.5 U	0.5 U
PCBS (UG/L)				
AROCLOR-1016	0.25 U	0.25 U	0.25 U	0.25 UJ
AROCLOR-1221	0.5 U	0.5 U	0.5 U	0.5 UJ
AROCLOR-1232	0.25 U	0.25 U	0.25 U	0.25 UJ
AROCLOR-1242	0.25 U	0.25 U	0.25 U	0.25 UJ
AROCLOR-1248	0.25 U	0.25 U	0.25 U	0.25 UJ
AROCLOR-1254	0.25 U	0.25 U	0.25 U	0.25 UJ
AROCLOR-1260	0.25 U	0.25 U	0.25 U	0.25 UJ
METALS (UG/L)				
ALUMINUM	23.3	88.2	17.8 U	26.6
ANTIMONY	0.2 U	0.53 J	0.2 U	0.35 J
ARSENIC	0.38 U	0.38 U	0.38 U	0.38 U
BARIUM	5.2 U	18	8.6 J	15.5
BERYLLIUM	0.15 U	0.34 U	0.15 U	0.24 U
CADMIUM	0.7 J	0.29 J	0.15 U	0.15 U
CALCIUM	3490	8290	7140	9590
CHROMIUM	0.98 J	1.4 J	0.97 J	0.25 U
COBALT	0.64 U	16.7	0.034 U	7.2

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-15S	MW03-15I	MW03-16S	MW03-16I
SAMPLE ID	MW03-15S-NWG-100114	MW03-15I-NWG-092914	MW03-16S-NWG-100614	MW03-16I-NWG-102814
SAMPLE DATE	20141001	20140929	20141006	20141028
COPPER	0.46 U	0.68 U	0.38 U	0.29 J
IRON	20 U	6030 J	20 U	10800
LEAD	0.15 U	0.15 U	0.15 U	0.2 U
MAGNESIUM	1390	2810	1010	3700
MANGANESE	21.7	134	10.6	373
MERCURY	0.05 UJ	0.05 UJ	0.05 U	0.05 U
NICKEL	3.9	25.3	0.95 J	16.8
POTASSIUM	772	1530	1200	1670
SELENIUM	0.25 U	0.25 U	0.25 U	0.25 U
SILVER	0.16 U	0.48 U	0.052 U	0.1 U
SODIUM	6830	22300	6690	16300
THALLIUM	0.075 U	0.076 U	0.075 U	0.075 U
VANADIUM	0.84 J	1 U	0.84 J	1 U
ZINC	2.5	48	1.2 J	60.5 J
DISSOLVED METALS (UG/L)				
ALUMINUM	20.7 U	9.6 U	15.2 U	6.8 U
ANTIMONY	0.2 U	0.2 U	0.2 U	0.32 J
ARSENIC	0.38 U	0.21 U	0.38 U	0.38 U
BARIUM	5.4 U	18.7	8.2 J	15.6
BERYLLIUM	0.15 U	0.3 U	0.15 U	0.2 U
CADMIUM	0.15 U	0.15 U	0.15 U	0.15 U
CALCIUM	3610	8380	6790	9880
CHROMIUM	1.1 J	1 J	0.88 J	0.25 U
COBALT	0.66 U	17.2	0.051 U	7.4
COPPER	1 U	1.1 U	1.2 J	0.85 J
IRON	20 U	6350 J	20 U	10900
LEAD	0.15 U	0.15 U	0.073 U	0.19 U
MAGNESIUM	1430	2830	969	3770
MANGANESE	22.4	147	10.1	377
MERCURY	0.05 UJ	0.05 UJ	0.05 U	0.05 U
NICKEL	4.6	25.5	1.8	17.2
POTASSIUM	808	1540	1160	1750
SELENIUM	0.25 U	0.25 U	0.25 U	0.25 U
SILVER	0.15 U	0.37 U	0.053 U	0.1 U
SODIUM	7060	22200	6430	16800
THALLIUM	0.075 U	0.076 U	0.075 U	0.075 U
VANADIUM	1 U	1 U	1 J	1 U
ZINC	2.4	48.8	2	85.7 J
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	0.05 U	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	20 U	20 U	20 U	130 R

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-16I	MW03-17S		MW03-17I
SAMPLE ID	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014	MW03-17S-NWG-093014-D	MW03-17I-NWG-100214
SAMPLE DATE	20141028	20140930	20140930	20141002
TOP DEPTH (FEET)	45	11.5	11.5	45
BOTTOM DEPTH (FEET)	55	21.5	21.5	55
VOLATILES (UG/L)				
1,1,1-TRICHLOROETHANE	NA	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	NA	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	NA	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	1 U	1 U	1 U
1,1-DICHLOROETHANE	NA	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	NA	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROBENZENE	NA	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	NA	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	NA	1 U	1 U	1 U
1,2-DIBROMOETHANE	NA	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	NA	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	NA	0.5 UJ	0.5 UJ	0.5 UJ
1,2-DICHLOROPROPANE	NA	1 U	1 U	1 U
1,3-DICHLOROBENZENE	NA	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	NA	0.5 U	0.5 U	0.5 U
2-BUTANONE	NA	2.5 U	2.5 U	2.5 U
2-HEXANONE	NA	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	NA	1 U	1 U	1 U
ACETONE	NA	2.5 U	2.5 U	2.5 U
BENZENE	NA	0.5 U	0.5 U	0.5 U
BROMOCHLOROMETHANE	NA	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	NA	0.5 U	0.5 U	0.5 U
BROMOFORM	NA	1 U	1 U	1 U
BROMOMETHANE	NA	1 UJ	1 UJ	1 UJ
CARBON DISULFIDE	NA	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	NA	1 U	1 U	1 U
CHLOROBENZENE	NA	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	NA	1 U	1 U	1 U
CHLOROETHANE	NA	0.5 U	0.5 U	0.5 U
CHLOROFORM	NA	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	NA	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	NA	1.3	1.3	0.5 U
CIS-1,3-DICHLOROPROPENE	NA	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	NA	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	NA	1 U	1 U	1 U
ETHYLBENZENE	NA	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	NA	0.5 U	0.5 U	0.5 U
METHYL ACETATE	NA	1 U	1 U	1 U
METHYL CYCLOHEXANE	NA	1 U	1 U	1 U

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-16I	MW03-17S		MW03-17I
SAMPLE ID	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014	MW03-17S-NWG-093014-D	MW03-17I-NWG-100214
SAMPLE DATE	20141028	20140930	20140930	20141002
METHYL TERT-BUTYL ETHER	NA	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	NA	0.5 U	0.5 U	0.5 U
STYRENE	NA	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	1 U	1 U	1 U
TOLUENE	NA	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	NA	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	NA	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	NA	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	NA	3.3	3.7	4.9
TRICHLOROFLUOROMETHANE	NA	1 UJ	1 UJ	1 UJ
VINYL CHLORIDE	NA	0.5 U	0.5 U	0.5 U
SEMIVOLATILES (UG/L)				
1,1-BIPHENYL	2 U	2 U	2 U	2 U
1,4-DIOXANE	10 U	10 U	10 U	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	2 U	2 U	2 U	2 U
2,4,5-TRICHLOROPHENOL	2 U	2 U	2 U	2 U
2,4,6-TRICHLOROPHENOL	2 U	2 U	2 U	2 U
2,4-DICHLOROPHENOL	2 U	2 U	2 U	2 U
2,4-DIMETHYLPHENOL	2 U	2 U	2 U	2 U
2,4-DINITROPHENOL	10 UJ	10 U	10 U	10 U
2,4-DINITROTOLUENE	2 U	2 U	2 U	2 U
2,6-DINITROTOLUENE	2 U	2 U	2 U	2 U
2-CHLORONAPHTHALENE	2 U	2 U	2 U	2 U
2-CHLOROPHENOL	2 U	2 U	2 U	2 U
2-METHYLNAPHTHALENE	2 UJ	2 U	2 U	2 U
2-METHYLPHENOL	2 U	2 U	2 U	2 U
2-NITROANILINE	2 U	2 U	2 U	2 U
2-NITROPHENOL	2 U	2 U	2 U	2 U
3,3'-DICHLOROBENZIDINE	10 U	10 U	10 U	10 U
3-NITROANILINE	2 U	2 U	2 U	2 U
4,6-DINITRO-2-METHYLPHENOL	2 U	2 U	2 U	2 U
4-BROMOPHENYL PHENYL ETHER	2 U	2 U	2 U	2 U
4-CHLORO-3-METHYLPHENOL	2 U	2 U	2 U	2 U
4-CHLOROANILINE	2 U	2 U	2 U	2 U
4-CHLOROPHENYL PHENYL ETHER	2 U	2 U	2 U	2 U
4-METHYLPHENOL	2 U	2 U	2 U	2 U
4-NITROANILINE	2 U	2 U	2 U	2 U
4-NITROPHENOL	2 U	2 UJ	2 U	2 UJ
ACENAPHTHENE	2 U	2 U	2 U	2 U
ACENAPHTHYLENE	2 U	2 U	2 U	2 U
ACETOPHENONE	2 U	2 U	2 U	2 U
ANTHRACENE	2 U	2 U	2 U	2 U

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-16I	MW03-17S		MW03-17I
SAMPLE ID	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014	MW03-17S-NWG-093014-D	MW03-17I-NWG-100214
SAMPLE DATE	20141028	20140930	20140930	20141002
ATRAZINE	2 U	2 U	2 U	2 U
BENZALDEHYDE	2 UJ	2 UJ	2 UJ	2 UJ
BENZO(A)ANTHRACENE	2 U	2 U	2 U	2 U
BENZO(A)PYRENE	2 U	2 U	2 U	2 U
BENZO(B)FLUORANTHENE	2 U	2 U	2 U	2 U
BENZO(G,H,I)PERYLENE	2 U	2 U	2 U	2 U
BENZO(K)FLUORANTHENE	2 U	2 U	2 U	2 U
BIS(2-CHLOROETHOXY)METHANE	2 U	2 U	2 U	2 U
BIS(2-CHLOROETHYL)ETHER	2 U	2 UJ	2 U	2 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	2 U	2 U	2 U	2 U
BUTYL BENZYL PHTHALATE	2 U	2 U	2 U	2 U
CAPROLACTAM	10 U	10 U	10 U	10 U
CARBAZOLE	2 U	2 U	2 U	2 U
CHRYSENE	2 U	2 U	2 U	2 U
DIBENZO(A,H)ANTHRACENE	2 U	2 U	2 U	2 U
DIBENZOFURAN	2 U	2 U	2 U	2 U
DIETHYL PHTHALATE	2 U	2 U	2 U	2 U
DIMETHYL PHTHALATE	2 U	2 U	2 U	2 U
DI-N-BUTYL PHTHALATE	3.8 U	7 U	2.8 U	7.5 U
DI-N-OCTYL PHTHALATE	2 U	2 U	2 U	2 U
FLUORANTHENE	2 U	2 U	2 U	2 U
FLUORENE	2 U	2 U	2 U	2 U
HEXACHLOROBENZENE	2 U	2 U	2 U	2 U
HEXACHLOROBUTADIENE	2 U	2 U	2 U	2 U
HEXACHLOROCYCLOPENTADIENE	10 UJ	10 UJ	10 UJ	10 UJ
HEXACHLOROETHANE	2 U	2 U	2 U	2 U
INDENO(1,2,3-CD)PYRENE	2 U	2 U	2 U	2 U
ISOPHORONE	2 U	2 U	2 U	2 U
NAPHTHALENE	2 U	2 U	2 U	2 U
NITROBENZENE	2 U	2 U	2 U	2 U
N-NITROSO-DI-N-PROPYLAMINE	2 U	2 U	2 U	2 U
N-NITROSODIPHENYLAMINE	2 U	2 U	2 U	2 U
PENTACHLOROPHENOL	10 UJ	10 UJ	10 U	10 UJ
PHENANTHRENE	2 U	2 U	2 U	2 U
PHENOL	2 U	2 U	2 U	2 U
PYRENE	2 U	2 U	2 U	2 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)				
NAPHTHALENE	NA	NA	NA	NA

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-16I	MW03-17S		MW03-17I
SAMPLE ID	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014	MW03-17S-NWG-093014-D	MW03-17I-NWG-100214
SAMPLE DATE	20141028	20140930	20140930	20141002
PESTICIDES (UG/L)				
4,4'-DDD	0.025 U	0.025 U	0.025 U	0.025 U
4,4'-DDE	0.025 U	0.025 U	0.025 U	0.025 U
4,4'-DDT	0.025 U	0.025 U	0.025 U	0.025 U
ALDRIN	0.013 U	0.013 U	0.013 U	0.013 U
ALPHA-BHC	0.013 U	0.013 U	0.013 U	0.013 U
ALPHA-CHLORDANE	0.013 U	0.013 U	0.013 U	0.013 U
BETA-BHC	0.013 U	0.013 U	0.013 U	0.013 U
DELTA-BHC	0.013 U	0.013 U	0.013 U	0.013 U
DIELDRIN	0.025 U	0.025 U	0.025 U	0.025 U
ENDOSULFAN I	0.013 U	0.013 U	0.013 U	0.013 U
ENDOSULFAN II	0.025 U	0.025 U	0.025 U	0.025 U
ENDOSULFAN SULFATE	0.025 U	0.025 U	0.025 U	0.025 U
ENDRIN	0.025 U	0.025 U	0.025 U	0.025 U
ENDRIN ALDEHYDE	0.025 U	0.025 U	0.025 U	0.025 U
ENDRIN KETONE	0.025 U	0.025 U	0.025 U	0.025 U
GAMMA-BHC (LINDANE)	0.013 U	0.013 U	0.013 U	0.013 U
GAMMA-CHLORDANE	0.013 U	0.013 U	0.013 U	0.013 U
HEPTACHLOR	0.013 U	0.013 U	0.013 U	0.013 U
HEPTACHLOR EPOXIDE	0.013 U	0.013 U	0.013 U	0.013 U
METHOXYCHLOR	0.13 U	0.13 U	0.13 U	0.13 U
TOXAPHENE	0.5 U	0.5 U	0.5 U	0.5 U
PCBS (UG/L)				
AROCLOR-1016	0.25 UJ	0.25 U	0.25 U	0.25 U
AROCLOR-1221	0.5 UJ	0.5 U	0.5 U	0.5 U
AROCLOR-1232	0.25 UJ	0.25 U	0.25 U	0.25 U
AROCLOR-1242	0.25 UJ	0.25 U	0.25 U	0.25 U
AROCLOR-1248	0.25 UJ	0.25 U	0.25 U	0.25 U
AROCLOR-1254	0.25 UJ	0.25 U	0.25 U	0.25 U
AROCLOR-1260	0.25 UJ	0.25 U	0.25 U	0.25 U
METALS (UG/L)				
ALUMINUM	NA	37.4	37.6	21
ANTIMONY	NA	0.2 U	0.21 J	0.22 J
ARSENIC	NA	0.38 U	0.38 U	0.27 U
BARIUM	NA	15.5	15.6	10.8
BERYLLIUM	NA	0.15 U	0.15 U	0.27 U
CADMIUM	NA	0.14 J	0.12 J	0.15 U
CALCIUM	NA	6780	6660	7390
CHROMIUM	NA	0.81 J	1 J	1.2 J
COBALT	NA	7.3	7.3	11.4

TABLE C-3
GROUNDWATER RESULTS - DRUM REMOVAL AREA
FORMER NCBC DAVISVILLE
NORTH KINGSTOWN, RHODE ISLAND

LOCATION	MW03-16I	MW03-17S		MW03-17I
SAMPLE ID	MW03-16I-NWG-102814-D	MW03-17S-NWG-093014	MW03-17S-NWG-093014-D	MW03-17I-NWG-100214
SAMPLE DATE	20141028	20140930	20140930	20141002
COPPER	NA	1.5 J	1.9 J	0.38 U
IRON	NA	51.9 U	52.5 U	1500
LEAD	NA	0.15 U	0.11 U	0.15 U
MAGNESIUM	NA	2240	2240	2380
MANGANESE	NA	110	110	40.3
MERCURY	NA	0.05 UJ	0.05 UJ	0.05 U
NICKEL	NA	10.5	10.1	19.7
POTASSIUM	NA	1480	1490	1510
SELENIUM	NA	0.25 U	0.25 U	0.25 U
SILVER	NA	0.23 U	0.26 U	0.11 U
SODIUM	NA	11300	11400	18600
THALLIUM	NA	0.089 U	0.077 U	0.072 U
VANADIUM	NA	1 U	0.77 J	0.63 J
ZINC	NA	11.2	10.2	22.1
DISSOLVED METALS (UG/L)				
ALUMINUM	NA	33.6	35	18.3 U
ANTIMONY	NA	0.2 U	0.21 J	0.2 U
ARSENIC	NA	0.38 U	0.38 U	0.38 U
BARIUM	NA	15.5	15.8	10.9
BERYLLIUM	NA	0.15 U	0.15 U	0.25 U
CADMIUM	NA	0.92 J	0.13 J	0.15 U
CALCIUM	NA	6820	6840	7520
CHROMIUM	NA	0.84 J	0.94 J	0.83 J
COBALT	NA	7.2	7.4	11.4
COPPER	NA	2.5	3.1	0.74 J
IRON	NA	45.1 U	46.7 U	1490
LEAD	NA	0.078 U	0.075 U	0.075 U
MAGNESIUM	NA	2220	2280	2420
MANGANESE	NA	106	107	40
MERCURY	NA	0.05 UJ	0.05 UJ	0.05 U
NICKEL	NA	10.7	11	20.3
POTASSIUM	NA	1510	1550	1560
SELENIUM	NA	0.25 U	0.25 U	0.25 U
SILVER	NA	0.21 U	0.25 U	0.095 U
SODIUM	NA	11400	11700	19000
THALLIUM	NA	0.083 U	0.077 U	0.07 U
VANADIUM	NA	1 U	1 J	1 U
ZINC	NA	10.6	14.2	21.1
PETROLEUM HYDROCARBONS (MG/L)				
TPH (C09-C40)	NA	0.05 U	0.05 U	0.05 U
PETROLEUM HYDROCARBONS (UG/L)				
GASOLINE RANGE ORGANICS	NA	20 U	20 U	20 U

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION	DRUM-01-SOIL	DRUM-05-SOIL	DRUM-06-SOIL	DRUM-07-SOIL	DRUM-07-SOIL	DRUM-08-SOIL
SAMPLE ID	DRUM-01-SOIL	DRUM-05-SOIL	DRUM-06-SOIL	DRUM-07-SOIL	DRUM-07-SOIL-D	DRUM-08-SOIL
SAMPLE DATE	10/24/2013	10/22/2013	10/24/2013	10/24/2013	10/24/2013	10/24/2013
VOLATILES (UG/KG)						
1,1,1-TRICHLOROETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,1,2-TRICHLOROETHANE	0.98 U	1.1 U	0.98 U	1.1 U	1.2 U	0.99 U
1,1,2-TRICHLOROTRIFLUOROETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,1-DICHLOROETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,1-DICHLOROETHENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,2,3-TRICHLOROBENZENE	0.98 U	1.1 U	0.98 U	1.1 U	1.2 U	0.99 U
1,2,4-TRICHLOROBENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	4.9 U	5.6 U	4.9 U	5.6 U	6.1 U	5 U
1,2-DIBROMOETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,2-DICHLOROBENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,2-DICHLOROETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,2-DICHLOROPROPANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,3-DICHLOROBENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,4-DICHLOROBENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
1,4-DIOXANE	97.6 UR	110 UR	97.6 UR	110 UR	120 UR	99.2 UR
2-BUTANONE	7.3 U	8.3 U	7.3 U	8.4 U	9.1 U	7.4 U
2-HEXANONE	2.4 U	2.8 U	2.4 U	2.8 U	3 U	2.5 U
4-METHYL-2-PENTANONE	2.4 U	2.8 U	2.4 U	2.8 U	3 U	2.5 U
ACETONE	2.4 U	2.8 U	2.4 U	2.8 U	3 U	9.3 J
BENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
BROMOCHLOROMETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
BROMODICHLOROMETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
BROMOFORM	1.5 U	1.7 U	1.5 U	1.7 U	1.8 U	1.5 U
BROMOMETHANE	0.98 U	1.1 U	0.98 U	1.1 U	1.2 U	0.99 U
CARBON DISULFIDE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CARBON TETRACHLORIDE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CHLOROBENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CHLORODIBROMOMETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CHLOROETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CHLOROFORM	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CHLOROMETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CIS-1,2-DICHLOROETHENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
CYCLOHEXANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
DICHLORODIFLUOROMETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
ETHYLBENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
ISOPROPYLBENZENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
M+P-XYLENES	0.98 U	1.1 U	0.98 U	1.1 U	1.2 U	0.99 U
METHYL ACETATE	0.98 U	1.1 U	0.98 U	1.1 U	1.2 U	0.99 U
METHYL CYCLOHEXANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
METHYL TERT-BUTYL ETHER	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
METHYLENE CHLORIDE	2.4 U	0.56 U	2.7 U	2.9 U	3.7 U	2.5 U
O-XYLENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
STYRENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
TETRACHLOROETHENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
TOLUENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
TRANS-1,2-DICHLOROETHENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
TRICHLOROETHENE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
TRICHLOROFLUOROMETHANE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
VINYL CHLORIDE	0.49 U	0.56 U	0.49 U	0.56 U	0.61 U	0.5 U
SEMIVOLATILES (UG/KG)						
1,1-BIPHENYL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
1,2,4,5-TETRACHLOROBENZENE	37 U	35.9 UJ	35.7 U	35.4 U	35.6 U	35.9 U

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	DRUM-01-SOIL DRUM-01-SOIL 10/24/2013	DRUM-05-SOIL DRUM-05-SOIL 10/22/2013	DRUM-06-SOIL DRUM-06-SOIL 10/24/2013	DRUM-07-SOIL DRUM-07-SOIL 10/24/2013	DRUM-07-SOIL DRUM-07-SOIL-D 10/24/2013	DRUM-08-SOIL DRUM-08-SOIL 10/24/2013
2,2'-OXYBIS(1-CHLOROPROPANE)	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2,3,4,6-TETRACHLOROPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2,4,5-TRICHLOROPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2,4,6-TRICHLOROPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2,4-DICHLOROPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2,4-DIMETHYLPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2,4-DINITROPHENOL	300 U	290 UJ	290 UJ	280 U	290 U	290 U
2,4-DINITROTOLUENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2,6-DINITROTOLUENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2-CHLORONAPHTHALENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2-CHLOROPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2-METHYLNAPHTHALENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2-METHYLPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2-NITROANILINE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
2-NITROPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
3&4-METHYLPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
3,3'-DICHLOROBENZIDINE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
3-NITROANILINE	74 U	71.9 U	71.4 U	70.8 U	71.3 U	71.8 U
4,6-DINITRO-2-METHYLPHENOL	180 U	180 U	180 UJ	180 U	180 U	180 U
4-BROMOPHENYL PHENYL ETHER	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
4-CHLORO-3-METHYLPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
4-CHLOROANILINE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
4-CHLOROPHENYL PHENYL ETHER	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
4-NITROANILINE	74 U	71.9 U	71.4 U	70.8 U	71.3 U	71.8 U
4-NITROPHENOL	180 U	180 U	180 U	180 U	180 U	180 U
ACENAPHTHENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
ACENAPHTHYLENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
ACETOPHENONE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
ANTHRACENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
ATRAZINE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BENZALDEHYDE	37 UJ	35.9 UJ	35.7 UJ	35.4 UJ	35.6 UJ	35.9 UJ
BENZO(A)ANTHRACENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BENZO(A)PYRENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BENZO(B)FLUORANTHENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BENZO(G,H,I)PERYLENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BENZO(K)FLUORANTHENE	37 UJ	35.9 U	35.7 U	35.4 UJ	35.6 UJ	35.9 UJ
BIS(2-CHLOROETHOXY)METHANE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BIS(2-CHLOROETHYL)ETHER	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BIS(2-ETHYLHEXYL)PHTHALATE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
BUTYL BENZYL PHTHALATE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
CAPROLACTAM	74 U	71.9 U	71.4 U	70.8 U	71.3 U	71.8 U
CARBAZOLE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
CHRYSENE	37 U	35.9 U	35.7 UJ	35.4 U	35.6 U	35.9 U
DIBENZO(A,H)ANTHRACENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
DIBENZOFURAN	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
DIETHYL PHTHALATE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
DIMETHYL PHTHALATE	420	440	360	640	770	680
DI-N-BUTYL PHTHALATE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
DI-N-OCTYL PHTHALATE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
FLUORANTHENE	83.9 J	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
FLUORENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
HEXACHLOROBENZENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
HEXACHLOROBUTADIENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
HEXACHLOROCYCLOPENTADIENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
HEXACHLOROETHANE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
INDENO(1,2,3-CD)PYRENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	DRUM-01-SOIL DRUM-01-SOIL 10/24/2013	DRUM-05-SOIL DRUM-05-SOIL 10/22/2013	DRUM-06-SOIL DRUM-06-SOIL 10/24/2013	DRUM-07-SOIL DRUM-07-SOIL 10/24/2013	DRUM-07-SOIL DRUM-07-SOIL-D 10/24/2013	DRUM-08-SOIL DRUM-08-SOIL 10/24/2013
ISOPHORONE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
NAPHTHALENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
NITROBENZENE	37 U	35.9 UJ	35.7 U	35.4 U	35.6 U	35.9 U
N-NITROSO-DI-N-PROPYLAMINE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
N-NITROSODIPHENYLAMINE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
PENTACHLOROPHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
PHENANTHRENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
PHENOL	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
PYRENE	37 U	35.9 U	35.7 U	35.4 U	35.6 U	35.9 U
PESTICIDES (UG/KG)						
4,4'-DDD	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
4,4'-DDE	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
4,4'-DDT	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ALDRIN	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ALPHA-BHC	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ALPHA-CHLORDANE	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
BETA-BHC	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
DELTA-BHC	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
DIELDRIN	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ENDOSULFAN I	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ENDOSULFAN II	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ENDOSULFAN SULFATE	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ENDRIN	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ENDRIN ALDEHYDE	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
ENDRIN KETONE	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
GAMMA-BHC (LINDANE)	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
GAMMA-CHLORDANE	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
HEPTACHLOR	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
HEPTACHLOR EPOXIDE	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
METHOXYCHLOR	0.366 U	0.355 U	0.354 U	0.351 U	0.353 U	0.355 U
TOXAPHENE	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U
PCBS (UG/KG)						
AROCLOR-1016	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U
AROCLOR-1221	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U
AROCLOR-1232	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U
AROCLOR-1242	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U
AROCLOR-1248	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U
AROCLOR-1254	3.7 U	3.6 U	3.6 U	3.5 U	3.6 U	3.6 U
AROCLOR-1260	53.1	23.2	22.6	49.1	72.2	20.2
METALS (MG/KG)						
ALUMINUM	1400 J	6900 J	7400 J	1400 J	1400 J	1100 J
ANTIMONY	1.2 UJ	1.13 UJ	1.16 UJ	1.09 UJ	1.12 UJ	1.14 UJ
ARSENIC	2.14	1.46	1.91	2.28	2.2	1.84
BARIUM	16.8	15.1	16.9	14.6	14.3	12.4
BERYLLIUM	0.294	0.281	0.339	0.281	0.323	0.241 J
CADMIUM	0.144 U	0.143 J	0.139 U	0.13 U	0.134 U	0.137 U
CALCIUM	602 J	638 J	611 J	495 J	492 J	581 J
CHROMIUM	7.76 J	17.9 J	6.31 J	24.9 J	9.35 J	6.23 J
COBALT	5.57	4.71	4.6	5.53	5.77	6.32
COPPER	9.25	5.87	7.54	9.36	11.8	8.22
IRON	2700 J	22200 J	13200 J	3700 J	3700 J	3500 J
LEAD	37 J	97.4 J	39.6 J	128 J	47.3 J	22.8 J
MAGNESIUM	1400	1000	1100	1300	1300	995
MANGANESE	122	124	114	131	135	156
MERCURY	0.012	0.012	0.013	0.014	0.015	0.013
NICKEL	10.1	7.95	7.49	9.63	10.9	8.52

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	DRUM-01-SOIL DRUM-01-SOIL 10/24/2013	DRUM-05-SOIL DRUM-05-SOIL 10/22/2013	DRUM-06-SOIL DRUM-06-SOIL 10/24/2013	DRUM-07-SOIL DRUM-07-SOIL 10/24/2013	DRUM-07-SOIL DRUM-07-SOIL-D 10/24/2013	DRUM-08-SOIL DRUM-08-SOIL 10/24/2013
POTASSIUM	563 J	419 J	477 J	508 J	490 J	404 J
SELENIUM	0.463 J	0.454 U	0.465 U	0.552 J	0.536 J	0.457 U
SILVER	0.896	1.48 J	0.808 J	1.19	1.23	1.18
SODIUM	31.9 J	28 J	35.3 J	28.6 J	30.7 J	23.4 J
THALLIUM	0.962 U	0.907 U	0.93 U	0.869 U	0.896 U	0.913 U
VANADIUM	13.3	11.5	11.6	12.8	12.7	11
ZINC	44.8	43	44.9	49.4	54.7	36.9
MISCELLANEOUS PARAMETERS						
CYANIDE (MG/KG)	0.037 J	0.068 J	0.134 U	0.133 U	0.036 J	0.069 J
PETROLEUM HYDROCARBONS (UG/KG)						
TPH (C09-C40)	11554 J	7450 J	21736 J	8236 J	14477 J	10853 J

SOIL Footnotes:

NA = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

> = The chemical was detected.

J = The chemical was detected but the concentration reported is an estimated value.

U = The chemical was not detected.

< = The chemical was not detected.

R = The chemical was rejected.

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	DRUM-09-SOIL DRUM-09-SOIL 10/24/2013	DRUM-10-SOIL DRUM-10-SOIL 10/24/2013	DRUM-11-SOIL DRUM-11-SOIL 10/24/2013	DRUM-12-SOIL DRUM-12-SOIL 10/24/2013	QDC_DRUM-SOIL QDC_DRUM-SOIL 11/12/2013	STOCKPILE-01 STOCKPILE-01 11/12/2013
VOLATILES (UG/KG)						
1,1,1-TRICHLOROETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,1,2,2-TETRACHLOROETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,1,2-TRICHLOROETHANE	1.1 U	1.2 U	1.1 U	0.98 U	NA	NA
1,1,2-TRICHLOROTRIFLUOROETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,1-DICHLOROETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,1-DICHLOROETHENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,2,3-TRICHLOROBENZENE	1.1 U	1.2 U	1.1 U	0.98 U	NA	NA
1,2,4-TRICHLOROBENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	5.4 U	5.9 U	5.7 U	4.9 U	NA	NA
1,2-DIBROMOETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,2-DICHLOROBENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,2-DICHLOROETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,2-DICHLOROPROPANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,3-DICHLOROBENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,4-DICHLOROBENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
1,4-DIOXANE	110 UR	120 UR	110 UR	97.6 UR	NA	NA
2-BUTANONE	8.1 U	8.9 U	8.5 U	7.3 U	NA	NA
2-HEXANONE	2.7 U	3 U	2.8 U	2.4 U	NA	NA
4-METHYL-2-PENTANONE	2.7 U	3 U	2.8 U	2.4 U	NA	NA
ACETONE	2.7 U	3 U	2.8 U	2.4 U	NA	NA
BENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
BROMOCHLOROMETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
BROMODICHLOROMETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
BROMOFORM	1.6 U	1.8 U	1.7 U	1.5 U	NA	NA
BROMOMETHANE	1.1 U	1.2 U	1.1 U	0.98 U	NA	NA
CARBON DISULFIDE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CARBON TETRACHLORIDE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CHLOROBENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CHLORODIBROMOMETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CHLOROETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CHLOROFORM	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CHLOROMETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CIS-1,2-DICHLOROETHENE	0.54 U	0.59 U	10.3	14.4	NA	NA
CIS-1,3-DICHLOROPROPENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
CYCLOHEXANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
DICHLORODIFLUOROMETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
ETHYLBENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
ISOPROPYLBENZENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
M+P-XYLENES	1.1 U	1.2 U	1.1 U	0.98 U	NA	NA
METHYL ACETATE	1.1 U	1.2 U	1.1 U	0.98 U	NA	NA
METHYL CYCLOHEXANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
METHYL TERT-BUTYL ETHER	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
METHYLENE CHLORIDE	2.7 U	3.3 U	3.1 U	2.9 U	NA	NA
O-XYLENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
STYRENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
TETRACHLOROETHENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
TOLUENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
TRANS-1,2-DICHLOROETHENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
TRANS-1,3-DICHLOROPROPENE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
TRICHLOROETHENE	0.54 U	0.59 U	4.4 J	7	NA	NA
TRICHLOROFLUOROMETHANE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
VINYL CHLORIDE	0.54 U	0.59 U	0.57 U	0.49 U	NA	NA
SEMIVOLATILES (UG/KG)						
1,1-BIPHENYL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
1,2,4,5-TETRACHLOROBENZENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	DRUM-09-SOIL DRUM-09-SOIL 10/24/2013	DRUM-10-SOIL DRUM-10-SOIL 10/24/2013	DRUM-11-SOIL DRUM-11-SOIL 10/24/2013	DRUM-12-SOIL DRUM-12-SOIL 10/24/2013	QDC_DRUM-SOIL QDC_DRUM-SOIL 11/12/2013	STOCKPILE-01 STOCKPILE-01 11/12/2013
2,2'-OXYBIS(1-CHLOROPROPANE)	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2,3,4,6-TETRACHLOROPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2,4,5-TRICHLOROPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2,4,6-TRICHLOROPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2,4-DICHLOROPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2,4-DIMETHYLPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2,4-DINITROPHENOL	290 UJ	280 U	290 U	290 U	NA	NA
2,4-DINITROTOLUENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2,6-DINITROTOLUENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2-CHLORONAPHTHALENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2-CHLOROPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2-METHYLNAPHTHALENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2-METHYLPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2-NITROANILINE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
2-NITROPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
3&4-METHYLPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
3,3'-DICHLOROBENZIDINE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
3-NITROANILINE	72.5 U	70.9 U	72.8 U	72.3 U	NA	NA
4,6-DINITRO-2-METHYLPHENOL	180 UJ	180 U	180 U	180 U	NA	NA
4-BROMOPHENYL PHENYL ETHER	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
4-CHLORO-3-METHYLPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
4-CHLOROANILINE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
4-CHLOROPHENYL PHENYL ETHER	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
4-NITROANILINE	72.5 U	70.9 U	72.8 U	72.3 U	NA	NA
4-NITROPHENOL	180 U	180 U	180 U	180 U	NA	NA
ACENAPHTHENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
ACENAPHTHYLENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
ACETOPHENONE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
ANTHRACENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
ATRAZINE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BENZALDEHYDE	36.2 UJ	35.4 UJ	36.4 UJ	36.1 UJ	NA	NA
BENZO(A)ANTHRACENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BENZO(A)PYRENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BENZO(B)FLUORANTHENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BENZO(G,H,I)PERYLENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BENZO(K)FLUORANTHENE	36.2 U	35.4 UJ	36.4 UJ	36.1 UJ	NA	NA
BIS(2-CHLOROETHOXY)METHANE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BIS(2-CHLOROETHYL)ETHER	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
BUTYL BENZYL PHTHALATE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
CAPROLACTAM	72.5 U	70.9 U	72.8 U	72.3 U	NA	NA
CARBAZOLE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
CHRYSENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
DIBENZO(A,H)ANTHRACENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
DIBENZOFURAN	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
DIETHYL PHTHALATE	36.2 U	35.4 U	140 J	36.1 U	NA	NA
DIMETHYL PHTHALATE	220 J	450	450	430	NA	NA
DI-N-BUTYL PHTHALATE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
DI-N-OCTYL PHTHALATE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
FLUORANTHENE	36.2 U	74.7 J	36.4 U	36.1 U	NA	NA
FLUORENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
HEXACHLOROBENZENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
HEXACHLOROBUTADIENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
HEXACHLOROCYCLOPENTADIENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
HEXACHLOROETHANE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
INDENO(1,2,3-CD)PYRENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	DRUM-09-SOIL DRUM-09-SOIL 10/24/2013	DRUM-10-SOIL DRUM-10-SOIL 10/24/2013	DRUM-11-SOIL DRUM-11-SOIL 10/24/2013	DRUM-12-SOIL DRUM-12-SOIL 10/24/2013	QDC_DRUM-SOIL QDC_DRUM-SOIL 11/12/2013	STOCKPILE-01 STOCKPILE-01 11/12/2013
ISOPHORONE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
NAPHTHALENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
NITROBENZENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
N-NITROSODIPHENYLAMINE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
PENTACHLOROPHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
PHENANTHRENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
PHENOL	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
PYRENE	36.2 U	35.4 U	36.4 U	36.1 U	NA	NA
PESTICIDES (UG/KG)						
4,4'-DDD	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
4,4'-DDE	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
4,4'-DDT	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ALDRIN	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ALPHA-BHC	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ALPHA-CHLORDANE	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
BETA-BHC	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
DELTA-BHC	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
DIELDRIN	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ENDOSULFAN I	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ENDOSULFAN II	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ENDOSULFAN SULFATE	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ENDRIN	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ENDRIN ALDEHYDE	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
ENDRIN KETONE	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
GAMMA-BHC (LINDANE)	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
GAMMA-CHLORDANE	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
HEPTACHLOR	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
HEPTACHLOR EPOXIDE	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
METHOXYCHLOR	0.359 U	0.35 U	0.36 U	0.357 U	NA	NA
TOXAPHENE	3.6 U	3.5 U	3.6 U	3.6 U	NA	NA
PCBS (UG/KG)						
AROCLOR-1016	3.6 U	3.5 U	3.6 U	3.6 U	3.8 U	3.6 U
AROCLOR-1221	3.6 U	3.5 U	3.6 U	3.6 U	3.8 U	3.6 U
AROCLOR-1232	3.6 U	3.5 U	3.6 U	3.6 U	3.8 U	3.6 U
AROCLOR-1242	3.6 U	3.5 U	3.6 U	3.6 U	3.8 U	3.6 U
AROCLOR-1248	3.6 U	3.5 U	3.6 U	3.6 U	3.8 U	3.6 U
AROCLOR-1254	3.6 U	3.5 U	3.6 U	3.6 U	1.7 U	1.6 U
AROCLOR-1260	17.3 J	38.6	45	26.7	34.7	3.6 U
METALS (MG/KG)						
ALUMINUM	1200 J	1200 J	8900 J	1400 J	NA	NA
ANTIMONY	0.778 J	1.14 UJ	1.15 UJ	1.11 UJ	NA	NA
ARSENIC	5.62	1.8	1.97	2.06	NA	NA
BARIUM	16.1	13.5	16.6	12.5	NA	NA
BERYLLIUM	0.182 J	0.306	0.384	0.311	NA	NA
CADMIUM	0.138 U	0.136 U	0.133 J	0.133 U	NA	NA
CALCIUM	770 J	454 J	570 J	355 J	NA	NA
CHROMIUM	8.55 J	6.37 J	8.5 J	7.81 J	NA	NA
COBALT	5.63	4.93	6.26	5.11	NA	NA
COPPER	9.45	6.94	8.8	8.36	NA	NA
IRON	33400 J	2700 J	14100 J	2700 J	NA	NA
LEAD	34.8 J	31.7 J	36.3 J	31.6 J	NA	NA
MAGNESIUM	1000	1100	1500	1200	NA	NA
MANGANESE	172	104	147	118	NA	NA
MERCURY	0.012	0.008 J	0.013	0.012	NA	NA
NICKEL	9.63	7.47	9.71	8.15	NA	NA

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	DRUM-09-SOIL DRUM-09-SOIL 10/24/2013	DRUM-10-SOIL DRUM-10-SOIL 10/24/2013	DRUM-11-SOIL DRUM-11-SOIL 10/24/2013	DRUM-12-SOIL DRUM-12-SOIL 10/24/2013	QDC_DRUM-SOIL QDC_DRUM-SOIL 11/12/2013	STOCKPILE-01 STOCKPILE-01 11/12/2013
POTASSIUM	469 J	499 J	554 J	517 J	NA	NA
SELENIUM	0.623 J	0.411 J	0.459 U	0.44 J	NA	NA
SILVER	2.13 J	0.864	0.9 J	0.837	NA	NA
SODIUM	33.3 J	26.3 J	28.4 J	26.2 J	NA	NA
THALLIUM	0.919 U	0.909 U	0.918 U	0.89 U	NA	NA
VANADIUM	12.7	10.87	14.4	11.7	NA	NA
ZINC	50.4	45.9	42.3	47.9	NA	NA
MISCELLANEOUS PARAMETERS						
CYANIDE (MG/KG)	0.068 J	0.132 U	0.136 U	0.136 U	NA	NA
PETROLEUM HYDROCARBONS (UG/KG)						
TPH (C09-C40)	106263 J	9488 J	33757 J	20532 J	NA	NA

SOIL Footnotes:

NA = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

> = The chemical was detected.

J = The chemical was detected but the concentration reported is an esti

U = The chemical was not detected.

< = The chemical was not detected.

R = The chemical was rejected.

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION	STOCKPILE-02	TP-01-PIPE	TP-02-PIPE	TP-03-PIPE	TP-04-SOIL	TP-05-SOIL
SAMPLE ID	STOCKPILE-02	TP-01-PIPE	TP-02-PIPE	TP-03-PIPE	TP-04-SOIL	TP-05-SOIL
SAMPLE DATE	11/12/2013	10/25/2013	10/25/2013	10/25/2013	10/25/2013	10/25/2013
VOLATILES (UG/KG)						
1,1,1-TRICHLOROETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,1,2,2-TETRACHLOROETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,1,2-TRICHLOROETHANE	NA	1 U	1 U	0.98 U	0.91 U	0.91 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,1-DICHLOROETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,1-DICHLOROETHENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,2,3-TRICHLOROBENZENE	NA	1 U	1 U	0.98 U	0.91 U	0.91 U
1,2,4-TRICHLOROBENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,2-DIBROMO-3-CHLOROPROPANE	NA	5.2 U	5.1 U	4.9 U	4.6 U	4.6 U
1,2-DIBROMOETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,2-DICHLOROBENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,2-DICHLOROETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,2-DICHLOROPROPANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,3-DICHLOROBENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,4-DICHLOROBENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
1,4-DIOXANE	NA	100 UR	100 UR	97.5 UR	91.5 UR	91.1 UR
2-BUTANONE	NA	7.9 U	7.6 U	7.3 U	6.9 U	6.8 U
2-HEXANONE	NA	2.6 U	2.5 U	2.4 U	2.3 U	2.3 U
4-METHYL-2-PENTANONE	NA	2.6 U	2.5 U	2.4 U	2.3 U	2.3 U
ACETONE	NA	2.6 UJ	2.5 UJ	2.4 UJ	2.3 UJ	2.3 UJ
BENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
BROMOCHLOROMETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
BROMODICHLOROMETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
BROMOFORM	NA	1.6 U	1.5 U	1.5 U	1.4 U	1.4 U
BROMOMETHANE	NA	1 U	1 U	0.98 U	0.91 U	0.91 U
CARBON DISULFIDE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CARBON TETRACHLORIDE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CHLOROBENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CHLORODIBROMOMETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CHLOROETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CHLOROFORM	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CHLOROMETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CIS-1,2-DICHLOROETHENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CIS-1,3-DICHLOROPROPENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
CYCLOHEXANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
DICHLORODIFLUOROMETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
ETHYLBENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
ISOPROPYLBENZENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
M+P-XYLENES	NA	1 U	1 U	0.98 U	0.91 U	0.91 U
METHYL ACETATE	NA	1 U	1 U	0.98 U	0.91 U	0.91 U
METHYL CYCLOHEXANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
METHYL TERT-BUTYL ETHER	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
METHYLENE CHLORIDE	NA	2.3 U	2.4 U	2 U	1.9 U	1.5 U
O-XYLENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
STYRENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
TETRACHLOROETHENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
TOLUENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
TRANS-1,2-DICHLOROETHENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
TRANS-1,3-DICHLOROPROPENE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
TRICHLOROETHENE	NA	0.52 U	0.51 U	0.49 U	1.1 J	0.46 U
TRICHLOROFLUOROMETHANE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
VINYL CHLORIDE	NA	0.52 U	0.51 U	0.49 U	0.46 U	0.46 U
SEMIVOLATILES (UG/KG)						
1,1-BIPHENYL	NA	36.8 U	36.5 U	36 U	36.6 U	36.4 U
1,2,4,5-TETRACHLOROBENZENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	STOCKPILE-02 STOCKPILE-02 11/12/2013	TP-01-PIPE TP-01-PIPE 10/25/2013	TP-02-PIPE TP-02-PIPE 10/25/2013	TP-03-PIPE TP-03-PIPE 10/25/2013	TP-04-SOIL TP-04-SOIL 10/25/2013	TP-05-SOIL TP-05-SOIL 10/25/2013
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2,3,4,6-TETRACHLOROPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2,4,5-TRICHLOROPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2,4,6-TRICHLOROPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2,4-DICHLOROPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2,4-DIMETHYLPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2,4-DINITROPHENOL	NA	290 U	290 U	290 U	290 U	290 U
2,4-DINITROTOLUENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2,6-DINITROTOLUENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2-CHLORONAPHTHALENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2-CHLOROPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2-METHYLNAPHTHALENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2-METHYLPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2-NITROANILINE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
2-NITROPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
3&4-METHYLPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
3,3'-DICHLOROBENZIDINE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
3-NITROANILINE	NA	73.7 U	72.9 U	72 U	73.3 U	72.7 U
4,6-DINITRO-2-METHYLPHENOL	NA	180 U	180 U	180 U	180 U	180 U
4-BROMOPHENYL PHENYL ETHER	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
4-CHLORO-3-METHYLPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
4-CHLOROANILINE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
4-CHLOROPHENYL PHENYL ETHER	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
4-NITROANILINE	NA	73.7 UJ	72.9 UJ	72 UJ	73.3 UJ	72.7 UJ
4-NITROPHENOL	NA	180 U	180 U	180 U	180 U	180 U
ACENAPHTHENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
ACENAPHTHYLENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
ACETOPHENONE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
ANTHRACENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
ATRAZINE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BENZALDEHYDE	NA	36.9 UJ	36.5 UJ	36 UJ	36.6 UJ	36.4 UJ
BENZO(A)ANTHRACENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BENZO(A)PYRENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BENZO(B)FLUORANTHENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BENZO(G,H,I)PERYLENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BENZO(K)FLUORANTHENE	NA	36.9 UJ	36.5 UJ	36 UJ	36.6 UJ	36.4 UJ
BIS(2-CHLOROETHOXY)METHANE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BIS(2-CHLOROETHYL)ETHER	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BIS(2-ETHYLHEXYL)PHTHALATE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
BUTYL BENZYL PHTHALATE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
CAPROLACTAM	NA	73.7 U	72.9 U	72 U	73.3 U	72.7 U
CARBAZOLE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
CHRYSENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
DIBENZO(A,H)ANTHRACENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
DIBENZOFURAN	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
DIETHYL PHTHALATE	NA	36.9 U	36.5 U	2100	620	36.4 U
DIMETHYL PHTHALATE	NA	390	380	320 J	390	440
DI-N-BUTYL PHTHALATE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
DI-N-OCTYL PHTHALATE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
FLUORANTHENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
FLUORENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
HEXACHLOROBENZENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
HEXACHLOROBUTADIENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
HEXACHLOROCYCLOPENTADIENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
HEXACHLOROETHANE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
INDENO(1,2,3-CD)PYRENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION SAMPLE ID SAMPLE DATE	STOCKPILE-02 STOCKPILE-02 11/12/2013	TP-01-PIPE TP-01-PIPE 10/25/2013	TP-02-PIPE TP-02-PIPE 10/25/2013	TP-03-PIPE TP-03-PIPE 10/25/2013	TP-04-SOIL TP-04-SOIL 10/25/2013	TP-05-SOIL TP-05-SOIL 10/25/2013
ISOPHORONE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
NAPHTHALENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
NITROBENZENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
N-NITROSO-DI-N-PROPYLAMINE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
N-NITROSODIPHENYLAMINE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
PENTACHLOROPHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
PHENANTHRENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
PHENOL	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
PYRENE	NA	36.9 U	36.5 U	36 U	36.6 U	36.4 U
PESTICIDES (UG/KG)						
4,4'-DDD	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
4,4'-DDE	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
4,4'-DDT	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ALDRIN	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ALPHA-BHC	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ALPHA-CHLORDANE	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
BETA-BHC	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
DELTA-BHC	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
DIELDRIN	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ENDOSULFAN I	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ENDOSULFAN II	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ENDOSULFAN SULFATE	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ENDRIN	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ENDRIN ALDEHYDE	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
ENDRIN KETONE	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
GAMMA-BHC (LINDANE)	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
GAMMA-CHLORDANE	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
HEPTACHLOR	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
HEPTACHLOR EPOXIDE	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
METHOXYCHLOR	NA	0.364 U	0.361 U	0.356 U	0.363 U	0.36 U
TOXAPHENE	NA	3.7 U	3.6 U	3.6 U	3.7 U	3.6 U
PCBS (UG/KG)						
AROCLOR-1016	3.6 U	3.7 U	3.6 U	3.6 U	3.7 U	3.6 U
AROCLOR-1221	3.6 U	3.7 U	3.6 U	3.6 U	3.7 U	3.6 U
AROCLOR-1232	3.6 U	3.7 U	3.6 U	3.6 U	3.7 U	3.6 U
AROCLOR-1242	3.6 U	3.7 U	3.6 U	3.6 U	3.7 U	3.6 U
AROCLOR-1248	3.6 U	3.7 U	3.6 U	3.6 U	3.7 U	3.6 U
AROCLOR-1254	1.6 U	3.7 U	3.6 U	3.6 U	3.7 U	3.6 U
AROCLOR-1260	3.6 U	12.8 J	26.2	28.5	14.2 J	12 J
METALS (MG/KG)						
ALUMINUM	NA	12000 J	10400 J	11500 J	9000 J	11100 J
ANTIMONY	NA	1.13 UJ	1.17 UJ	1.15 UJ	1.17 UJ	1.16 UJ
ARSENIC	NA	1.74 J	2.32 J	3.7 J	1.68 J	1.87 J
BARIUM	NA	20.5	13.8	20.9	15.6	17
BERYLLIUM	NA	0.532 J	0.377 J	0.502 J	0.397 J	0.438 J
CADMIUM	NA	0.136 U	0.14 U	0.138 U	0.14 U	0.14 U
CALCIUM	NA	362 J	298 J	388 J	317 J	308 J
CHROMIUM	NA	9.13 J	7.42 J	10.8 J	7.01 J	8.36 J
COBALT	NA	10.9	6.65	11.7	6.79	7.95
COPPER	NA	18.8 J	10.9 J	19.9 J	11.3 J	13 J
IRON	NA	28700 J	17400 J	22900 J	14800 J	18400 J
LEAD	NA	24.2	28.1	20.5	15.7	19
MAGNESIUM	NA	3900 J	1600 J	3800 J	1700 J	2100 J
MANGANESE	NA	179 J	137 J	371 J	181 J	158 J
MERCURY	NA	0.005 J	0.013	0.007 J	0.011	0.011
NICKEL	NA	17.7	11.6	20.5	11	13.4

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**STOCKPILE-02**	**TP-01-PIPE**	**TP-02-PIPE**	**TP-03-PIPE**	**TP-04-SOIL**	**TP-05-SOIL**
SAMPLE ID	**STOCKPILE-02**	**TP-01-PIPE**	**TP-02-PIPE**	**TP-03-PIPE**	**TP-04-SOIL**	**TP-05-SOIL**
SAMPLE DATE	**11/12/2013**	**10/25/2013**	**10/25/2013**	**10/25/2013**	**10/25/2013**	**10/25/2013**
POTASSIUM	NA	884	536	884	589	725
SELENIUM	NA	1.51 J	1.1 J	1.47 J	1.12 J	1.25 J
SILVER	NA	1.63 J	0.954 J	1.38 J	0.882 J	1.09 J
SODIUM	NA	48.1 J	41.3 J	42.4 J	49.2 J	45.1 J
THALLIUM	NA	0.908 UJ	0.936 UJ	0.917 UJ	0.933 UJ	0.93 UJ
VANADIUM	NA	17.5	15.2	20.2	14.7	16.4
ZINC	NA	55.7	37.5	47	39	45.2
MISCELLANEOUS PARAMETERS						
CYANIDE (MG/KG)	NA	0.138 U	0.137 U	0.136 U	0.138 U	0.059 J
PETROLEUM HYDROCARBONS (UG/KG)						
TPH (C09-C40)	NA	7426 J	8379 J	6961 J	8758 J	9243 J

SOIL Footnotes:

NA = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

> = The chemical was detected.

J = The chemical was detected but the concentration reported is an esti

U = The chemical was not detected.

< = The chemical was not detected.

R = The chemical was rejected.

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION	TP-06-SOIL	TP-07-SOIL	TP-08-SOIL	TP-09-SOIL
SAMPLE ID	TP-06-SOIL	TP-07-SOIL	TP-08-SOIL	TP-09-SOIL
SAMPLE DATE	10/25/2013	10/25/2013	10/25/2013	10/25/2013
VOLATILES (UG/KG)				
1,1,1-TRICHLOROETHANE	0.52 U	0.42 U	0.6 U	0.65 U
1,1,2,2-TETRACHLOROETHANE	0.52 U	0.42 U	0.6 U	0.65 U
1,1,2-TRICHLOROETHANE	1 U	0.84 U	1.2 U	1.3 U
1,1,2-TRICHLOROTRIFLUOROETHANE	0.52 U	0.42 U	0.6 U	0.65 U
1,1-DICHLOROETHANE	0.52 U	0.42 U	0.6 U	0.65 U
1,1-DICHLOROETHENE	0.52 U	0.42 U	0.6 U	0.65 U
1,2,3-TRICHLOROBENZENE	1 U	0.84 U	1.2 U	1.3 U
1,2,4-TRICHLOROBENZENE	0.52 U	0.42 U	0.6 U	0.65 U
1,2-DIBROMO-3-CHLOROPROPANE	5.2 U	4.2 U	6 U	6.5 U
1,2-DIBROMOETHANE	0.52 U	0.42 U	0.6 U	0.65 U
1,2-DICHLOROBENZENE	0.52 U	0.42 U	0.6 U	0.65 U
1,2-DICHLOROETHANE	0.52 U	0.42 U	0.6 U	0.65 U
1,2-DICHLOROPROPANE	0.52 U	0.42 U	0.6 U	0.65 U
1,3-DICHLOROBENZENE	0.52 U	0.42 U	0.6 U	0.65 U
1,4-DICHLOROBENZENE	0.52 U	0.42 U	0.6 U	0.65 U
1,4-DIOXANE	100 UR	84 UR	120 UR	130 UR
2-BUTANONE	7.8 U	6.3 U	9 U	9.8 U
2-HEXANONE	2.6 U	2.1 U	3 U	3.3 U
4-METHYL-2-PENTANONE	2.6 U	2.1 U	3 U	3.3 U
ACETONE	2.6 UJ	2.1 UJ	3 UJ	3.3 U
BENZENE	0.52 U	0.42 U	0.6 U	0.65 U
BROMOCHLOROMETHANE	0.52 U	0.42 U	0.6 U	0.65 U
BROMODICHLOROMETHANE	0.52 U	0.42 U	0.6 U	0.65 U
BROMOFORM	1.6 U	1.3 U	1.8 U	2 U
BROMOMETHANE	1 U	0.84 U	1.2 U	1.3 U
CARBON DISULFIDE	0.52 U	0.42 U	0.6 U	0.65 U
CARBON TETRACHLORIDE	0.52 U	0.42 U	0.6 U	0.65 U
CHLOROBENZENE	0.52 U	0.42 U	0.6 U	0.65 U
CHLORODIBROMOMETHANE	0.52 U	0.42 U	0.6 U	0.65 U
CHLOROETHANE	0.52 U	0.42 U	0.6 U	0.65 U
CHLOROFORM	0.52 U	0.42 U	0.6 U	0.65 U
CHLOROMETHANE	0.52 U	0.42 U	0.6 U	0.65 U
CIS-1,2-DICHLOROETHENE	0.52 U	0.42 U	0.6 U	0.65 U
CIS-1,3-DICHLOROPROPENE	0.52 U	0.42 U	0.6 U	0.65 U
CYCLOHEXANE	0.52 U	0.42 U	0.6 U	0.65 U
DICHLORODIFLUOROMETHANE	0.52 U	0.42 U	0.6 U	0.65 U
ETHYLBENZENE	0.52 U	0.42 U	0.6 U	0.65 U
ISOPROPYLBENZENE	0.52 U	0.42 U	0.6 U	0.65 U
M+P-XYLENES	1 U	0.84 U	1.2 U	1.3 U
METHYL ACETATE	1 U	0.84 U	1.2 U	1.3 U
METHYL CYCLOHEXANE	0.52 U	0.42 U	0.6 U	0.65 U
METHYL TERT-BUTYL ETHER	0.52 U	0.42 U	0.6 U	0.65 U
METHYLENE CHLORIDE	1.1 U	1 U	1.4 U	0.65 U
O-XYLENE	0.52 U	0.42 U	0.6 U	0.65 U
STYRENE	0.52 U	0.42 U	0.6 U	0.65 U
TETRACHLOROETHENE	0.52 U	0.42 U	0.6 U	0.65 U
TOLUENE	0.52 U	0.42 U	0.6 U	0.65 U
TRANS-1,2-DICHLOROETHENE	0.52 U	0.42 U	0.6 U	0.65 U
TRANS-1,3-DICHLOROPROPENE	0.52 U	0.42 U	0.6 U	0.65 U
TRICHLOROETHENE	0.52 U	0.42 U	0.6 U	0.65 U
TRICHLOROFLUOROMETHANE	0.52 U	0.42 U	0.6 U	0.65 U
VINYL CHLORIDE	0.52 U	0.42 U	0.6 U	0.65 U
SEMIVOLATILES (UG/KG)				
1,1-BIPHENYL	36.1 U	36.2 U	34.8 U	37.4 U
1,2,4,5-TETRACHLOROBENZENE	36.1 U	36.2 U	34.8 U	37.4 U

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION	TP-06-SOIL	TP-07-SOIL	TP-08-SOIL	TP-09-SOIL
SAMPLE ID	TP-06-SOIL	TP-07-SOIL	TP-08-SOIL	TP-09-SOIL
SAMPLE DATE	10/25/2013	10/25/2013	10/25/2013	10/25/2013
2,2'-OXYBIS(1-CHLOROPROPANE)	36.1 U	36.2 U	34.8 U	37.4 U
2,3,4,6-TETRACHLOROPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
2,4,5-TRICHLOROPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
2,4,6-TRICHLOROPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
2,4-DICHLOROPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
2,4-DIMETHYLPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
2,4-DINITROPHENOL	290 U	290 U	280 U	300 U
2,4-DINITROTOLUENE	36.1 U	36.2 U	34.8 U	37.4 U
2,6-DINITROTOLUENE	36.1 U	36.2 U	34.8 U	37.4 U
2-CHLORONAPHTHALENE	36.1 U	36.2 U	34.8 U	37.4 U
2-CHLOROPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
2-METHYLNAPHTHALENE	36.1 U	36.2 U	34.8 U	37.4 U
2-METHYLPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
2-NITROANILINE	36.1 U	36.2 U	34.8 U	37.4 U
2-NITROPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
3&4-METHYLPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
3,3'-DICHLOROBENZIDINE	36.1 U	36.2 U	34.8 U	37.4 U
3-NITROANILINE	72.2 U	72.3 U	69.6 U	74.8 U
4,6-DINITRO-2-METHYLPHENOL	180 U	180 U	170 U	190 U
4-BROMOPHENYL PHENYL ETHER	36.1 U	36.2 U	34.8 U	37.4 U
4-CHLORO-3-METHYLPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
4-CHLOROANILINE	36.1 U	36.2 U	34.8 U	37.4 U
4-CHLOROPHENYL PHENYL ETHER	36.1 U	36.2 U	34.8 U	37.4 U
4-NITROANILINE	72.2 UJ	72.3 UJ	69.6 UJ	74.8 UJ
4-NITROPHENOL	180 U	180 U	170 U	190 U
ACENAPHTHENE	36.1 U	36.2 U	34.8 U	37.4 U
ACENAPHTHYLENE	36.1 U	36.2 U	34.8 U	37.4 U
ACETOPHENONE	36.1 U	36.2 U	34.8 U	37.4 U
ANTHRACENE	36.1 U	36.2 U	34.8 U	37.4 U
ATRAZINE	36.1 U	36.2 U	34.8 U	37.4 U
BENZALDEHYDE	36.1 UJ	36.2 UJ	34.8 UJ	37.4 UJ
BENZO(A)ANTHRACENE	36.1 U	36.2 U	34.8 U	37.4 U
BENZO(A)PYRENE	36.1 U	36.2 U	34.8 U	37.4 U
BENZO(B)FLUORANTHENE	36.1 U	36.2 U	34.8 U	37.4 U
BENZO(G,H,I)PERYLENE	36.1 U	36.2 U	34.8 U	37.4 U
BENZO(K)FLUORANTHENE	36.1 UJ	36.2 UJ	34.8 UJ	37.4 UJ
BIS(2-CHLOROETHOXY)METHANE	36.1 U	36.2 U	34.8 U	37.4 U
BIS(2-CHLOROETHYL)ETHER	36.1 U	36.2 U	34.8 U	37.4 U
BIS(2-ETHYLHEXYL)PHTHALATE	36.1 U	36.2 U	34.8 U	37.4 U
BUTYL BENZYL PHTHALATE	36.1 U	36.2 U	34.8 U	37.4 U
CAPROLACTAM	72.2 U	72.3 U	69.6 U	74.8 U
CARBAZOLE	36.1 U	36.2 U	34.8 U	37.4 U
CHRYSENE	36.1 U	36.2 U	34.8 U	37.4 U
DIBENZO(A,H)ANTHRACENE	36.1 U	36.2 U	34.8 U	37.4 U
DIBENZOFURAN	36.1 U	36.2 U	34.8 U	37.4 U
DIETHYL PHTHALATE	36.1 U	36.2 U	34.8 U	840
DIMETHYL PHTHALATE	400	380	320 J	370
DI-N-BUTYL PHTHALATE	36.1 U	36.2 U	34.8 U	37.4 U
DI-N-OCTYL PHTHALATE	36.1 U	36.2 U	34.8 U	37.4 U
FLUORANTHENE	36.1 U	36.2 U	34.8 U	37.4 U
FLUORENE	36.1 U	36.2 U	34.8 U	37.4 U
HEXACHLOROBENZENE	36.1 U	36.2 U	34.8 U	37.4 U
HEXACHLOROBUTADIENE	36.1 U	36.2 U	34.8 U	37.4 U
HEXACHLOROCYCLOPENTADIENE	36.1 U	36.2 U	34.8 U	37.4 U
HEXACHLOROETHANE	36.1 U	36.2 U	34.8 U	37.4 U
INDENO(1,2,3-CD)PYRENE	36.1 U	36.2 U	34.8 U	37.4 U

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION	TP-06-SOIL	TP-07-SOIL	TP-08-SOIL	TP-09-SOIL
SAMPLE ID	TP-06-SOIL	TP-07-SOIL	TP-08-SOIL	TP-09-SOIL
SAMPLE DATE	10/25/2013	10/25/2013	10/25/2013	10/25/2013
ISOPHORONE	36.1 U	36.2 U	34.8 U	37.4 U
NAPHTHALENE	36.1 U	36.2 U	34.8 U	37.4 U
NITROBENZENE	36.1 U	36.2 U	34.8 U	37.4 U
N-NITROSO-DI-N-PROPYLAMINE	36.1 U	36.2 U	34.8 U	37.4 U
N-NITROSODIPHENYLAMINE	36.1 U	36.2 U	34.8 U	37.4 U
PENTACHLOROPHENOL	36.1 U	36.2 U	34.8 U	37.4 U
PHENANTHRENE	36.1 U	36.2 U	34.8 U	37.4 U
PHENOL	36.1 U	36.2 U	34.8 U	37.4 U
PYRENE	36.1 U	36.2 U	73.7 J	37.4 U
PESTICIDES (UG/KG)				
4,4'-DDD	0.358 U	0.359 U	0.344 U	0.37 U
4,4'-DDE	0.358 U	0.359 U	0.344 U	0.37 U
4,4'-DDT	0.358 U	0.359 U	0.344 U	0.37 U
ALDRIN	0.358 U	0.359 U	0.344 U	0.37 U
ALPHA-BHC	0.358 U	0.359 U	0.344 U	0.37 U
ALPHA-CHLORDANE	0.358 U	0.359 U	0.344 U	0.37 U
BETA-BHC	0.358 U	0.359 U	0.344 U	0.37 U
DELTA-BHC	0.358 U	0.359 U	0.344 U	0.37 U
DIELDRIN	0.358 U	0.359 U	0.344 U	0.37 U
ENDOSULFAN I	0.358 U	0.359 U	0.344 U	0.37 U
ENDOSULFAN II	0.358 U	0.359 U	0.344 U	0.37 U
ENDOSULFAN SULFATE	0.358 U	0.359 U	0.344 U	0.37 U
ENDRIN	0.358 U	0.359 U	0.344 U	0.37 U
ENDRIN ALDEHYDE	0.358 U	0.359 U	0.344 U	0.37 U
ENDRIN KETONE	0.358 U	0.359 U	0.344 U	0.37 U
GAMMA-BHC (LINDANE)	0.358 U	0.359 U	0.344 U	0.37 U
GAMMA-CHLORDANE	0.358 U	0.359 U	0.344 U	0.37 U
HEPTACHLOR	0.358 U	0.359 U	0.344 U	0.37 U
HEPTACHLOR EPOXIDE	0.358 U	0.359 U	0.344 U	0.37 U
METHOXYCHLOR	0.358 U	0.359 U	0.344 U	0.37 U
TOXAPHENE	3.6 U	3.6 U	3.5 U	3.7 U
PCBS (UG/KG)				
AROCLOR-1016	3.6 U	3.6 U	3.5 U	3.7 U
AROCLOR-1221	3.6 U	3.6 U	3.5 U	3.7 U
AROCLOR-1232	3.6 U	3.6 U	3.5 U	3.7 U
AROCLOR-1242	3.6 U	3.6 U	3.5 U	3.7 U
AROCLOR-1248	3.6 U	3.6 U	3.5 U	3.7 U
AROCLOR-1254	3.6 U	3.6 U	3.5 U	3.7 U
AROCLOR-1260	15.2 J	44.6	61.1	44.9
METALS (MG/KG)				
ALUMINUM	8300 J	7200 J	7800 J	8900 J
ANTIMONY	1.14 UJ	1.12 UJ	1.12 UJ	1.18 UJ
ARSENIC	1.63 J	1.83 J	1.94 J	2.32 J
BARIUM	14.1	15.3	16	19.4
BERYLLIUM	0.36 J	0.33 J	0.324 J	0.362 J
CADMIUM	0.137 U	0.135 U	0.134 U	0.142 U
CALCIUM	348 J	522 J	496 J	684 J
CHROMIUM	6.17 J	5.98 J	6.59 J	7.62 J
COBALT	5.73	4.61	5.64	6.25
COPPER	10.3 J	10.5 J	14.4 J	13.1 J
IRON	14400 J	12500 J	13600 J	15800 J
LEAD	15.3	33.5	41.8	50
MAGNESIUM	1400 J	1100 J	1300 J	1600 J
MANGANESE	124 J	107 J	134 J	159 J
MERCURY	0.011	0.012	0.028	0.014
NICKEL	9.63	7.71	8.91	10.9

TABLE C-4
ANALYTICAL RESULTS FOR SOIL - DRUM REMOVAL AREA
CONSTRUCTION EQUIPMENT DEPARTMENT AREA
FORMER NCBC DAVISVILLE, NORTH KINGSTOWN, RHODE ISLAND

LOCATION	**TP-06-SOIL**	**TP-07-SOIL**	**TP-08-SOIL**	**TP-09-SOIL**
SAMPLE ID	**TP-06-SOIL**	**TP-07-SOIL**	**TP-08-SOIL**	**TP-09-SOIL**
SAMPLE DATE	**10/25/2013**	**10/25/2013**	**10/25/2013**	**10/25/2013**
POTASSIUM	561	477	494	593
SELENIUM	0.902 J	0.976 J	1.02 J	1.08 J
SILVER	0.813 J	0.724 J	0.819 J	0.935 J
SODIUM	35 J	46.6 J	30.4 J	47.3 J
THALLIUM	0.912 UJ	0.899 UJ	0.893 UJ	0.944 UJ
VANADIUM	12.8	11.2	12.8	15
ZINC	37.6	41.4	56.5	46.1
MISCELLANEOUS PARAMETERS				
CYANIDE (MG/KG)	0.136 U	0.136 U	0.096 J	0.195 J
PETROLEUM HYDROCARBONS (UG/KG)				
TPH (C09-C40)	9200 J	9987 J	29346 J	9970 J

SOIL Footnotes:

NA = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

> = The chemical was detected.

J = The chemical was detected but the concentration reported is an esti

U = The chemical was not detected.

< = The chemical was not detected.

R = The chemical was rejected.

ATTACHMENT D

DATA VALIDATION MEMORANDA

TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **S. ANDERSON** **DATE:** **DECEMBER 4, 2014**

FROM: **MICHELLE L. ALLEN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC/SVOC/NAPHTHALENE/PEST/PCB/DRO/GRO**
FORMER NAVAL CONSTRUCTION BATTALION CENTER (NCBC), DAVISVILLE
CTO WE01
SAMPLE DELIVERY GROUP (SDG) N1822

SAMPLES: 30/Aqueous/VOC/GRO

FD01-093014	FD02-101014	MW01-10S-NWG-100214
MW01-12S-NWG-100214	MW01-14S-NWG-100914	MW02-05S-NWG-100214
MW02-08Sa-NWG-100114	MW02-09S-NWG-100814	MW02-10S-NWG-101014
MW02-11S-NWG-100814	MW02-4Sa-NWG-100614	MW03-02S-NWG-092914
MW03-04S-NWG-093014	MW03-05S-NWG-100114	MW03-15I-NWG-092914
MW03-15S-NWG-100114	MW03-16S-NWG-100614	MW03-17I-NWG-100214
MW03-17S-NWG-093014	RB01-100114	RB02-100814
TB01-092914	TB02-093014	TB03-10014
TB04-100214	TB05-100314	TB06-100614
TB07-100714	TB08-100914	TB09-101014

8/Aqueous/SVOC/PEST/PCB

FD01-093014	MW03-02S-NWG-092914	MW03-15I-NWG-092914
MW03-15S-NWG-100114	MW03-16S-NWG-100614	MW03-17I-NWG-100214
MW03-17S-NWG-093014	RB01-100114	

17/Aqueous/Naphthalene

FD02-101014	MW01-10S-NWG-100214	MW01-12S-NWG-100214
MW01-14S-NWG-100914	MW02-03S-NWG-100314	MW02-05S-NWG-100214
MW02-08Sa-NWG-100114	MW02-09S-NWG-100814	MW02-10S-NWG-101014
MW02-11S-NWG-100814	MW02-4Sa-NWG-100614	MW03-02S-NWG-092914
MW03-04S-NWG-093014	MW03-05S-NWG-100114	MW03-15I-NWG-092914
RB01-100114	RB02-100814	

22/Aqueous/DRO (C9-C40)

FD01-093014	FD02-101014	MW01-10S-NWG-100214
MW01-12S-NWG-100214	MW01-14S-NWG-100914	MW02-03S-NWG-100314
MW02-05S-NWG-100214	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814
MW02-10S-NWG-101014	MW02-11S-NWG-100814	MW02-4Sa-NWG-100614
MW03-02S-NWG-092914	MW03-04S-NWG-093014	MW03-05S-NWG-100114
MW03-15I-NWG-092914	MW03-15S-NWG-100114	MW03-16S-NWG-100614
MW03-17I-NWG-100214	MW03-17S-NWG-093014	RB01-100114
RB02-100814		

Overview

The sample set for NCBC Davisville, CTO WE01, SDG N1822 consisted of twenty (20) aqueous environmental samples, two (2) rinsate blanks, and nine (9) trip blanks. Thirty (30) aqueous samples were analyzed for Volatile Organic Compounds (VOC) and Gasoline Range Organics (GRO). Seventeen (17) aqueous samples were analyzed for naphthalene. Eight (8) aqueous samples were analyzed for Semi-Volatile Organic Compounds (SVOC), pesticides (PEST), and Polychlorinated Biphenyls (PCB). Twenty-two (22) aqueous samples were analyzed for Diesel Range Organics (DRO) (C9-C40). Two field duplicate pairs were included in this Sample Delivery Group (SDG): FD01-093014/MW03-17S-NWG-093014 and FD02-101014/MW02-10S-NWG-101014.

The samples were collected by Tetra Tech, Inc. on September 29 - October 3, 7-10, 2014 and analyzed by Spectrum Analytical Inc. All analyses were conducted in accordance with SW846 Methods 8260C, 8270D, 8270D SIM, 8081A, 8082A, and 8015D analytical and reporting protocols. The data was evaluated based on the following parameters:

- Data Completeness
* • Holding Times/Sample Preservation
* • GC/MS Instrument Tuning and System Performance
- Initial and Continuing Calibration Results
* • Laboratory Method and Trip Blank Results
- Surrogate Spike Recoveries
* • Internal Standard Areas
- Laboratory Control Sample/Laboratory Control Sample Duplicate Results
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. An EPA Region 1 tier II validation was performed on the data in this SDG. The text of this report has been formulated to address only those areas affecting data quality.

DATA COMPLETENESS

Sample MW02-03S-NWG-100314 was not analyzed for VOC and GRO as requested on the sample Chain of Custody (COC). The laboratory was contacted and confirmed the oversight. The monitoring well was resampled by Tetra Tech Inc. and the results are reported in SDG N2224 of this project.

The following compounds were missing from the data package according to the site specific Sampling and Analysis Plan:

VOC
Bromochloromethane
1,2,3-Trichlorobenzene

SVOC
1,3-Dinitrobenzene
1,4-Dioxane
Di-n-butyl phthalate
Di-n-octyl phthalate
N-Nitroso-di-n-propylamine
N-Nitrosodiphenylamine

The laboratory revised the data package to include all the compounds with the exception of 1,3-dinitrobenzene. The GC/MS was not calibrated for this compound. The laboratory performed a Tentatively Identified Compound (TIC) search for 1,3-dinitrobenzene. This compound was not detected as a TIC in the SVOC samples.

Sample MW03-02S-NWG-092914 was analyzed for SVOC, PEST, and PCB by the laboratory; however, the sampler amended the sample COC to exclude these analyses for this sample. The sample results for these analyses were included in the data validation and in the database as per the project manager's request.

Samples MW03-15I-NWG-092914 and RB01-100114 were analyzed for naphthalene in the SVOC 8270D analysis and the 8270D SIM analysis. The 8270D SIM analyses were not requested for these samples on the COC form. Results from both analyses were reported in the database.

INITIAL AND CONTINUING CALIBRATION RESULTS

The VOC continuing calibration performed on 10/08/14 @ 21:28 had Percent Differences (%Ds) for bromomethane, trichlorofluoromethane, and 1,2-dichloroethane above the 20% quality control limit. Samples FD01-093014, MW02-05S-NWG-100214, MW02-08SA-NWG-100114, MW03-02S-NWG-, 92914, MW03-04S-NWG-093014, MW03-05S-NWG-100114, MW03-15I-NWG-092914, MW03-15S-NWG-100114, MW03-17I-NWG-100214, MW03-17S-NWG-093014, RB01-100114, TB01-092914, TB02-093014, TB03-10014, and TB04-100214 were affected. The non-detected results reported for these compounds in the affected samples were qualified as estimated, (UJ).

The VOC continuing calibration performed on 10/09/14 @ 09:30 had %Ds for dichlorodifluoromethane, trichlorofluoromethane, 1,2-dichloroethane, and 1,1,2-trichloro-1,2,2-trifluoroethane above the 20% quality control limit. The non-detected results reported for these compounds in the affected samples, MW01-10S-NWG-100214 and MW01-12S-NWG-100214, were qualified as estimated, (UJ).

The VOC continuing calibration performed on 10/14/14 @ 08:42 had %Ds for trichlorofluoromethane, acetone, and 1,2-dichloroethane above the 20% quality control limit. The non-detected results reported for these compounds in the affected trip blanks, TB05-100314 and TB06-100614, were qualified as estimated, (UJ).

The VOC continuing calibration performed on 10/17/14 @ 10:11 had %Ds for dichlorodifluoromethane, bromomethane, trichlorofluoromethane, and acetone above the 20% quality control limit. Samples FD02-101014, MW01-14S-NWG-100914, MW02-09S-NWG-100814, MW02-10S-NWG-101014, MW02-11S-NWG-100814, MW02-4SA-NWG-100614, MW03-16S-NWG-100614, RB02-100814, TB07-100714, TB08-100914, and TB09-101014 were affected. The non-detected results reported for these compounds in the affected samples were qualified as estimated, (UJ).

The SVOC initial calibration performed on 09/26/14 had a Percent Relative Standard Deviations (%RSDs) for hexachlorocyclopentadiene and benzaldehyde above the 20% quality control limit. All SVOC samples were affected. The non-detected results reported for these compounds in the affected samples were qualified as estimated, (UJ).

The SVOC continuing calibration performed on 10/24/14 @ 13:15 had a %D for hexachlorocyclopentadiene above the 20% quality control limit. All samples were affected with the exception of samples MW03-17I-NWG-100214 and MW03-17S-NWG-093014. The non-detected results reported for this compound in the affected samples were qualified as estimated, (UJ).

The SVOC continuing calibration performed on 10/27/14 @ 15:27 had %Ds for bis(2-chloroethyl)ether, hexachlorocyclopentadiene, 4-nitrophenol, and pentachlorophenol above the 20% quality control limit. The

non-detected results reported for these compounds in the affected samples, NWG-100214 and MW03-17S-NWG-093014, were qualified as estimated, (UJ).

LABORATORY METHOD AND TRIP BLANK RESULTS

The following compounds were detected in the laboratory method blanks at the following maximum concentrations:

Compound	Maximum Concentration (µg/L)	Action Level (µg/L)
Di-n-butylphthalate (1)	7.0	70
Di-n-butylphthalate (2)	3.3	33

(1) Maximum concentration detected in the SVOC laboratory method blank, MB-79360, from preparation batch #79360 affecting the all samples except MW03-16S-NWG-100614.

(2) Maximum concentration detected in the SVOC laboratory method blank, MB-79478, from preparation batch #79478 affecting sample MW03-16S-NWG-100614.

An action level of 5X the maximum contaminant concentration was established to evaluate blank contamination. Percent moisture, dilution factor, and sample aliquot were taken into consideration during the application of the action level. The detected results reported for iron below the established action level in the affected samples were qualified as non-detected, (U). The associated rinsate blank in the SVOC fraction was not qualified for laboratory method blank contamination.

NOTES

The PEST Continuing Calibration Verifications (CCVs) performed on 10/20/14 @ 15:53 and had a %D on GC column CLPPest II greater than the 20% quality control limit for delta-BHC. No action was taken because this compound was not detected in the associated samples.

The common laboratory contaminant, methylene chloride, was detected in the rinsate blanks but not in the environmental samples.

The SVOC surrogate spike compound, 2-fluorobiphenyl, had %Rs above the upper quality control limit in samples, MW03-15I-NWG-092914, MW03-15S-NWG-100114, and MW03-16S-NWG-100614. No action was taken because only one base/neutral surrogate was noncompliant.

The %R for the PCB surrogate spike compound, decachlorobiphenyl, was below the lower quality control limit in sample RB01-100114. No action was necessary because only one surrogate on one GC column was noncompliant.

The Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) and Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses associated with preparation batch # 79443 in the VOC fraction had Percent Recoveries (%Rs) for 1,2-dichloroethane which exceeded the upper quality control limit. No action was taken in the associated samples because this compound was not detected.

The LCS/LCSD analyses associated with preparation batch #79488 in the VOC fraction had a %R for 1,2-dichloroethane which exceeded the upper quality control limit. No action was necessary because this compound was not detected in the associated trip blanks.

The LCS/LCSD analyses associated with preparation batch #79554 in the VOC fraction had a %R for acetone which exceeded the upper quality control limit. No action was necessary because this compound was not detected in the associated samples.

The Relative Percent Difference (RPD) for 3,3'-dichlorobenzidine exceeded the 30% quality control limit in the SVOC LCS/LCSD analysis associated with preparation batch #79478. No action was taken because the %Rs for this compound were within the quality control limits.

The MSD %R for pentachlorophenol was slightly above the upper quality control limit in the SVOC fraction. No action was taken because the MS and associated LCS %Rs were acceptable and this compound was not detected in the parent sample.

Detected results reported below the Limit of Quantitation (LOQ) but above the Detection Limit (DL) were qualified as estimated, (J). Non-detected results are reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: One sample was not analyzed for VOC and GRO as indicated on the sample COC. Several compounds were missing from the original data package. Some samples received analyses that were not requested on the COC. Initial calibration %RSDs exceeded 20% in the SVOC fraction. Continuing calibration %Ds were above 20% in the VOC and SVOC fractions. A CCV %D in the PEST fraction exceeded 20%.. Surrogate spike noncompliances were noted in the SVOC and PEST fractions. LCS/LCSD noncompliances were noted in the VOC and SVOC.

Other Factors Affecting Data Quality: Detected results below the LOQ were estimated.

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements Superfund Guidance/Procedures (April 2013), National Functional Guidelines for Organic Data Validation (January 2008), National Functional Guidelines for Inorganic Data Validation (January 2010), and the Department of Defense (DoD) document entitled, "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013). The text of this report has been formulated to address only those areas affecting data quality.

Tetra Tech, Inc.
Michelle L. Allen
Environmental Chemist

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	FD01-093014			MW03-02S-NWG-092914			MW03-15I-NWG-092914			MW03-15S-NWG-100114		
SDG: N1822	LAB_ID	N1822-09B			N1822-02B			N1822-04B			N1822-18C		
FRACTION: OS	SAMP_DATE	9/30/2014			9/29/2014			9/29/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		2	U		2	U		2	U		2	U	
1,4-DIOXANE		10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		2	U		2	U		2	U		2	U	
2,4,5-TRICHLOROPHENOL		2	U		2	U		2	U		2	U	
2,4,6-TRICHLOROPHENOL		2	U		2	U		2	U		2	U	
2,4-DICHLOROPHENOL		2	U		2	U		2	U		2	U	
2,4-DIMETHYLPHENOL		2	U		2	U		2	U		2	U	
2,4-DINITROPHENOL		10	U		10	U		10	U		10	U	
2,4-DINITROTOLUENE		2	U		2	U		2	U		2	U	
2,6-DINITROTOLUENE		2	U		2	U		2	U		2	U	
2-CHLORONAPHTHALENE		2	U		2	U		2	U		2	U	
2-CHLOROPHENOL		2	U		2	U		2	U		2	U	
2-METHYLNAPHTHALENE		2	U		2	U		2	U		2	U	
2-METHYLPHENOL		2	U		2	U		2	U		2	U	
2-NITROANILINE		2	U		2	U		2	U		2	U	
2-NITROPHENOL		2	U		2	U		2	U		2	U	
3,3'-DICHLOROBENZIDINE		10	U		10	U		10	U		10	U	
3-NITROANILINE		2	U		2	U		2	U		2	U	
4,6-DINITRO-2-METHYLPHENOL		2	U		2	U		2	U		2	U	
4-BROMOPHENYL PHENYL ETHER		2	U		2	U		2	U		2	U	
4-CHLORO-3-METHYLPHENOL		2	U		2	U		2	U		2	U	
4-CHLOROANILINE		2	U		2	U		2	U		2	U	
4-CHLOROPHENYL PHENYL ETHER		2	U		2	U		2	U		2	U	
4-METHYLPHENOL		2	U		2	U		2	U		2	U	
4-NITROANILINE		2	U		2	U		2	U		2	U	
4-NITROPHENOL		2	U		2	U		2	U		2	U	
ACENAPHTHENE		2	U		2	U		2	U		2	U	
ACENAPHTHYLENE		2	U		2	U		2	U		2	U	
ACETOPHENONE		2	U		2	U		2	U		2	U	
ANTHRACENE		2	U		2	U		2	U		2	U	
ATRAZINE		2	U		2	U		2	U		2	U	
BENZALDEHYDE		2	UJ	C	2	UJ	C	2	UJ	C	2	UJ	C
BENZO(A)ANTHRACENE		2	U		2	U		2	U		2	U	
BENZO(A)PYRENE		2	U		2	U		2	U		2	U	
BENZO(B)FLUORANTHENE		2	U		2	U		2	U		2	U	
BENZO(G,H,I)PERYLENE		2	U		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014			RB01-100114		
SDG: N1822	LAB_ID	N1822-37B			N1822-25C			N1822-11B			N1822-14C		
FRACTION: OS	SAMP_DATE	10/6/2014			10/2/2014			9/30/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL	2	U		2	U		2	U		2	U	
1,4-DIOXANE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	2	U		2	U		2	U		2	U	
2,4,5-TRICHLOROPHENOL	2	U		2	U		2	U		2	U	
2,4,6-TRICHLOROPHENOL	2	U		2	U		2	U		2	U	
2,4-DICHLOROPHENOL	2	U		2	U		2	U		2	U	
2,4-DIMETHYLPHENOL	2	U		2	U		2	U		2	U	
2,4-DINITROPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROTOLUENE	2	U		2	U		2	U		2	U	
2,6-DINITROTOLUENE	2	U		2	U		2	U		2	U	
2-CHLORONAPHTHALENE	2	U		2	U		2	U		2	U	
2-CHLOROPHENOL	2	U		2	U		2	U		2	U	
2-METHYLNAPHTHALENE	2	U		2	U		2	U		2	U	
2-METHYLPHENOL	2	U		2	U		2	U		2	U	
2-NITROANILINE	2	U		2	U		2	U		2	U	
2-NITROPHENOL	2	U		2	U		2	U		2	U	
3,3'-DICHLOROBENZIDINE	10	U		10	U		10	U		10	U	
3-NITROANILINE	2	U		2	U		2	U		2	U	
4,6-DINITRO-2-METHYLPHENOL	2	U		2	U		2	U		2	U	
4-BROMOPHENYL PHENYL ETHER	2	U		2	U		2	U		2	U	
4-CHLORO-3-METHYLPHENOL	2	U		2	U		2	U		2	U	
4-CHLOROANILINE	2	U		2	U		2	U		2	U	
4-CHLOROPHENYL PHENYL ETHER	2	U		2	U		2	U		2	U	
4-METHYLPHENOL	2	U		2	U		2	U		2	U	
4-NITROANILINE	2	U		2	U		2	U		2	U	
4-NITROPHENOL	2	U		2	UJ	C	2	UJ	C	2	U	
ACENAPHTHENE	2	U		2	U		2	U		2	U	
ACENAPHTHYLENE	2	U		2	U		2	U		2	U	
ACETOPHENONE	2	U		2	U		2	U		2	U	
ANTHRACENE	2	U		2	U		2	U		2	U	
ATRAZINE	2	U		2	U		2	U		2	U	
BENZALDEHYDE	2	UJ	C	2	UJ	C	2	UJ	C	2	UJ	C
BENZO(A)ANTHRACENE	2	U		2	U		2	U		2	U	
BENZO(A)PYRENE	2	U		2	U		2	U		2	U	
BENZO(B)FLUORANTHENE	2	U		2	U		2	U		2	U	
BENZO(G,H,I)PERYLENE	2	U		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014			MW03-02S-NWG-092914			MW03-15I-NWG-092914			MW03-15S-NWG-100114		
SDG: N1822	LAB_ID	N1822-09B			N1822-02B			N1822-04B			N1822-18C		
FRACTION: OS	SAMP_DATE	9/30/2014			9/29/2014			9/29/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		2	U		2	U		2	U		2	U	
BIS(2-CHLOROETHOXY)METHANE		2	U		2	U		2	U		2	U	
BIS(2-CHLOROETHYL)ETHER		2	U		2	U		2	U		2	U	
BIS(2-ETHYLHEXYL)PHTHALATE		2	U		2	U		2	U		2	U	
BUTYL BENZYL PHTHALATE		2	U		2	U		2	U		2	U	
CAPROLACTAM		10	U		10	U		10	U		10	U	
CARBAZOLE		2	U		2	U		2	U		2	U	
CHRYSENE		2	U		2	U		2	U		2	U	
DIBENZO(A,H)ANTHRACENE		2	U		2	U		2	U		2	U	
DIBENZOFURAN		2	U		2	U		2	U		2	U	
DIETHYL PHTHALATE		2	U		2	U		2	U		2	U	
DIMETHYL PHTHALATE		2	U		2	U		2	U		2	U	
DI-N-BUTYL PHTHALATE		2.8	U	A	9.3	U	A	7.2	U	A	2.8	U	A
DI-N-OCTYL PHTHALATE		2	U		2	U		2	U		2	U	
FLUORANTHENE		2	U		2	U		2	U		2	U	
FLUORENE		2	U		2	U		2	U		2	U	
HEXACHLOROBENZENE		2	U		2	U		2	U		2	U	
HEXACHLOROBUTADIENE		2	U		2	U		2	U		2	U	
HEXACHLOROCYCLOPENTADIENE		10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
HEXACHLOROETHANE		2	U		2	U		2	U		2	U	
INDENO(1,2,3-CD)PYRENE		2	U		2	U		2	U		2	U	
ISOPHORONE		2	U		2	U		2	U		2	U	
NAPHTHALENE		2	U		2	U		2	U		2	U	
NITROBENZENE		2	U		2	U		2	U		2	U	
N-NITROSO-DI-N-PROPYLAMINE		2	U		2	U		2	U		2	U	
N-NITROSODIPHENYLAMINE		2	U		2	U		2	U		2	U	
PENTACHLOROPHENOL		10	U		10	U		10	U		10	U	
PHENANTHRENE		2	U		2	U		2	U		2	U	
PHENOL		2	U		2	U		2	U		2	U	
PYRENE		2	U		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014			RB01-100114		
SDG: N1822	LAB_ID	N1822-37B			N1822-25C			N1822-11B			N1822-14C		
FRACTION: OS	SAMP_DATE	10/6/2014			10/2/2014			9/30/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		2	U		2	U		2	U		2	U	
BIS(2-CHLOROETHOXY)METHANE		2	U		2	U		2	U		2	U	
BIS(2-CHLOROETHYL)ETHER		2	U		2	UJ	C	2	UJ	C	2	U	
BIS(2-ETHYLHEXYL)PHTHALATE		2	U		2	U		2	U		2	U	
BUTYL BENZYL PHTHALATE		2	U		2	U		2	U		2	U	
CAPROLACTAM		10	U		10	U		10	U		10	U	
CARBAZOLE		2	U		2	U		2	U		2	U	
CHRYSENE		2	U		2	U		2	U		2	U	
DIBENZO(A,H)ANTHRACENE		2	U		2	U		2	U		2	U	
DIBENZOFURAN		2	U		2	U		2	U		2	U	
DIETHYL PHTHALATE		2	U		2	U		2	U		2	U	
DIMETHYL PHTHALATE		2	U		2	U		2	U		2	U	
DI-N-BUTYL PHTHALATE		4.8	U	A	7.5	U	A	7	U	A	2.3	J	P
DI-N-OCTYL PHTHALATE		2	U		2	U		2	U		2	U	
FLUORANTHENE		2	U		2	U		2	U		2	U	
FLUORENE		2	U		2	U		2	U		2	U	
HEXACHLOROBENZENE		2	U		2	U		2	U		2	U	
HEXACHLOROBUTADIENE		2	U		2	U		2	U		2	U	
HEXACHLOROCYCLOPENTADIENE		10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
HEXACHLOROETHANE		2	U		2	U		2	U		2	U	
INDENO(1,2,3-CD)PYRENE		2	U		2	U		2	U		2	U	
ISOPHORONE		2	U		2	U		2	U		2	U	
NAPHTHALENE		2	U		2	U		2	U		2	U	
NITROBENZENE		2	U		2	U		2	U		2	U	
N-NITROSO-DI-N-PROPYLAMINE		2	U		2	U		2	U		2	U	
N-NITROSODIPHENYLAMINE		2	U		2	U		2	U		2	U	
PENTACHLOROPHENOL		10	U		10	UJ	C	10	UJ	C	10	U	
PHENANTHRENE		2	U		2	U		2	U		2	U	
PHENOL		2	U		2	U		2	U		2	U	
PYRENE		2	U		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014			FD02-101014			MW01-10S-NWG-100214			MW01-12S-NWG-100214		
SDG: N1822	LAB_ID	N1822-09A			N1822-52B			N1822-27B			N1822-29B		
FRACTION: OV	SAMP_DATE	9/30/2014			10/10/2014			10/2/2014			10/2/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014			MW02-10S-NWG-101014								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		1	U		1	U		1	UJ	C	1	UJ	C
1,1-DICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	UJ	C	0.5	U		0.5	UJ	C	0.5	UJ	C
1,2-DICHLOROPROPANE		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
2-BUTANONE		2.5	U		2.5	U		2.5	U		2.5	U	
2-HEXANONE		2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE		1	U		1	U		1	U		1	U	
ACETONE		2.5	U		2.5	UJ	C	2.5	U		2.5	U	
BENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM		1	U		1	U		1	U		1	U	
BROMOMETHANE		1	UJ	C	1	UJ	C	1	U		1	U	
CARBON DISULFIDE		0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U		1	U	
CHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE		1	U		1	U		1	U		1	U	
CHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROFORM		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		1.3			0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
CYCLOHEXANE		1	U		10			1	U		1	U	
DICHLORODIFLUOROMETHANE		1	U		1	UJ	C	1	UJ	C	1	UJ	C
ETHYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW01-14S-NWG-100914			MW02-04Sa-NWG-100614			MW02-05S-NWG-100214			MW02-08Sa-NWG-100114		
SDG: N1822	LAB_ID	N1822-47B			N1822-35A			N1822-23B			N1822-20B		
FRACTION: OV	SAMP_DATE	10/9/2014			10/6/2014			10/2/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U				
1,2,4-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	U		0.5	U		0.5	UJ	C	0.5	UJ	C
1,2-DICHLOROPROPANE		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
2-BUTANONE		2.5	U		2.5	U		2.5	U		2.5	U	
2-HEXANONE		2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE		1	U		1	U		1	U		1	U	
ACETONE		2.5	UJ	C	2.5	UJ	C	2.5	U		2.5	U	
BENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U		0.5	U				
BROMODICHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM		1	U		1	U		1	U		1	U	
BROMOMETHANE		1	U	C	1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE		0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U		1	U	
CHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE		1	U		1	U		1	U		1	U	
CHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROFORM		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
CYCLOHEXANE		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE		1	UJ	C	1	UJ	C	1	U		1	U	
ETHYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW02-08SA-NWG-100114			MW02-09S-NWG-100814			MW02-10S-NWG-101014			MW02-11S-NWG-100814		
SDG: N1822	LAB_ID	N1822-20B			N1822-42B			N1822-50B			N1822-44B		
FRACTION: OV	SAMP_DATE	10/1/2014			10/8/2014			10/10/2014			10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE				1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE				1	U		1	U		1	U	
1,1-DICHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE				0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE				1	U		1	U		1	U	
1,2-DIBROMOETHANE				0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,2-DICHLOROPROPANE				1	U		1	U		1	U	
1,3-DICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
2-BUTANONE				2.5	U		2.5	U		2.5	U	
2-HEXANONE				2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE				1	U		1	U		1	U	
ACETONE				2.5	UJ	C	2.5	UJ	C	2.5	UJ	C
BENZENE				0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE				0.5	U		0.5	U		0.5	U	
BROMOFORM				1	U		1	U		1	U	
BROMOMETHANE				1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE				0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE				1	U		1	U		1	U	
CHLOROBENZENE				0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE				1	U		1	U		1	U	
CHLOROETHANE				0.5	U		0.5	U		0.5	U	
CHLOROFORM				0.5	U		0.5	U		0.5	U	
CHLOROMETHANE				0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE				0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE				0.5	U		0.5	U		0.5	U	
CYCLOHEXANE				1	U		10			1	U	
DICHLORODIFLUOROMETHANE				1	UJ	C	1	UJ	C	1	UJ	C
ETHYLBENZENE				0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW03-02S-NWG-092914			MW03-04S-NWG-093014			MW03-05S-NWG-100114			MW03-15I-NWG-092914		
SDG: N1822	LAB_ID	N1822-02A			N1822-07A			N1822-16B			N1822-04A		
FRACTION: OV	SAMP_DATE	9/29/2014			9/30/2014			10/1/2014			9/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
2-BUTANONE	2.5	U		2.5	U		2.5	U		2.5	U	
2-HEXANONE	2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE	1	U		1	U		1	U		1	U	
ACETONE	2.5	U		2.5	U		2.5	U		2.5	U	
BENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE	0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROFORM	0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U		0.5	U	
CYCLOHEXANE	1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW03-15S-NWG-100114			MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014		
SDG: N1822	LAB_ID	N1822-18B			N1822-37A			N1822-25B			N1822-11A		
FRACTION: OV	SAMP_DATE	10/1/2014			10/6/2014			10/2/2014			9/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	UJ	C	0.5	U		0.5	UJ	C	0.5	UJ	C
1,2-DICHLOROPROPANE		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
2-BUTANONE		2.5	U		2.5	U		2.5	U		2.5	U	
2-HEXANONE		2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE		1	U		1	U		1	U		1	U	
ACETONE		2.5	U		2.5	UJ	C	2.5	U		2.5	U	
BENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM		1	U		1	U		1	U		1	U	
BROMOMETHANE		1	UJ	C	1	U	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE		0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U		1	U	
CHLOROBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE		1	U		1	U		1	U		1	U	
CHLOROETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROFORM		0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE		0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U		1.3		
CIS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
CYCLOHEXANE		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE		1	U		1	UJ	C	1	U		1	U	
ETHYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	RB01-100114			RB02-100814			TB01-092914			TB02-093014		
SDG: N1822	LAB_ID	N1822-14B			N1822-40B			N1822-01A			N1822-06A		
FRACTION: OV	SAMP_DATE	10/1/2014			10/8/2014			9/29/2014			9/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE	0.5	UJ	C	0.5	U		0.5	UJ	C	0.5	UJ	C
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
2-BUTANONE	2.5	U		2.5	U		2.5	U		2.5	U	
2-HEXANONE	2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE	1	U		1	U		1	U		1	U	
ACETONE	2.5	U		2.5	UJ	C	2.5	U		2.5	U	
BENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE	0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROFORM	0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U		0.5	U	
CYCLOHEXANE	1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	1	U		1	UJ	C	1	U		1	U	
ETHYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	TB03-10014			TB04-100214			TB05-100314			TB06-100614		
SDG: N1822	LAB_ID	N1822-13A			N1822-22A			N1822-31A			N1822-34A		
FRACTION: OV	SAMP_DATE	10/1/2014			10/2/2014			10/3/2014			10/6/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
2-BUTANONE	2.5	U		2.5	U		2.5	U		2.5	U	
2-HEXANONE	2.5	U		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE	1	U		1	U		1	U		1	U	
ACETONE	2.5	U		2.5	U		2.5	UJ	C	2.5	UJ	C
BENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	UJ	C	1	UJ	C	1	U		1	U	
CARBON DISULFIDE	0.5	U		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROFORM	0.5	U		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U		0.5	U	
CYCLOHEXANE	1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	TB07-100714			TB08-100914			TB09-101014		
SDG: N1822	LAB_ID	N1822-39A			N1822-46A			N1822-49A		
FRACTION: OV	SAMP_DATE	10/7/2014			10/9/2014			10/10/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		1	U		1	U		1	U	
1,1-DICHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE		0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U	
1,2-DIBROMOETHANE		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	U		0.5	U		0.5	U	
1,2-DICHLOROPROPANE		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U		0.5	U		0.5	U	
2-BUTANONE		2.5	U		2.5	U		2.5	U	
2-HEXANONE		2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE		1	U		1	U		1	U	
ACETONE		2.5	UJ	C	2.5	UJ	C	2.5	UJ	C
BENZENE		0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE		0.5	U		0.5	U		0.5	U	
BROMOFORM		1	U		1	U		1	U	
BROMOMETHANE		1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE		0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U	
CHLOROBENZENE		0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE		1	U		1	U		1	U	
CHLOROETHANE		0.5	U		0.5	U		0.5	U	
CHLOROFORM		0.5	U		0.5	U		0.5	U	
CHLOROMETHANE		0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U	
CYCLOHEXANE		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE		1	UJ	C	1	UJ	C	1	UJ	C
ETHYLBENZENE		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014			FD02-101014			MW01-10S-NWG-100214			MW01-12S-NWG-100214		
SDG: N1822	LAB_ID	N1822-09A			N1822-52B			N1822-27B			N1822-29B		
FRACTION: OV	SAMP_DATE	9/30/2014			10/10/2014			10/2/2014			10/2/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014			MW02-10S-NWG-101014								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE		0.5	U		14			0.5	U		0.5	U	
METHYL ACETATE		1	U		1	U		1	U		1	U	
METHYL CYCLOHEXANE		1	U		8			1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		1	U		1	U		1	U		1	U	
TOLUENE		0.5	U		0.5	U		0.5	U		0.5	U	
TOTAL XYLENES		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		3.7			0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW01-14S-NWG-100914			MW02-04Sa-NWG-100614			MW02-05S-NWG-100214			MW02-08Sa-NWG-100114		
SDG: N1822	LAB_ID	N1822-47B			N1822-35A			N1822-23B			N1822-20B		
FRACTION: OV	SAMP_DATE	10/9/2014			10/6/2014			10/2/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
METHYL ACETATE		1	U		1	U		1	U		1	U	
METHYL CYCLOHEXANE		1	U		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		1	U		1	U		1	U		1	U	
TOLUENE		0.5	U		0.5	U		0.5	U		0.5	U	
TOTAL XYLENES		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW02-08SA-NWG-100114			MW02-09S-NWG-100814			MW02-10S-NWG-101014			MW02-11S-NWG-100814		
SDG: N1822	LAB_ID	N1822-20B			N1822-42B			N1822-50B			N1822-44B		
FRACTION: OV	SAMP_DATE	10/1/2014			10/8/2014			10/10/2014			10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE					0.5	U		14			0.5	U	
METHYL ACETATE					1	U		1	U		1	U	
METHYL CYCLOHEXANE					1	U		8			1	U	
METHYL TERT-BUTYL ETHER					0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE					0.5	U		0.5	U		0.5	U	
STYRENE					0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE					1	U		1	U		1	U	
TOLUENE					0.5	U		0.5	U		0.5	U	
TOTAL XYLENES					1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE					1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE					0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE					0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE					1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE					0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW03-02S-NWG-092914			MW03-04S-NWG-093014			MW03-05S-NWG-100114			MW03-15I-NWG-092914		
SDG: N1822	LAB_ID	N1822-02A			N1822-07A			N1822-16B			N1822-04A		
FRACTION: OV	SAMP_DATE	9/29/2014			9/30/2014			10/1/2014			9/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
METHYL ACETATE		1	U		1	U		1	U		1	U	
METHYL CYCLOHEXANE		1	U		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		1	U		1	U		1	U		1	U	
TOLUENE		0.5	U		0.5	U		0.5	U		0.5	U	
TOTAL XYLENES		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW03-15S-NWG-100114			MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014		
SDG: N1822	LAB_ID	N1822-18B			N1822-37A			N1822-25B			N1822-11A		
FRACTION: OV	SAMP_DATE	10/1/2014			10/6/2014			10/2/2014			9/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
METHYL ACETATE		1	U		1	U		1	U		1	U	
METHYL CYCLOHEXANE		1	U		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		1	U		1	U		1	U		1	U	
TOLUENE		0.5	U		0.5	U		0.5	U		0.5	U	
TOTAL XYLENES		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		1.1			1.6			4.9			3.3		
TRICHLOROFLUOROMETHANE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	RB01-100114	RB02-100814	TB01-092914	TB02-093014
SDG: N1822	LAB_ID	N1822-14B	N1822-40B	N1822-01A	N1822-06A
FRACTION: OV	SAMP_DATE	10/1/2014	10/8/2014	9/29/2014	9/30/2014
MEDIA: WATER	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/L	UG/L	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0	0.0	0.0
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
METHYL ACETATE	1	U		1	U		1	U		1	U	
METHYL CYCLOHEXANE	1	U		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE	2.1			1.2			0.5	U		0.5	U	
STYRENE	0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	0.5	U		0.5	U		0.5	U		0.5	U	
TOTAL XYLENES	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE	1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE	0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	TB03-10014			TB04-100214			TB05-100314			TB06-100614		
SDG: N1822	LAB_ID	N1822-13A			N1822-22A			N1822-31A			N1822-34A		
FRACTION: OV	SAMP_DATE	10/1/2014			10/2/2014			10/3/2014			10/6/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U		0.5	U	
METHYL ACETATE		1	U		1	U		1	U		1	U	
METHYL CYCLOHEXANE		1	U		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		1	U		1	U		1	U		1	U	
TOLUENE		0.5	U		0.5	U		0.5	U		0.5	U	
TOTAL XYLENES		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	TB07-100714	TB08-100914	TB09-101014
SDG: N1822	LAB_ID	N1822-39A	N1822-46A	N1822-49A
FRACTION: OV	SAMP_DATE	10/7/2014	10/9/2014	10/10/2014
MEDIA: WATER	QC_TYPE	NM	NM	NM
	UNITS	UG/L	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0	0.0
	DUP_OF			

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ISOPROPYLBENZENE	0.5	U		0.5	U		0.5	U	
METHYL ACETATE	1	U		1	U		1	U	
METHYL CYCLOHEXANE	1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE	0.5	U		0.5	U		0.5	U	
STYRENE	0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE	1	U		1	U		1	U	
TOLUENE	0.5	U		0.5	U		0.5	U	
TOTAL XYLENES	1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE	0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE	1	UJ	C	1	UJ	C	1	UJ	C
VINYL CHLORIDE	0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014						MW03-02S-NWG-092914			MW03-15I-NWG-092914		
SDG: N1822	LAB_ID	N1822-09B						N1822-02B			N1822-04B		
FRACTION: OS	SAMP_DATE	9/30/2014						9/29/2014			9/29/2014		
MEDIA: WATER	QC_TYPE	NM						NM			NM		
	UNITS	UG/L						UG/L			UG/L		
	PCT_SOLIDS	0.0						0.0			0.0		
	DUP_OF				MW03-17S-NWG-093014								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL					2	U		2	U		2	U	
1,4-DIOXANE		10	U					10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)					2	U		2	U		2	U	
2,4,5-TRICHLOROPHENOL					2	U		2	U		2	U	
2,4,6-TRICHLOROPHENOL					2	U		2	U		2	U	
2,4-DICHLOROPHENOL					2	U		2	U		2	U	
2,4-DIMETHYLPHENOL					2	U		2	U		2	U	
2,4-DINITROPHENOL					10	U		10	U		10	U	
2,4-DINITROTOLUENE					2	U		2	U		2	U	
2,6-DINITROTOLUENE					2	U		2	U		2	U	
2-CHLORONAPHTHALENE					2	U		2	U		2	U	
2-CHLOROPHENOL					2	U		2	U		2	U	
2-METHYLNAPHTHALENE					2	U		2	U		2	U	
2-METHYLPHENOL					2	U		2	U		2	U	
2-NITROANILINE					2	U		2	U		2	U	
2-NITROPHENOL					2	U		2	U		2	U	
3,3'-DICHLOROBENZIDINE					10	U		10	U		10	U	
3-NITROANILINE					2	U		2	U		2	U	
4,6-DINITRO-2-METHYLPHENOL					2	U		2	U		2	U	
4-BROMOPHENYL PHENYL ETHER					2	U		2	U		2	U	
4-CHLORO-3-METHYLPHENOL					2	U		2	U		2	U	
4-CHLOROANILINE					2	U		2	U		2	U	
4-CHLOROPHENYL PHENYL ETHER					2	U		2	U		2	U	
4-METHYLPHENOL					2	U		2	U		2	U	
4-NITROANILINE					2	U		2	U		2	U	
4-NITROPHENOL					2	U		2	U		2	U	
ACENAPHTHENE					2	U		2	U		2	U	
ACENAPHTHYLENE					2	U		2	U		2	U	
ACETOPHENONE					2	U		2	U		2	U	
ANTHRACENE					2	U		2	U		2	U	
ATRAZINE					2	U		2	U		2	U	
BENZALDEHYDE					2	UJ	C	2	UJ	C	2	UJ	C
BENZO(A)ANTHRACENE					2	U		2	U		2	U	
BENZO(A)PYRENE					2	U		2	U		2	U	
BENZO(B)FLUORANTHENE					2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	MW03-15S-NWG-100114			MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014		
SDG: N1822	LAB_ID	N1822-18C			N1822-37B			N1822-25C			N1822-11B		
FRACTION: OS	SAMP_DATE	10/1/2014			10/6/2014			10/2/2014			9/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL	2	U		2	U		2	U		2	U	
1,4-DIOXANE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	2	U		2	U		2	U		2	U	
2,4,5-TRICHLOROPHENOL	2	U		2	U		2	U		2	U	
2,4,6-TRICHLOROPHENOL	2	U		2	U		2	U		2	U	
2,4-DICHLOROPHENOL	2	U		2	U		2	U		2	U	
2,4-DIMETHYLPHENOL	2	U		2	U		2	U		2	U	
2,4-DINITROPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROTOLUENE	2	U		2	U		2	U		2	U	
2,6-DINITROTOLUENE	2	U		2	U		2	U		2	U	
2-CHLORONAPHTHALENE	2	U		2	U		2	U		2	U	
2-CHLOROPHENOL	2	U		2	U		2	U		2	U	
2-METHYLNAPHTHALENE	2	U		2	U		2	U		2	U	
2-METHYLPHENOL	2	U		2	U		2	U		2	U	
2-NITROANILINE	2	U		2	U		2	U		2	U	
2-NITROPHENOL	2	U		2	U		2	U		2	U	
3,3'-DICHLOROBENZIDINE	10	U		10	U		10	U		10	U	
3-NITROANILINE	2	U		2	U		2	U		2	U	
4,6-DINITRO-2-METHYLPHENOL	2	U		2	U		2	U		2	U	
4-BROMOPHENYL PHENYL ETHER	2	U		2	U		2	U		2	U	
4-CHLORO-3-METHYLPHENOL	2	U		2	U		2	U		2	U	
4-CHLOROANILINE	2	U		2	U		2	U		2	U	
4-CHLOROPHENYL PHENYL ETHER	2	U		2	U		2	U		2	U	
4-METHYLPHENOL	2	U		2	U		2	U		2	U	
4-NITROANILINE	2	U		2	U		2	U		2	U	
4-NITROPHENOL	2	U		2	U		2	UJ	C	2	UJ	C
ACENAPHTHENE	2	U		2	U		2	U		2	U	
ACENAPHTHYLENE	2	U		2	U		2	U		2	U	
ACETOPHENONE	2	U		2	U		2	U		2	U	
ANTHRACENE	2	U		2	U		2	U		2	U	
ATRAZINE	2	U		2	U		2	U		2	U	
BENZALDEHYDE	2	UJ	C	2	UJ	C	2	UJ	C	2	UJ	C
BENZO(A)ANTHRACENE	2	U		2	U		2	U		2	U	
BENZO(A)PYRENE	2	U		2	U		2	U		2	U	
BENZO(B)FLUORANTHENE	2	U		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	RB01-100114
SDG: N1822	LAB_ID	N1822-14C
FRACTION: OS	SAMP_DATE	10/1/2014
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,1-BIPHENYL	2	U	
1,4-DIOXANE	10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	2	U	
2,4,5-TRICHLOROPHENOL	2	U	
2,4,6-TRICHLOROPHENOL	2	U	
2,4-DICHLOROPHENOL	2	U	
2,4-DIMETHYLPHENOL	2	U	
2,4-DINITROPHENOL	10	U	
2,4-DINITROTOLUENE	2	U	
2,6-DINITROTOLUENE	2	U	
2-CHLORONAPHTHALENE	2	U	
2-CHLOROPHENOL	2	U	
2-METHYLNAPHTHALENE	2	U	
2-METHYLPHENOL	2	U	
2-NITROANILINE	2	U	
2-NITROPHENOL	2	U	
3,3'-DICHLOROBENZIDINE	10	U	
3-NITROANILINE	2	U	
4,6-DINITRO-2-METHYLPHENOL	2	U	
4-BROMOPHENYL PHENYL ETHER	2	U	
4-CHLORO-3-METHYLPHENOL	2	U	
4-CHLOROANILINE	2	U	
4-CHLOROPHENYL PHENYL ETHER	2	U	
4-METHYLPHENOL	2	U	
4-NITROANILINE	2	U	
4-NITROPHENOL	2	U	
ACENAPHTHENE	2	U	
ACENAPHTHYLENE	2	U	
ACETOPHENONE	2	U	
ANTHRACENE	2	U	
ATRAZINE	2	U	
BENZALDEHYDE	2	UJ	C
BENZO(A)ANTHRACENE	2	U	
BENZO(A)PYRENE	2	U	
BENZO(B)FLUORANTHENE	2	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014						MW03-02S-NWG-092914			MW03-15I-NWG-092914		
SDG: N1822	LAB_ID	N1822-09B						N1822-02B			N1822-04B		
FRACTION: OS	SAMP_DATE	9/30/2014						9/29/2014			9/29/2014		
MEDIA: WATER	QC_TYPE	NM						NM			NM		
	UNITS	UG/L						UG/L			UG/L		
	PCT_SOLIDS	0.0						0.0			0.0		
	DUP_OF				MW03-17S-NWG-093014								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(G,H,I)PERYLENE				2	U		2	U		2	U	
BENZO(K)FLUORANTHENE				2	U		2	U		2	U	
BIS(2-CHLOROETHOXY)METHANE				2	U		2	U		2	U	
BIS(2-CHLOROETHYL)ETHER				2	U		2	U		2	U	
BIS(2-ETHYLHEXYL)PHTHALATE				2	U		2	U		2	U	
BUTYL BENZYL PHTHALATE				2	U		2	U		2	U	
CAPROLACTAM				10	U		10	U		10	U	
CARBAZOLE				2	U		2	U		2	U	
CHRYSENE				2	U		2	U		2	U	
DIBENZO(A,H)ANTHRACENE				2	U		2	U		2	U	
DIBENZOFURAN				2	U		2	U		2	U	
DIETHYL PHTHALATE				2	U		2	U		2	U	
DIMETHYL PHTHALATE				2	U		2	U		2	U	
DI-N-BUTYL PHTHALATE	2.8	U	A				9.3	U	A	7.2	U	A
DI-N-OCTYL PHTHALATE	2	U					2	U		2	U	
FLUORANTHENE				2	U		2	U		2	U	
FLUORENE				2	U		2	U		2	U	
HEXACHLOROBENZENE				2	U		2	U		2	U	
HEXACHLOROBUTADIENE				2	U		2	U		2	U	
HEXACHLOROCYCLOPENTADIENE				10	UJ	C	10	UJ	C	10	UJ	C
HEXACHLOROETHANE				2	U		2	U		2	U	
INDENO(1,2,3-CD)PYRENE				2	U		2	U		2	U	
ISOPHORONE				2	U		2	U		2	U	
NAPHTHALENE				2	U		2	U		2	U	
NITROBENZENE				2	U		2	U		2	U	
N-NITROSO-DI-N-PROPYLAMINE	2	U					2	U		2	U	
N-NITROSODIPHENYLAMINE	2	U					2	U		2	U	
PENTACHLOROPHENOL				10	U		10	U		10	U	
PHENANTHRENE				2	U		2	U		2	U	
PHENOL				2	U		2	U		2	U	
PYRENE				2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	MW03-15S-NWG-100114			MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014		
SDG: N1822	LAB_ID	N1822-18C			N1822-37B			N1822-25C			N1822-11B		
FRACTION: OS	SAMP_DATE	10/1/2014			10/6/2014			10/2/2014			9/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(G,H,I)PERYLENE	2	U		2	U		2	U		2	U	
BENZO(K)FLUORANTHENE	2	U		2	U		2	U		2	U	
BIS(2-CHLOROETHOXY)METHANE	2	U		2	U		2	U		2	U	
BIS(2-CHLOROETHYL)ETHER	2	U		2	U		2	UJ	C	2	UJ	C
BIS(2-ETHYLHEXYL)PHTHALATE	2	U		2	U		2	U		2	U	
BUTYL BENZYL PHTHALATE	2	U		2	U		2	U		2	U	
CAPROLACTAM	10	U		10	U		10	U		10	U	
CARBAZOLE	2	U		2	U		2	U		2	U	
CHRYSENE	2	U		2	U		2	U		2	U	
DIBENZO(A,H)ANTHRACENE	2	U		2	U		2	U		2	U	
DIBENZOFURAN	2	U		2	U		2	U		2	U	
DIETHYL PHTHALATE	2	U		2	U		2	U		2	U	
DIMETHYL PHTHALATE	2	U		2	U		2	U		2	U	
DI-N-BUTYL PHTHALATE	2.8	U	A	4.8	U	A	7.5	U	A	7	U	A
DI-N-OCTYL PHTHALATE	2	U		2	U		2	U		2	U	
FLUORANTHENE	2	U		2	U		2	U		2	U	
FLUORENE	2	U		2	U		2	U		2	U	
HEXACHLOROBENZENE	2	U		2	U		2	U		2	U	
HEXACHLOROBUTADIENE	2	U		2	U		2	U		2	U	
HEXACHLOROCYCLOPENTADIENE	10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
HEXACHLOROETHANE	2	U		2	U		2	U		2	U	
INDENO(1,2,3-CD)PYRENE	2	U		2	U		2	U		2	U	
ISOPHORONE	2	U		2	U		2	U		2	U	
NAPHTHALENE	2	U		2	U		2	U		2	U	
NITROBENZENE	2	U		2	U		2	U		2	U	
N-NITROSO-DI-N-PROPYLAMINE	2	U		2	U		2	U		2	U	
N-NITROSODIPHENYLAMINE	2	U		2	U		2	U		2	U	
PENTACHLOROPHENOL	10	U		10	U		10	UJ	C	10	UJ	C
PHENANTHRENE	2	U		2	U		2	U		2	U	
PHENOL	2	U		2	U		2	U		2	U	
PYRENE	2	U		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	RB01-100114
SDG: N1822	LAB_ID	N1822-14C
FRACTION: OS	SAMP_DATE	10/1/2014
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
BENZO(G,H,I)PERYLENE	2	U	
BENZO(K)FLUORANTHENE	2	U	
BIS(2-CHLOROETHOXY)METHANE	2	U	
BIS(2-CHLOROETHYL)ETHER	2	U	
BIS(2-ETHYLHEXYL)PHTHALATE	2	U	
BUTYL BENZYL PHTHALATE	2	U	
CAPROLACTAM	10	U	
CARBAZOLE	2	U	
CHRYSENE	2	U	
DIBENZO(A,H)ANTHRACENE	2	U	
DIBENZOFURAN	2	U	
DIETHYL PHTHALATE	2	U	
DIMETHYL PHTHALATE	2	U	
DI-N-BUTYL PHTHALATE	2.3	J	P
DI-N-OCTYL PHTHALATE	2	U	
FLUORANTHENE	2	U	
FLUORENE	2	U	
HEXACHLOROBENZENE	2	U	
HEXACHLOROBUTADIENE	2	U	
HEXACHLOROCYCLOPENTADIENE	10	UJ	C
HEXACHLOROETHANE	2	U	
INDENO(1,2,3-CD)PYRENE	2	U	
ISOPHORONE	2	U	
NAPHTHALENE	2	U	
NITROBENZENE	2	U	
N-NITROSO-DI-N-PROPYLAMINE	2	U	
N-NITROSODIPHENYLAMINE	2	U	
PENTACHLOROPHENOL	10	U	
PHENANTHRENE	2	U	
PHENOL	2	U	
PYRENE	2	U	

PROJ_NO: 01813	NSAMPLE	FD02-101014			MW01-10S-NWG-100214			MW01-12S-NWG-100214			MW01-14S-NWG-100914		
SDG: N1822	LAB_ID	N1822-52C			N1822-27C			N1822-29C			N1822-47C		
FRACTION: PAH	SAMP_DATE	10/10/2014			10/2/2014			10/2/2014			10/9/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW02-10S-NWG-101014											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
NAPHTHALENE		2.8			0.1	U		0.1	U		0.1	U	

PROJ_NO: 01813	NSAMPLE	MW02-03S-NWG-100314			MW02-05S-NWG-100214			MW02-08Sa-NWG-100114			MW02-09S-NWG-100814		
SDG: N1822	LAB_ID	N1822-32C			N1822-23C			N1822-20C			N1822-42C		
FRACTION: PAH	SAMP_DATE	10/3/2014			10/2/2014			10/1/2014			10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
NAPHTHALENE		0.1	U		0.1	U		0.1	U		0.1	U	

PROJ_NO: 01813	NSAMPLE	MW02-10S-NWG-101014			MW02-11S-NWG-100814			MW02-4Sa-NWG-100614			MW03-02S-NWG-092914		
SDG: N1822	LAB_ID	N1822-50C			N1822-44C			N1822-35B			N1822-02B		
FRACTION: PAH	SAMP_DATE	10/10/2014			10/8/2014			10/6/2014			9/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
NAPHTHALENE		2.6			0.1	U		0.1	U		0.1	U	

PROJ_NO: 01813	NSAMPLE	MW03-04S-NWG-093014			MW03-05S-NWG-100114			MW03-15I-NWG-092914			RB01-100114		
SDG: N1822	LAB_ID	N1822-07B			N1822-16C			N1822-04B			N1822-14C		
FRACTION: PAH	SAMP_DATE	9/30/2014			10/1/2014			9/29/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
NAPHTHALENE		0.1	U		0.1	U		0.1	U		0.1	U	

PROJ_NO: 01813	NSAMPLE	RB02-100814		
SDG: N1822	LAB_ID	N1822-40C		
FRACTION: PAH	SAMP_DATE	10/8/2014		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
NAPHTHALENE		0.1	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014			MW03-02S-NWG-092914			MW03-15I-NWG-092914			MW03-15S-NWG-100114		
SDG: N1822	LAB_ID	N1822-09B			N1822-02B			N1822-04B			N1822-18C		
FRACTION: PEST	SAMP_DATE	9/30/2014			9/29/2014			9/29/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.025	U		0.025	U		0.025	U		0.025	U	
4,4'-DDE		0.025	U		0.025	U		0.025	U		0.025	U	
4,4'-DDT		0.025	U		0.025	U		0.025	U		0.025	U	
ALDRIN		0.013	U		0.013	U		0.013	U		0.013	U	
ALPHA-BHC		0.013	U		0.013	U		0.013	U		0.013	U	
ALPHA-CHLORDANE		0.013	U		0.013	U		0.013	U		0.013	U	
BETA-BHC		0.013	U		0.013	U		0.013	U		0.013	U	
DELTA-BHC		0.013	U		0.013	U		0.013	U		0.013	U	
DIELDRIN		0.025	U		0.025	U		0.025	U		0.025	U	
ENDOSULFAN I		0.013	U		0.013	U		0.013	U		0.013	U	
ENDOSULFAN II		0.025	U		0.025	U		0.025	U		0.025	U	
ENDOSULFAN SULFATE		0.025	U		0.025	U		0.025	U		0.025	U	
ENDRIN		0.025	U		0.025	U		0.025	U		0.025	U	
ENDRIN ALDEHYDE		0.025	U		0.025	U		0.025	U		0.025	U	
ENDRIN KETONE		0.025	U		0.025	U		0.025	U		0.025	U	
GAMMA-BHC (LINDANE)		0.013	U		0.013	U		0.013	U		0.013	U	
GAMMA-CHLORDANE		0.013	U		0.013	U		0.013	U		0.013	U	
HEPTACHLOR		0.013	U		0.013	U		0.013	U		0.013	U	
HEPTACHLOR EPOXIDE		0.013	U		0.013	U		0.013	U		0.013	U	
METHOXYCHLOR		0.13	U		0.13	U		0.13	U		0.13	U	
TOXAPHENE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014			RB01-100114		
SDG: N1822	LAB_ID	N1822-37B			N1822-25C			N1822-11B			N1822-14C		
FRACTION: PEST	SAMP_DATE	10/6/2014			10/2/2014			9/30/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.025	U		0.025	U		0.025	U		0.025	U	
4,4'-DDE		0.025	U		0.025	U		0.025	U		0.025	U	
4,4'-DDT		0.025	U		0.025	U		0.025	U		0.025	U	
ALDRIN		0.013	U		0.013	U		0.013	U		0.013	U	
ALPHA-BHC		0.013	U		0.013	U		0.013	U		0.013	U	
ALPHA-CHLORDANE		0.013	U		0.013	U		0.013	U		0.013	U	
BETA-BHC		0.013	U		0.013	U		0.013	U		0.013	U	
DELTA-BHC		0.013	U		0.013	U		0.013	U		0.013	U	
DIELDRIN		0.025	U		0.025	U		0.025	U		0.025	U	
ENDOSULFAN I		0.013	U		0.013	U		0.013	U		0.013	U	
ENDOSULFAN II		0.025	U		0.025	U		0.025	U		0.025	U	
ENDOSULFAN SULFATE		0.025	U		0.025	U		0.025	U		0.025	U	
ENDRIN		0.025	U		0.025	U		0.025	U		0.025	U	
ENDRIN ALDEHYDE		0.025	U		0.025	U		0.025	U		0.025	U	
ENDRIN KETONE		0.025	U		0.025	U		0.025	U		0.025	U	
GAMMA-BHC (LINDANE)		0.013	U		0.013	U		0.013	U		0.013	U	
GAMMA-CHLORDANE		0.013	U		0.013	U		0.013	U		0.013	U	
HEPTACHLOR		0.013	U		0.013	U		0.013	U		0.013	U	
HEPTACHLOR EPOXIDE		0.013	U		0.013	U		0.013	U		0.013	U	
METHOXYCHLOR		0.13	U		0.13	U		0.13	U		0.13	U	
TOXAPHENE		0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014			MW03-02S-NWG-092914			MW03-15I-NWG-092914			MW03-15S-NWG-100114		
SDG: N1822	LAB_ID	N1822-09B			N1822-02B			N1822-04B			N1822-18C		
FRACTION: PCB	SAMP_DATE	9/30/2014			9/29/2014			9/29/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1221		0.5	U		0.5	U		0.5	U		0.5	U	
AROCLOR-1232		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1242		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1248		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1254		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1260		0.25	U		0.25	U		0.25	U		0.25	U	

PROJ_NO: 01813	NSAMPLE	MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014			RB01-100114		
SDG: N1822	LAB_ID	N1822-37B			N1822-25C			N1822-11B			N1822-14C		
FRACTION: PCB	SAMP_DATE	10/6/2014			10/2/2014			9/30/2014			10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1221		0.5	U		0.5	U		0.5	U		0.5	U	
AROCLOR-1232		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1242		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1248		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1254		0.25	U		0.25	U		0.25	U		0.25	U	
AROCLOR-1260		0.25	U		0.25	U		0.25	U		0.25	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014						FD02-101014					
SDG: N1822	LAB_ID	N1822-09A						N1822-52B					
FRACTION: PET	SAMP_DATE	9/30/2014						10/10/2014					
MEDIA: WATER	QC_TYPE	NM						NM					
	UNITS	MG/L			UG/L			MG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014			MW03-17S-NWG-093014			MW02-10S-NWG-101014			MW02-10S-NWG-101014		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U					1400		
TPH (C09-C40)		0.05	U					0.64					

PROJ_NO: 01813	NSAMPLE	MW01-10S-NWG-100214						MW01-12S-NWG-100214					
SDG: N1822	LAB_ID	N1822-27B						N1822-29B					
FRACTION: PET	SAMP_DATE	10/2/2014						10/2/2014					
MEDIA: WATER	QC_TYPE	NM						NM					
	UNITS	MG/L			UG/L			MG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U					20	U	
TPH (C09-C40)		0.05	U					0.05	U				

PROJ_NO: 01813	NSAMPLE	MW01-14S-NWG-100914						MW02-03S-NWG-100314			MW02-05S-NWG-100214		
SDG: N1822	LAB_ID	N1822-47B						N1822-32C			N1822-23B		
FRACTION: PET	SAMP_DATE	10/9/2014						10/3/2014			10/2/2014		
MEDIA: WATER	QC_TYPE	NM						NM			NM		
	UNITS	MG/L			UG/L			MG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U							
TPH (C09-C40)		0.05	U					0.05	U		0.05	U	

PROJ_NO: 01813	NSAMPLE	MW02-05S-NWG-100214			MW02-08Sa-NWG-100114						MW02-09S-NWG-100814		
SDG: N1822	LAB_ID	N1822-23B			N1822-20B						N1822-42B		
FRACTION: PET	SAMP_DATE	10/2/2014			10/1/2014						10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					20	U				
TPH (C09-C40)					0.05	U					0.05	U	

PROJ_NO: 01813	NSAMPLE	MW02-09S-NWG-100814			MW02-10S-NWG-101014						MW02-11S-NWG-100814		
SDG: N1822	LAB_ID	N1822-42B			N1822-50B						N1822-44B		
FRACTION: PET	SAMP_DATE	10/8/2014			10/10/2014						10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					1300					
TPH (C09-C40)					0.68						0.05	U	

PROJ_NO: 01813	NSAMPLE	MW02-11S-NWG-100814			MW02-4Sa-NWG-100614						MW03-02S-NWG-092914		
SDG: N1822	LAB_ID	N1822-44B			N1822-35A						N1822-02A		
FRACTION: PET	SAMP_DATE	10/8/2014			10/6/2014						9/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					20	U				
TPH (C09-C40)					0.05	U					0.05	U	

PROJ_NO: 01813	NSAMPLE	MW03-02S-NWG-092914			MW03-04S-NWG-093014						MW03-05S-NWG-100114		
SDG: N1822	LAB_ID	N1822-02A			N1822-07A						N1822-16B		
FRACTION: PET	SAMP_DATE	9/29/2014			9/30/2014						10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					20	U				
TPH (C09-C40)					0.05	U					0.05	U	

PROJ_NO: 01813	NSAMPLE	MW03-05S-NWG-100114			MW03-15I-NWG-092914						MW03-15S-NWG-100114		
SDG: N1822	LAB_ID	N1822-16B			N1822-04A						N1822-18B		
FRACTION: PET	SAMP_DATE	10/1/2014			9/29/2014						10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					20	U				
TPH (C09-C40)					0.05	U					0.05	U	

PROJ_NO: 01813	NSAMPLE	MW03-15S-NWG-100114			MW03-16S-NWG-100614						MW03-17I-NWG-100214		
SDG: N1822	LAB_ID	N1822-18B			N1822-37A						N1822-25B		
FRACTION: PET	SAMP_DATE	10/1/2014			10/6/2014						10/2/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					20	U				
TPH (C09-C40)					0.05	U					0.05	U	

PROJ_NO: 01813	NSAMPLE	MW03-17I-NWG-100214			MW03-17S-NWG-093014						RB01-100114		
SDG: N1822	LAB_ID	N1822-25B			N1822-11A						N1822-14B		
FRACTION: PET	SAMP_DATE	10/2/2014			9/30/2014						10/1/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					20	U				
TPH (C09-C40)					0.05	U					0.05	U	

PROJ_NO: 01813	NSAMPLE	RB01-100114			RB02-100814						TB01-092914		
SDG: N1822	LAB_ID	N1822-14B			N1822-40B						N1822-01A		
FRACTION: PET	SAMP_DATE	10/1/2014			10/8/2014						9/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			MG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U					20	U		20	U	
TPH (C09-C40)					0.05	U							

PROJ_NO: 01813	NSAMPLE	TB02-093014			TB03-10014			TB04-100214			TB05-100314		
SDG: N1822	LAB_ID	N1822-06A			N1822-13A			N1822-22A			N1822-31A		
FRACTION: PET	SAMP_DATE	9/30/2014			10/1/2014			10/2/2014			10/3/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U		20	U		20	U		20	U	
TPH (C09-C40)													

PROJ_NO: 01813	NSAMPLE	TB06-100614			TB07-100714			TB08-100914			TB09-101014		
SDG: N1822	LAB_ID	N1822-34A			N1822-39A			N1822-46A			N1822-49A		
FRACTION: PET	SAMP_DATE	10/6/2014			10/7/2014			10/9/2014			10/10/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U		20	U		20	U		20	U	
TPH (C09-C40)													

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD01-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7444.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	1.3		0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	3.7		0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD01-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7444.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD02-101014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-52B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7621.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD02-101014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-52B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7621.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	14		0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	10		0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	8.0		0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-10S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-27B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7461.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-10S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-27B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7461.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-12S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-29B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7462.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-12S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-29B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7462.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-14S-NWG-100 914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-47B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7618.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-14S-NWG-100 914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-47B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7618.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-4SA-NWG-100 614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-35A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7608.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/06/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-4SA-NWG-100 614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-35A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7608.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/06/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-05S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-23B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7452.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-05S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-23B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7452.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-08SA-NWG-10 0114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-20B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7450.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-08SA-NWG-10 0114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-20B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7450.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-09S-NWG-100 814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-42B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7615.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-09S-NWG-100 814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-42B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7615.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-10S-NWG-101 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-50B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7620.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-10S-NWG-101014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-50B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7620.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	14		0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	10		0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	8.0		0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-11S-NWG-100 814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-44B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7616.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-11S-NWG-100814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-44B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7616.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7440.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/30/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7440.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/30/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-04S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7443.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-04S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7443.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-05S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-16B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7448.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-05S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-16B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7448.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7441.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/30/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7441.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/30/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-18B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7449.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	1.1		0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-18B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7449.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16S-NWG-100 614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-37A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7609.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/06/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	1.6		0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16S-NWG-100 614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-37A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7609.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/06/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17I-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-25B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7453.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	4.9		0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17I-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-25B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7453.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-11A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7445.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	1.3		0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	3.3		0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17S-NWG-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-11A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7445.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7447.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	2.1		0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7447.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB02-100814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-40B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7614.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	1.2		0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB02-100814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-40B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7614.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB01-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7439.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/30/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB01-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7439.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/30/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB02-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7442.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB02-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7442.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB03-10014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-13A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7446.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB03-10014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-13A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7446.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/01/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB04-100214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-22A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7451.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB04-100214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-22A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7451.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB05-100314

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-31A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7528.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/14/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB05-100314

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-31A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7528.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/03/2014

% Moisture: not dec. Date Analyzed: 10/14/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB06-100614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-34A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7529.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/06/2014

% Moisture: not dec. Date Analyzed: 10/14/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB06-100614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-34A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7529.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/06/2014

% Moisture: not dec. Date Analyzed: 10/14/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB07-100714

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-39A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7613.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB07-100714

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-39A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7613.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/08/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB08-100914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-46A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7617.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB08-100914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-46A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7617.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB09-101014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-49A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7619.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB09-101014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-49A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7619.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/10/2014

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

Client: Tetra Tech, Inc.
Client Sample ID: FD01-093014
Lab ID: N1822-09
Project: CED Area, WE01-Davisville
Collection Date: 09/30/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							**GRO_W**	
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/08/2014 16:17	79408
Surrogate: Bromofluorobenzene	95.2			87-112	%REC	1	10/08/2014 16:17	79408

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

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Client: Tetra Tech, Inc.
Client Sample ID: FD02-101014
Lab ID: N1822-52
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	1400		100 ^	100	ug/L	1	10/21/2014 16:18	79616
Surrogate: Bromofluorobenzene	96.1			87-112	%REC	1	10/21/2014 16:18	79616

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD01-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-09B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9936.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2'-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD01-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-09B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9936.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	2.8	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3'-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1'-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FD01-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-09B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9936.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9932.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2'-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9932.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	9.3	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9932.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown	7.022	4.4	J
02	301-02-0	9-Octadecenamide, (Z)- (9.36	9.366	14	NJ
03	301-02-0	9-Octadecenamide, (Z)- (10.5	10.529	11	NJ

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9933.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9933.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	7.2	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9933.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	301-02-0	9-Octadecenamide, (Z)-	9.366	10	NJ
02		Unknown	10.524	8.4	J

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9939.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9939.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	2.8	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW03-15S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9939.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16S-NWG-100 614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-37B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9941.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/06/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2'-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16S-NWG-100 614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-37B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9941.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/06/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	4.8	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW03-16S-NWG-100614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-37B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9941.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/06/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17I-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9968.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/27/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17I-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9968.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/27/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	7.5	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW03-17I-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9968.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/27/2014

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown (9.33050)	9.331	12	J
02		Unknown (10.47623)	10.476	9.2	J

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-11B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9967.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/27/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2'-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-11B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9967.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/27/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	7.0	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW03-17S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-11B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9967.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/27/2014

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	301-02-0	9-Octadecenamide, (Z)-	9.331	9.1	NJ
02		Unknown	10.476	8.0	J

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9938.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9938.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	2.3	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9938.D

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

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

[2]EPA-designated Registry Number.

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD02-101014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-52C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9895.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/10/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/17/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	2.8		0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-10S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-27C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9915.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-12S-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-29C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9916.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-14S-NWG-100914.

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-47C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9901.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/10/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/15/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-03S-NWG-100 314

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-32C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9917.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-05S-NWG-100214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-23C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9914.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-08SA-NWG-10 0114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-20C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9913.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-09S-NWG-100814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-42C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9899.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/08/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/15/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-10S-NWG-101014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-50C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9894.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/10/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/17/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	2.6		0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-11S-NWG-100814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-44C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9924.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/08/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/15/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-4SA-NWG-100614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-35B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9923.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/06/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9906.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-04S-NWG-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9910.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-05S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-16C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9912.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9907.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9911.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB02-100814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-40C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9898.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/08/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/15/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD01-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-09B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3585F.D/E6B3585R.D

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3580F.D/E6B3580R.D

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3581F.D/E6B3581R.D

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3595F.D/E6B3595R.D

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/21/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16S-NWG-100 614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-37B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3597F.D/E6B3597R.D

% Moisture: Decanted: (Y/N) Date Received: 10/06/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/21/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17I-NWG-100 214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3596F.D/E6B3596R.D

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/21/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-11B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3586F.D/E6B3586R.D

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3594F.D/E6B3594R.D

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/21/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD01-093014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-09B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3158F.D/E2N3158R.D

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-02S-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3153F.D/E2N3153R.D

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15I-NWG-092914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3154F.D/E2N3154R.D

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16S-NWG-100614

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-37B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3503F.D/E2N3503R.D

% Moisture: Decanted: (Y/N) Date Received: 10/06/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/28/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17I-NWG-100214

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3502F.D/E2N3502R.D

% Moisture: Decanted: (Y/N) Date Received: 10/03/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/28/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-17S-NWG-093 014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-11B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3159F.D/E2N3159R.D

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/20/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB01-100114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-14C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3500F.D/E2N3500R.D

% Moisture: Decanted: (Y/N) Date Received: 09/30/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/28/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-15S-NWG-100 114

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N1822-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3501F.D/E2N3501R.D

% Moisture: Decanted: (Y/N) Date Received: 10/01/2014

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/28/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

Client: Tetra Tech, Inc.
Client Sample ID: FD01-093014 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-09 **Collection Date:** 09/30/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 17:36	79359
Surrogate: ortho-Terphenyl	73.8			50-150	%REC	1	10/21/2014 17:36	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: FD02-101014 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-52 **Collection Date:** 10/10/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	0.64		0.20 ^	0.20	mg/L	1	10/20/2014 17:36	79558
Surrogate: ortho-Terphenyl	84.7			50-150	%REC	1	10/20/2014 17:36	79558

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW01-10S-NWG-100214 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-27 **Collection Date:** 10/02/14 14:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 21:05	79359
Surrogate: ortho-Terphenyl	85.8			50-150	%REC	1	10/21/2014 21:05	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: MW01-12S-NWG-100214 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-29 **Collection Date:** 10/02/14 15:21

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_W		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 21:26	79359
Surrogate: ortho-Terphenyl	72.6			50-150	%REC	1	10/21/2014 21:26	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW01-14S-NWG-100914
Lab ID: N1822-47
Project: CED Area, WE01-Davisville
Collection Date: 10/09/14 11:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 13:23	79475
Surrogate: ortho-Terphenyl	72.8			50-150	%REC	1	10/21/2014 13:23	79475

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-03S-NWG-100314 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-32 **Collection Date:** 10/03/14 10:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 21:47	79359
Surrogate: ortho-Terphenyl	81.4			50-150	%REC	1	10/21/2014 21:47	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW02-05S-NWG-100214
Lab ID: N1822-23
Project: CED Area, WE01-Davisville
Collection Date: 10/02/14 11:28

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 20:23	79359
Surrogate: ortho-Terphenyl	88.2			50-150	%REC	1	10/21/2014 20:23	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-08SA-NWG-100114 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-20 **Collection Date:** 10/01/14 14:33

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 20:02	79359
Surrogate: ortho-Terphenyl	76.4			50-150	%REC	1	10/21/2014 20:02	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-09S-NWG-100814 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-42 **Collection Date:** 10/08/14 9:57

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 12:41	79475
Surrogate: ortho-Terphenyl	58.9			50-150	%REC	1	10/21/2014 12:41	79475

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW02-10S-NWG-101014
Lab ID: N1822-50

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	0.68		0.20 ^	0.20	mg/L	1	10/20/2014 17:15	79558
Surrogate: ortho-Terphenyl	91.8			50-150	%REC	1	10/20/2014 17:15	79558

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-11S-NWG-100814
Lab ID: N1822-44
Project: CED Area, WE01-Davisville
Collection Date: 10/08/14 13:57

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_W		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 13:02	79475
Surrogate: ortho-Terphenyl	73.4			50-150	%REC	1	10/21/2014 13:02	79475

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW02-4SA-NWG-100614
Lab ID: N1822-35
Project: CED Area, WE01-Davisville
Collection Date: 10/06/14 13:03

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 11:38	79475
Surrogate: ortho-Terphenyl	76.4			50-150	%REC	1	10/21/2014 11:38	79475

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-02S-NWG-092914
Lab ID: N1822-02
Project: CED Area, WE01-Davisville
Collection Date: 09/29/14 13:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 15:51	79359
Surrogate: ortho-Terphenyl	66.7			50-150	%REC	1	10/21/2014 15:51	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-04S-NWG-093014
Lab ID: N1822-07
Project: CED Area, WE01-Davisville
Collection Date: 09/30/14 11:23

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 17:15	79359
Surrogate: ortho-Terphenyl	71.2			50-150	%REC	1	10/21/2014 17:15	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-05S-NWG-100114 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-16 **Collection Date:** 10/01/14 10:56

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 19:21	79359
Surrogate: ortho-Terphenyl	62.6			50-150	%REC	1	10/21/2014 19:21	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-15I-NWG-092914
Lab ID: N1822-04
Project: CED Area, WE01-Davisville
Collection Date: 09/29/14 14:07

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 16:11	79359
Surrogate: ortho-Terphenyl	72.7			50-150	%REC	1	10/21/2014 16:11	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-15S-NWG-100114
Lab ID: N1822-18
Project: CED Area, WE01-Davisville
Collection Date: 10/01/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 19:41	79359
Surrogate: ortho-Terphenyl	83.4			50-150	%REC	1	10/21/2014 19:41	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-16S-NWG-100614
Lab ID: N1822-37

Project: CED Area, WE01-Davisville
Collection Date: 10/06/14 14:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 11:59	79475
Surrogate: ortho-Terphenyl	73.9			50-150	%REC	1	10/21/2014 11:59	79475

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-17I-NWG-100214
Lab ID: N1822-25
Project: CED Area, WE01-Davisville
Collection Date: 10/02/14 11:48

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 20:44	79359
Surrogate: ortho-Terphenyl	71.5			50-150	%REC	1	10/21/2014 20:44	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-17S-NWG-093014 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-11 **Collection Date:** 09/30/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 17:57	79359
Surrogate: ortho-Terphenyl	60.3			50-150	%REC	1	10/21/2014 17:57	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: RB01-100114
Lab ID: N1822-14

Project: CED Area, WE01-Davisville
Collection Date: 10/01/14 8:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 18:18	79359
Surrogate: ortho-Terphenyl	69.1			50-150	%REC	1	10/21/2014 18:18	79359

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: RB02-100814
Lab ID: N1822-40
Project: CED Area, WE01-Davisville
Collection Date: 10/08/14 9:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/21/2014 12:20	79475
Surrogate: ortho-Terphenyl	78.1			50-150	%REC	1	10/21/2014 12:20	79475

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW01-10S-NWG-100214
Lab ID: N1822-27
Project: CED Area, WE01-Davisville
Collection Date: 10/02/14 14:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 15:47	79465
Surrogate: Bromofluorobenzene	91.4			87-112	%REC	1	10/10/2014 15:47	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: MW01-12S-NWG-100214
Lab ID: N1822-29
Project: CED Area, WE01-Davisville
Collection Date: 10/02/14 15:21

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 16:08	79465
Surrogate: Bromofluorobenzene	95.0			87-112	%REC	1	10/10/2014 16:08	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: MW01-14S-NWG-100914
Lab ID: N1822-47
Project: CED Area, WE01-Davisville
Collection Date: 10/09/14 11:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 18:01	79493
Surrogate: Bromofluorobenzene	88.4			87-112	%REC	1	10/14/2014 18:01	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-4SA-NWG-100614 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-35 **Collection Date:** 10/06/14 13:03

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_W	
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 16:02	79493
Surrogate: Bromofluorobenzene	101			87-112	%REC	1	10/14/2014 16:02	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW02-05S-NWG-100214
Lab ID: N1822-23

Project: CED Area, WE01-Davisville
Collection Date: 10/02/14 11:28

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 15:04	79465
Surrogate: Bromofluorobenzene	95.1			87-112	%REC	1	10/10/2014 15:04	79465

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-08SA-NWG-100114
Lab ID: N1822-20
Project: CED Area, WE01-Davisville
Collection Date: 10/01/14 14:33

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 14:42	79465
Surrogate: Bromofluorobenzene	93.4			87-112	%REC	1	10/10/2014 14:42	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-09S-NWG-100814
Lab ID: N1822-42
Project: CED Area, WE01-Davisville
Collection Date: 10/08/14 9:57

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 17:15	79493
Surrogate: Bromofluorobenzene	99.7			87-112	%REC	1	10/14/2014 17:15	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-10S-NWG-101014
Lab ID: N1822-50
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	1300		100 ^	100	ug/L	1	10/21/2014 15:56	79616
Surrogate: Bromofluorobenzene	93.2			87-112	%REC	1	10/21/2014 15:56	79616

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-11S-NWG-100814
Lab ID: N1822-44
Project: CED Area, WE01-Davisville
Collection Date: 10/08/14 13:57

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 17:37	79493
Surrogate: Bromofluorobenzene	89.6			87-112	%REC	1	10/14/2014 17:37	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-02S-NWG-092914 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-02 **Collection Date:** 09/29/14 13:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/08/2014 15:01	79408
Surrogate: Bromofluorobenzene	96.9			87-112	%REC	1	10/08/2014 15:01	79408

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: MW03-04S-NWG-093014 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-07 **Collection Date:** 09/30/14 11:23

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/08/2014 15:47	79408
Surrogate: Bromofluorobenzene	97.3			87-112	%REC	1	10/08/2014 15:47	79408

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-05S-NWG-100114 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-16 **Collection Date:** 10/01/14 10:56

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 13:57	79465
Surrogate: Bromofluorobenzene	94.7			87-112	%REC	1	10/10/2014 13:57	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-15I-NWG-092914
Lab ID: N1822-04
Project: CED Area, WE01-Davisville
Collection Date: 09/29/14 14:07

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/08/2014 15:22	79408
Surrogate: Bromofluorobenzene	96.0			87-112	%REC	1	10/08/2014 15:22	79408

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-15S-NWG-100114
Lab ID: N1822-18
Project: CED Area, WE01-Davisville
Collection Date: 10/01/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 14:20	79465
Surrogate: Bromofluorobenzene	90.9			87-112	%REC	1	10/10/2014 14:20	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-16S-NWG-100614
Lab ID: N1822-37
Project: CED Area, WE01-Davisville
Collection Date: 10/06/14 14:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 16:23	79493
Surrogate: Bromofluorobenzene	97.2			87-112	%REC	1	10/14/2014 16:23	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-17I-NWG-100214 **Project:** CED Area, WE01-Davisville
Lab ID: N1822-25 **Collection Date:** 10/02/14 11:48

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 15:25	79465
Surrogate: Bromofluorobenzene	94.5			87-112	%REC	1	10/10/2014 15:25	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-17S-NWG-093014
Lab ID: N1822-11
Project: CED Area, WE01-Davisville
Collection Date: 09/30/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/08/2014 16:38	79408
Surrogate: Bromofluorobenzene	100			87-112	%REC	1	10/08/2014 16:38	79408

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB01-100114
Lab ID: N1822-14
Project: CED Area, WE01-Davisville
Collection Date: 10/01/14 8:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 13:29	79465
Surrogate: Bromofluorobenzene	102			87-112	%REC	1	10/10/2014 13:29	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB02-100814
Lab ID: N1822-40
Project: CED Area, WE01-Davisville
Collection Date: 10/08/14 9:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID					GRO_W			
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 16:45	79493
Surrogate: Bromofluorobenzene	97.9			87-112	%REC	1	10/14/2014 16:45	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB01-092914
Lab ID: N1822-01
Project: CED Area, WE01-Davisville
Collection Date: 09/29/14 10:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/08/2014 14:06	79408
Surrogate: Bromofluorobenzene	99.4			87-112	%REC	1	10/08/2014 14:06	79408

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: TB02-093014
Lab ID: N1822-06
Project: CED Area, WE01-Davisville
Collection Date: 09/30/14 9:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/08/2014 14:27	79408
Surrogate: Bromofluorobenzene	92.9			87-112	%REC	1	10/08/2014 14:27	79408

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB03-10014
Lab ID: N1822-13
Project: CED Area, WE01-Davisville
Collection Date: 10/01/14 8:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 12:44	79465
Surrogate: Bromofluorobenzene	92.7			87-112	%REC	1	10/10/2014 12:44	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB04-100214
Lab ID: N1822-22
Project: CED Area, WE01-Davisville
Collection Date: 10/02/14 8:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/10/2014 13:05	79465
Surrogate: Bromofluorobenzene	93.7			87-112	%REC	1	10/10/2014 13:05	79465

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB05-100314
Lab ID: N1822-31
Project: CED Area, WE01-Davisville
Collection Date: 10/03/14 8:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_W**		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 13:55	79493
Surrogate: Bromofluorobenzene	98.8			87-112	%REC	1	10/14/2014 13:55	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB06-100614
Lab ID: N1822-34
Project: CED Area, WE01-Davisville
Collection Date: 10/06/14 9:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 14:16	79493
Surrogate: Bromofluorobenzene	97.1			87-112	%REC	1	10/14/2014 14:16	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB07-100714
Lab ID: N1822-39
Project: CED Area, WE01-Davisville
Collection Date: 10/07/14 8:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 14:42	79493
Surrogate: Bromofluorobenzene	91.1			87-112	%REC	1	10/14/2014 14:42	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/29/2014

Client: Tetra Tech, Inc.
Client Sample ID: TB08-100914
Lab ID: N1822-46
Project: CED Area, WE01-Davisville
Collection Date: 10/09/14 8:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 15:19	79493
Surrogate: Bromofluorobenzene	89.5			87-112	%REC	1	10/14/2014 15:19	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: TB09-101014
Lab ID: N1822-49
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 8:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID					GRO_W			
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/21/2014 10:55	79616
Surrogate: Bromofluorobenzene	96.8			87-112	%REC	1	10/21/2014 10:55	79616

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: #01813 SDG: N1822

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: VOC, SVOC, PAH, PEST, PCB GRO, DRO

Missing Information	Date Lab Contacted	Date Received
N/A		

Validator: Michelle Allen Date: 11/17/14

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: _____ SDG: _____

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code). See DV letter

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: M. Allen Date: 11/12/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ see DV letter

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

See DV letter

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: M. Allen

Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-A

see DV letter

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: M. Allen

Date: 11/19/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

see DV letter

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: M. Allen

Date: 11/17/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria. See DV letter

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-D See DV letter

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria. see DV letter

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

See DV letter

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-IV-A

See DV letter

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: M. Allen

Date: 11/7/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards. See DV letter

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: M. Allen

Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria. See DV letter

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)
Comments:									

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

See DV letter

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: M. Allen Date: 11/7/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

See DV letter

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: M. Allen

Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV letter

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2.4-Dichlorophenol-d_3

Validator: M. Allen

Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

SV-VI-A (Cont'd) see DV letter

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ see DV letter

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria							
		Fluoranthene-d_{10}		Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10}		Affected Analytes	Action (Detection/ND)
		Water 50-150	Soil 50-150			Water 50-150	Soil 50-150		
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1.2.2-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA-VI

See DV letter

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: M. Allen Date: 11/7/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA-VI (Cont'd) See DV Letter

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria. see DV letter

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: M. Allen Date: 11/12/14

Case:_____ SDG:_____

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup. See DV letter

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

_____

_____

_____

Validator: M. Allen Date: 4/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance. See DV letter

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: M. Allen Date: 6/27/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV letter

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check. see DV letter

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level See DV letter

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria.
Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____ See DV letter

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? See DV letter **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: M. Allen Date: 11/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-B See DV letter

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: M. Allen

Date: 4/17/14

Case:_____ SDG:_____

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____ see DV letter

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: M. Allen

Date: 11/17/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

See DV letter

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? Y N

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? Y N

Validator: M. Allen Date: 4/17/14

Case:_____ SDG:_____

See DV letter

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: M. Allen

Date: 10/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10). See DV letter

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: M. Allen

Date: 4/17/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10). see DV letter

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: M. Allen Date: 11/17/14

Case:_____ SDG:_____

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

See DV letter

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: M. Allen

Date: 11/17/14

APPENDIX D

SUPPORT DOCUMENTATION

NCBC DAVISVILLE
SDG N1822

SAMPLE IDENTIFICATION	MW02-10S-NWG-101014
COMPOUND	ISOPROPYLBENZENE
COMPOUND AREA	145131
INTERNAL STANDARD AMOUNT (ng)	250
VOLUME WATER PURGED (ml)	5
DILUTION FACTOR	1
INTERNAL STANDARD AREA	267117
AVERAGE RRF	1.929
ml to µl	1000
ng to µg	1000
=	14.08 µg/L

145131 x 250 ng x 1 x 1000ml x 1µg /267117 x 1.929 x 5ml X 1L x 1000ng

Data File: \\Avogadro\Organics\V10.I\141017.B\V8D7620.d
Report Date: 27-Oct-2014 13:43

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\Avogadro\Organics\V10.I\141017.B\V8D7620.d
Lab Smp Id: N1822-50B Client Smp ID: MW02-10S-NWG-101014
Inj Date : 17-OCT-2014 20:14
Operator : alm SRC: LIMS Inst ID: V10.i
Smp Info : 5ML,N1822-50B,,79554,
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\141017.B\v108260Gadd-6lvl.m
Meth Date : 27-Oct-2014 13:42 mscarpaci Quant Type: ISTD
Cal Date : 01-OCT-2014 12:09 Cal File: V8D7198.d
Als bottle: 100
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: OLM_VOA.sub
Target Version: 4.14
Processing Host: TARGET104

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
$ 36 Dibromofluoromethane	113	4.647	4.647	(0.887)	112757	57.3415	57
38 Cyclohexane	56	4.753	4.741	(0.907)	50087	10.4030	10(Q)
$ 42 1,2-Dichloroethane-d4	102	4.946	4.943	(0.944)	19518	52.0828	52
* 46 Fluorobenzene	96	5.239	5.239	(1.000)	323971	50.0000	
48 Methylcyclohexane	83	5.750	5.753	(1.098)	25007	7.95700	8.0(Q)
$ 58 Toluene-d8	98	6.718	6.718	(0.817)	352128	47.5316	48
* 68 Chlorobenzene-d5	117	8.226	8.226	(1.000)	267117	50.0000	
77 Isopropylbenzene	105	9.361	9.358	(1.138)	145131	14.0830	14
$ 79 Bromofluorobenzene	95	9.528	9.525	(1.158)	164462	50.9217	51
* 92 1,4-Dichlorobenzene-d4	152	10.727	10.724	(1.000)	168548	50.0000	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3638.D
Lab Smp Id: N1822-50C BN: 79558 Client Smp ID: MW02-10S-NWG-101014
Misc : | TPH Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 17:15 Operator: TM
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Oct 24 15:16:32 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Compound	R.T.	Response	Conc Units
Internal Standards			
11) I 5a-Androstane	6.79	11027776	40.000 ug/mL
System Monitoring Compounds			
2) S ortho-Terphenyl	6.32	28317331	91.812 ug/mL
Spiked Amount 100.000		Recovery =	91.81%
Target Compounds			
→ 4) H TPH C9 to C40	1.30	197176748	678.243 ug/mL ✓
Integration Range:		1.30 to 12.70 minutes	
Raw Range Area:		316414420	
Corrected Range Area (IS,SS):		277069312	
Instrument Blank Area (F1J3634):		79892564	

Corrected Range Area = Raw Range Area - Internal and Surrogate Area
Reported Area = Corrected Range Area - Instrument Blank Area

(f)=RT Delta > 1/2 Window (m)=manual int.

CF = 2.907 ES

$$\frac{197176748}{2.907\ ES} = 678.3\ ug/ml$$

Response Factor Report FID1

Method Path : O:\F1.I\QMETHODS\
Method File : TPH0717.M
Title : TPH, ETPH, DRO, Fuel ID, ORO
Last Update : Thu Jul 17 14:13:45 2014
Response Via : Initial Calibration

Calibration Files
5 =F1J3033.D 20 =F1J3034.D 50 =F1J3035.D
80 =F1J3036.D 100 =F1J3037.D 120 =F1J3038.D

		Compound	5	20	50	80	100	120	Avg		%RSD
1)	S	1-Chlorooctadeca							0.000		-1.00
2)	S	ortho-Terphenyl	2.830	3.103	2.910	3.255	3.307	3.086	3.084	E5	5.33
3)	H	DRO C10 to C28	2.842	2.831	2.599	3.089	3.059	2.824	2.875	E5	5.59
4)	H	TPH C9 to C36	2.898	2.856	2.622	3.123	3.088	2.856	2.907	E5	5.59
5)	H	Gasoline							0.000		-1.00
6)	H	Jet Fuel							0.000		-1.00
7)	H	Motor Oil/Other							0.000		-1.00
8)	H	Number 2 Fuel							0.000		-1.00
9)	H	Number 4 Fuel							0.000		-1.00
10)	H	Number 6 Fuel							0.000		-1.00
11)	I	5a-Androstane	----------ISTD----------								
12)	S	1-Chlorooctadeca							0.000		-1.00
13)	S	ortho-Terphenyl	0.939	1.011	1.065	1.097	1.063	1.071	1.050		4.86
14)	T	C9 Nonane	0.797	0.784	0.809	0.898	0.822	0.834	0.834		4.68
15)	TD	C10 Decane	0.815	0.807	0.837	0.927	0.853	0.863	0.861		4.85
16)	TD	C12 Dodecane	0.854	0.843	0.879	0.963	0.893	0.902	0.899		4.56
17)	TD	C14 Tetradecane	0.890	0.873	0.913	0.992	0.928	0.932	0.931		4.21
18)	TD	C16 Hexadecane	0.951	0.914	0.946	1.027	0.967	0.966	0.968		3.55
19)	TD	C18 Octadecane	0.940	0.919	0.950	1.033	0.979	0.970	0.972		3.69
20)	TD	C20 Eicosane	0.971	0.945	0.978	1.066	1.015	1.002	1.002		3.77
21)	TD	C22 Docosane	0.977	0.968	0.987	1.081	1.031	1.019	1.016		3.72
22)	TD	C24 Tetracosane	0.997	0.974	0.995	1.092	1.042	1.033	1.028		3.68
23)	TD	C26 Hexacosane	1.011	0.987	1.010	1.110	1.060	1.053	1.045		3.81
24)	TD	C28 Octacosane	1.024	0.993	1.016	1.119	1.067	1.062	1.054		3.85
25)	T	C30 Triacontane	1.017	1.006	1.033	1.138	1.083	1.080	1.069		4.26
26)	T	C32 Dotriaconta	0.986	0.987	1.021	1.123	1.066	1.065	1.051		4.63
27)	T	C36 Hexatriacon	1.229	1.028	1.057	1.162	1.095	1.096	1.113		5.57
28)	H	DRO C10 to C28	0.943	0.922	0.951	1.041	0.984	0.980	0.978		3.91
29)	H	TPH C8 to C40 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
30)	H	TPH C9 to C36 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
31)		----------							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

NCBC DAVISVILLE
SDG N1822

SAMPLE IDENTIFICATION	MW02-10S-NWG-101014
COMPOUND	NAPHTHALENE
COMPOUND AREA	51231
INTERNAL STANDARD AMOUNT (ng)	5
DILUTION FACTOR	1
INTERNAL STANDARD AREA	76397
AVERAGE RRF	1.274
SAMPLE VOLUME (L)	1
VOLUME EXTRACT (µl)	1000
VOLUME INJECTED (µl)	1
ng to µg	1000
CONCENTRATION =	2.6 µg/L

51231 x 5ng x 1000µl x 1µg x 1/(76397 x 1.274 x 1L x 1µl x 1000ng)

Data File: \\avogadro\organics\S6.I\141023.B\S6B9894.d
Report Date: 24-Oct-2014 12:49

Spectrum Analytical, Inc. RI Division

SIM-PAH

Data file : \\avogadro\organics\S6.I\141023.B\S6B9894.d
Lab Smp Id: N1822-50C Client Smp ID: MW02-10S-NWG-101014
Inj Date : 23-OCT-2014 11:30
Operator : TM SRC: LIMS Inst ID: S6.i
Smp Info : N1822-50C,,79550
Misc Info :
Comment :
Method : \\avogadro\organics\S6.I\141023.B\S6_pah_simHX.m
Meth Date : 24-Oct-2014 12:49 S6.i Quant Type: ISTD
Cal Date : 08-OCT-2014 17:54 Cal File: S6B9624.d
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Naphtalene.sub
Target Version: 4.14
Processing Host: TARGET102

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Factor
Vt	1000.000	Extract Volume (uL)
Vi	1.000	Injection Volume
Vo	1000.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 3 1,4-Dichlorobenzene-d4	152	3.881	3.881	(1.000)	26694	5.00000	(Q)
* 9 Naphthalene-d8	136	4.963	4.963	(1.000)	76397	5.00000	
10 Naphthalene	128	4.980	4.980	(1.003)	51231	2.63175	2.6(Q)
* 16 Acenaphthene-d10	164	6.403	6.403	(1.000)	46665	5.00000	
* 25 Phenanthrene-d10	188	7.612	7.612	(1.000)	160810	5.00000	
* 33 Chrysene-d12	240	9.778	9.771	(1.000)	142490	5.00000	
$ 37 Benzo(e)pyrene-d12	264	10.953	10.953	(0.986)	40590	1.73013	1.7
* 40 Perylene-d12	264	11.105	11.098	(1.000)	124856	5.00000	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\avogadro\organics\V4.i\141021.B\V4D08023.D
Report Date: 23-Oct-2014 08:15

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\avogadro\organics\V4.i\141021.B\V4D08023.D
Lab Smp Id: N1822-52B Client Smp ID: FD02-101014
Inj Date : 21-OCT-2014 16:18
Operator : WL SRC: LIMS Inst ID: V4.i
Smp Info : 5ML,N1822-52B,,79616
Misc Info :
Comment :
Method : \\avogadro\organics\V4.i\141021.B\v4GRO.m
Meth Date : 22-Oct-2014 14:59 wluo Quant Type: ESTD
Cal Date : 06-OCT-2014 12:52 Cal File: V4D07835.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (PPM)	CONCENTRATIONS FINAL (ug/L)
1	Gasoline Range Organics	10.795	9.115	1.680	129108003	1431.16 ✓	1400 (M)
$ 2	Bromofluorobenzene	10.126	10.138	-0.012	654953	19.2256	19 (M)

QC Flag Legend

M - Compound response manually integrated.

$\overline{CF} = 90212$

$\frac{129108003}{90212} = 1431 \text{ ug/L}$

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/06/2014 08:13**
Prep End Date: **10/17/2014 11:21** Prep Code: **TPH_W_PR** Prep Type: **SEPF/SW3510C** Prep Factor Units: **mL / mL**
Prep Batch ID: **79359** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): _H2SO4 | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: BOOP5448 | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: N/A | Start Time: N/A | Cycles/Hour 0 | Sonicator Tuned?N/A | Bath Temp1 (C): N/A | Therm ID1: N/A
End Time: N/A | BalanceID: N/A | Corr Fac: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79359	BatchQC		1000	1	OFW140805A	1			DMP	AMC			10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
LCS-79359	BatchQC		1000	1	OFW140805A	1	OFW140430A	1	DMP	AMC			10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
N1822-02B	MW03-02S-NWG-092	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-04B	MW03-15I-NWG-0929	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-04BMS	MW03-15I-NWG-0929	A	1000	1	OFW140805A	1	OFW140430A	1	DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-04BMSD	MW03-15I-NWG-0929	A	1000	1	OFW140805A	1	OFW140430A	1	DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-07B	MW03-04S-NWG-093	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-09B	FD01-093014	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-11B	MW03-17S-NWG-093	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-14C	RB01-100114	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-16C	MW03-05S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-18C	MW03-15S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-20C	MW02-08SA-NWG-10	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-23C	MW02-05S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD

Logbook ID: 50.0147-09/14

AC 10/17/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/06/2014 08:13**
Prep End Date: **10/17/2014 11:21** Prep Code: **TPH_W_PR** Prep Type: **SEPF/SW3510C** Prep Factor Units: **mL / mL**
Prep Batch ID: **79359** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DK494	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): _H2SO4	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: BOOP5448	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: N/A	Start Time: N/A	Cycles/Hour 0	Sonicator Tuned? N/A	Bath Temp1 (C): N/A	Therm ID1: N/A
	End Time: N/A		BalanceID: N/A	Corr Fac: N/A	Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
J1822-25C	MW03-17I-NWG-1002	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
J1822-27C	MW01-10S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
J1822-29C	MW01-12S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
J1822-32C	MW02-03S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD

nalisa M Caruso 10/17/2014 Devin M Pierel 10/17/2014
nalyst Reviewed Date Manager Reviewed Date

omments:

\ = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.014/-09/14

IAC 10/17/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/10/2014 14:10**
Prep End Date: **10/17/2014 14:56** Prep Code: **TPH_W_PR** Prep Type: **SEPF/SW3510C** Prep Factor Units: **mL / mL**
Prep Batch ID: **79475** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: N/A | Start Time: N/A End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?N/A BalanceID: N/A | Bath Temp1 (C): N/A Corr Fac: N/A | Therm ID1: N/A Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79475	BatchQC		1000	1	OFW140805A	1			DMP	AMC			10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
LCS-79475	BatchQC		1000	1	OFW140805A	1	OFW141007A	1	DMP	AMC			10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
LCSD-79475	BatchQC		1000	1	OFW140805A	1	OFW141007A	1	DMP	AMC			10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
N1822-35B	MW02-4SA-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-37B	MW03-16S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-40C	RB02-100814	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-42C	MW02-09S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-44C	MW02-11S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-47C	MW01-14S-NWG-100	A	1000	1	OFW140805A	1			DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-47CMS	MW01-14S-NWG-100	A	1000	1	OFW140805A	1	OFW141007A	1	DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-47CMSD	MW01-14S-NWG-100	A	1000	1	OFW140805A	1	OFW141007A	1	DMP	AMC	10/29/14	01	10/17/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD

Analisa M Caruso 10/17/2014 Analyst Reviewed Date
Devin M Pierel 10/17/2014 Manager Reviewed Date

Comments:
*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-09/14

JAC 10/17/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/17/2014 14:44**
Prep End Date: **10/20/2014 09:44** Prep Code: **TPH_W_PR** Prep Type: **SEPF/SW3510C** Prep Factor Units: **mL / mL**
Prep Batch ID: **79558** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): _H2SO4 | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: BOOP5448 | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: N/A | Start Time: N/A End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?N/A BalanceID: N/A | Bath Temp1 (C): N/A Corr Fac: N/A | Therm ID1: N/A Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79558	BatchQC		1000	1	OFW141016A	1			DMP	AMC			10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
LCS-79558	BatchQC		1000	1	OFW141016A	1	OFW141007A	1	DMP	AMC			10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
LCSD-79558	BatchQC		1000	1	OFW141016A	1	OFW141007A	1	DMP	AMC			10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
N1822-50C	MW02-10S-NWG-101	A	1000	1	OFW141016A	1			DMP	AMC	10/29/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1822-52C	FD02-101014	A	1000	1	OFW141016A	1			DMP	AMC	10/29/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1907-40B	RB01-101014	A	1000	1	OFW141016A	1			DMP	AMC	10/29/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1910-01ARE	MW-4	A	1000	1	OFW141016A	1			DMP	AMC	10/23/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD
N1915-01BRE	GZ-11	A	1000	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
~The prep HoldTime was exceeded by 1 days.																			
N1915-02BRE	GZ-12	A	1000	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
~The prep HoldTime was exceeded by 1 days.																			
N1915-03BRE	GZ-13	A	1000	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
~The prep HoldTime was exceeded by 1 days.																			
N1910-03ARE	MW-4-99	A	1000	1	OFW141016A	1					10/23/14	01	10/20/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1 DoD

Anatisa M Caruso 10/20/2014 — Analyst Reviewed / Date
Devin M Pierel 10/24/2014 — Manager Reviewed / Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-10/14

AC 10/20/2014

FORMER NCBC DAVISVILLE
WATER DATA
N1822

FRACTION	CHEMICAL	MW03-17S-NWG-093014	UNITS	FD01-093014	RPD	D
OV	CIS-1,2-DICHLOROETHENE	1.3	UG/L	1.3	0.00	0.00
OV	TRICHLOROETHENE	3.3	UG/L	3.7	11.43	0.40

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

FORMER NCBC DAVISVILLE
WATER DATA
N1822

FRACTION	CHEMICAL	MW02-10S-NWG-101014	UNITS	FD02-101014	RPD	D
OV	CYCLOHEXANE	10	UG/L	10	0.00	0.00
OV	ISOPROPYLBENZENE	14	UG/L	14	0.00	0.00
OV	METHYL CYCLOHEXANE	8	UG/L	8	0.00	0.00
PAH	NAPHTHALENE	2.6	UG/L	2.8	7.41	0.20
PET	GASOLINE RANGE ORGANICS	1300	UG/L	1400	7.41	100.00
PET	TPH (C09-C40)	0.68	MG/L	0.64	6.06	0.04

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 09/30/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	4.3 °C 3.0° 3.5°
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	09/30/2014
12. Time Received	09:07

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-01						H	
N1822-02	<2					H	
N1822-03	<2					H	
N1822-04	<2					H	
N1822-05	<2					H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Sample Condition Form

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson / Lee Ann Sinagoga, Tetra Tech Inc
661 Andersen Dr
Pittsburgh PA 15220
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 000.2123 WE01
Site Name: Fmr NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): KJalbut W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

N1822 G=Grab C=Composite

Lab Id:	Sample Id:	2014 Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOC	TPH-GRO	TPH-DRO	NAPHTHALENE	METALS	SVOC, PESTICIDE, PCBs		
						Containers:				Analyses:							
										List preservative code below:							
										2	2	–	–	4	–		
01	TB01-092914	9/29	1000	G	QC	4	–	–	–	2	2	–	–	–	– #29		
02	MW03-02S-NWG-092914	9/29	1340	G	GW	4	4	–	1	2	2	2	2	1	20		
03	MW03-02S-NWG-092914-F	9/29	1340	G	GW	–	–	–	1	–	–	–	–	1	–		"F"=field filtered
04	MW03-15I-NWG-092914	9/29	1407	G	GW	12	15	–	2	6	6	6	–	2	9		Lab QC volume
05	MW03-15I-NWG-092914-F	9/29	1407	G	GW	–	–	–	2	–	–	–	–	2	–		Lab QC volume
												KJalbut			9/29/14		
	Notes - Samples designated w/the "F" were filtered in the field																

QA/QC Reporting Notes:
Refer to lab subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walter Pryor		9.30.14	0800	4.3°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

www.spectrum-analytical.com JR 3.5°C 3.0°C

Revised Feb 2013

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CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
Tetra Tech Inc
Celeb Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O

P.O. No.: _____ RQN: _____

Project No.: 112G01813
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Jalkut W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 – – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

N1822 G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs	GRO (TPH)	DRO (TPH)	NAPHTHALENE	METALS	SVOC, PESTICIDES, PCBs
06	TB02-093014	9/30 2014	0900	~~EB~~ G	QC	4	–	–	–	2	2	–	–	–	–
07	MW03-04S-NW6-093014	9/30	1123	G	GW	4	2	–	1	2	2	2	2	1	–
08	MW03-04S-NW6-093014-F	9/30	~~1230~~ 1123	G	GW	–	–	–	1					1	
09	FD01-093014	9/30	0000	G	GW	4	5	–	1	2	2	2	–	1	3
10	FD01-093014-F	9/30	0000	G	GW	–	–	–	1	–	–	–	–	1	–
11	MW03-17S-NW6-093014	9/30	1230	G	GW	4	5	–	1	2	2	2	–	1	3
12	MW03-17S-NW6-093014-F	9/30	1230	G	GW	–	–	–	1	–	–	–	–	1	–

Note: "-F" denotes sample was filtered in the field

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to laboratory report

Relinquished by:	Received by:	Date:	Time:	Temp °C
Nate Pz		10-1-14	0715	3.9, 3.0°

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

www.spectrum-analytical.com JK

Revised Feb 2013

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
40 Tetra Tech Inc
661 Andersen Dr
Pitkburgh PA
Telephone #: 412 9217090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Talkot W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic
NB622 13	TB03-100114	10/1/2014	0800	G	QC	4	-	-	-
14	RB01-100114	10/1	0830	G	QC	4	5		1
15	RB01-100114-F	10/1	0830	G	QC	-	-	-	1
16	MW03-05S-NWG-100114	10/1	1056	G	GW	4	4	-	1
17	MW03-05S-NWG-100114-F	10/1	1056	G	GW	-	-	-	1
18	MW03-15S-NWG-100114	10/1	~~1433~~ 1230	G	GW	4	5	-	1
19	MW03-15S-NWG-100114-F	10/1	~~1433~~ 1230	G	GW	-	-	-	1
20	MW02-08Sa-NWG-100114	10/1	1433	G	GW	4	4	-	1
WSV 10/2/14	Note - "-F" indicates sample was filtered in the field								
21	MW02-08Sa-NWG-100114-F	10/1	1433	G	GW	-	-	-	1

List preservative code below: 2 2 - 4 - -

Analyses:

VOCs	GRO (TPH) MTBE-NAPH.	DRO (TPH) C-9 to C-40	METALS	NAPHTHALENE	SVOC PESTICIDE PCB		
2	2	1	1	1	1		
2	2	2	1	1	3		
-	-	-	1	-	-		
2	2	2	1	2	-		
-	-	-	1	-	-		
2	2	2	1	-	3		
-	-	-	1	-	-		
2	2	2	1	2	-		
-	-	-	1	-	-		

QA/QC Reporting Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: Refer to Lab Subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt R		10-1-14	1654	3.3°C IR
				2.1°C IR

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☑ Present ☑ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Stnd
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· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc.
Colel Anderson Dr
Pittsburgh PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pyja, C Fellows-Stanley

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 | 2 | - | - | 4 | - |

QA/QC Reporting Notes: Refer to lab subcontract

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC	TPH-GRO (CONFIRM-MA)	TPH-DRO (C9-C40)	NAPHTHALENE	METALS	SVOC PESTICIDES PCBs
NJ1822		2014													
22	TB04-100214	10/2	0800	G	QC	4	-	-	-	2	2	-	-	-	-
23	MW02-05S-NWG-100214	10/2	1128	G	GW	4	4	-	1	2	2	2	2	1	-
24	MW02-05S-NWG-100214-F	10/2	1128	G	GW	-	-	-	1	-	-	-	-	1	-
25	MW03-17I-NWG-100214	10/2	1148	G	GW	4	5	-	1	2	2	2	-	1	3
26	MW03-17I-NWG-100214-F	10/2	1148	G	GW	-	-	-	1	-	-	-	-	1	-
27	MW01-10S-NWG-100214	10/2	1455	G	GW	4	4	-	1	2	2	2	2	1	-
28	MW01-10S-NWG-100214-F	10/2	1455	G	GW	-	-	-	1	-	-	-	-	1	-
29	MW01-12S-NWG-100214	10/2	1521	G	GW	4	4	-	1	2	2	2	2	1	-
30	MW01-12S-NWG-100214-F	10/2	1521	G	GW	-	-	-	1	-	-	-	-	1	-

Note - "-F" denotes sample was filtered in the field — 10 jubert 10/2/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Re		10-3-14	7:30	3.2c°
				2.0°c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Special Handling:
TAT- Indicate Date Needed: Std
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- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc
661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000 2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 2 – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: RI Tetra Tech laboratory

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC, TPH GRO (MTBE-NAPHTH.)	VOC	TPH GRO (MTBE-NAPHTH.)	TPH DRO (C9-C40)	METALS	NAPHTHALENE
N1822		2014													
31	TB05-100314	10/3	0800	G	QC	3	–	–	–	3	–	–	–	–	–
32	MW02-03S-NW6-100314	10/3	1050	G	GW	4	4	–	1	–	2	2	2	1	2
33	MW02-03S-NW6-100314-F	10/3	1050	G	GW	–	–	–	1	–	–	–	–	1	–

Rjunkert 10/3/14

Note: "F" denotes the sample was filtered in the field

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walter Pryor		10-3-14	~~1615~~ 13:06	4.2°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 2 – – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

N1422 G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs: TPH-GRO (MTBE-NAPH.)	VOCs	GRO (TPH) (MTBE-NAPH.)	DRO (TPH) (C24-C40)	NAPHTHALENE	METALS	SVOCs, PESTICIDES, PCBs
34	TB06-100614	2014 10/6	0900	G	QC	3	–	–	–	3	–	–	–	–	–	–
35	MW02-45a-NWG-100614	10/6	1303	G	GW	4	4	1	1	1	2	2	2	2	1	–
36	MW02-45a-NWG-100614-F	10/6	1303	G	GW	–	–	–	1	–	–	–	–	–	1	–
37	MW03-16S-NWG-100614	10/6	1405	G	GW	4	5	–	1	–	2	2	2	–	1	3
38	MW03-16S-NWG-100614-F	10/6	1405	G	GW	–	–	–	1	–	–	–	–	–	1	–

Note: "-F" indicates the sample was filtered in the field

K Jalkut 10/6/14

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp °C
Kaylen Jalkut / Kaylen Jalkut		10/6/14	1630	3.8°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

FR

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CHAIN OF CUSTODY RECORD

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Special Handling:
TAT- Indicate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson (TetraTech)
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 920 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor, K Talkut

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 2 – – 4 –

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs, TPH-GRO	VOCs	GRO (MTBE-NAPHTHALENE) TPH-DRO	NAPHTHALENE	METALS	SVOCs, PESTICIDES, PCBs
N1822 39	TB07-100714	10/7/2014	0830	G	QC	3	–	–	–	3	–	–	–	–	–
40	RB02-100814	10/8	0900	G	QC	4	4	–	1	–	2	2	2	2	1
41	RB02-100814-F	10/8	0900	G	QC	–	–	–	1	–	–	–	–	–	1
42	MW02-09S-NW6-100814	10/8	0957	G	GW	4	4	–	1	–	2	2	2	2	1
43	MW02-09S-NW6-100814-F	10/8	0957	G	GW	–	–	–	1	–	–	–	–	–	1
44	MW02-11S-NW6-100814	10/8	1357	G	GW	4	4	–	1	–	2	2	2	2	1
45	MW02-11S-NW6-100814-F	10/8	1357	G	GW	–	–	–	1	–	–	–	–	–	1

Note - "-F" denotes the sample was filtered in the field

QA/QC Reporting Notes:
Apply to bb Subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

KTalkut 10/8/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt P		10-8-14	16:50	3.3c, 4.1c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc
6161 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): C Fellows-Stanley K Jalkut W. Payor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 2 2 – – –

QA/QC Reporting Notes: Refer to lab comment

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs, GRO (ANTHR.)	VOCs	TPH-GRO (ANTHR-NAPHTHALENE)	TPH DRO	NAPHTHALENE	METALS
NI822		2014													
46	TB08-100914	10/9	0830	G	QC	3	–	–	–	3	1	–	–	–	1
47	MW01-145-NWG-100914	10/9	1105	G	GW	12	12	–	2	–	6	6	6	6	2
48	MW01-145-NWG-100914-F	10/9	1105	G	GW	–	–	–	2	–	6	6	–	–	2
	~~MW01~~														

Lab QC volume
Lab QC volume

JJalkut 10/9/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
		10/10/14	7:22	3.8, 3.7

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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Special Handling:

TAT- Ind icate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
6601 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor, K. Jalkut

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 | 2 | 2 | – | – | 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

N1822 G=Grab C=Composite

	Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC, GRO (MTBE-NAPH.)	VOC	GRO(TPH)-MTBE-NAPHTHALENE DRO(TPH)(C9-C40)	NAPHTHALENE	METALS
49	01	T1309-101014	10/10/14	0800	G	QC	3	–	–	–	3	–	–	–	–
50	02	MW03-10S-NWG-101014	10/10/14	0950	G	GW	4	4	–	1		2	2	2	1
51	03	MW03-10S-NWG-101014-F	10/10/14	0950	G	GW	–	–	–	1	–	–	–	–	1
52	04	FD03-101014	10/10/14	0000	G	GW	4	4	–	1		2	2	2	1
53	05	FB0 FD03-101014-F	10/10/14	0000	G	GW	–	–	–	1	–	–	–	–	1

~~N1904~~ WSL 10/16/14

WSL 10/16/14

K Jalkut 10/10/14

Note - "-F" indicates sample was filtered in the field

Relinquished by:	Received by:	Date:	Time:	Temp°C
Nate B		10-10-14	14:00	0.4°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to lab scope sheet

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 10/01/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.9 °C 3.0c
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/01/2014
12. Time Received	07:15

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-07						H	
N1822-08	<2					H	
N1822-09	<2					H	
N1822-10	<2					H	
N1822-11	<2					H	
N1822-12	<2					H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air

UA = Unpreserved Aqueous — H = HCl

M = MeOH — E = Encore

N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By:	Page 01 of 00
Reviewed By:	Log-in Date 10/01/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker; Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	3.3 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/01/2014
12. Time Received	16:54

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-13						H	
N1822-14	<2					H	
N1822-15	<2					H	
N1822-16	<2					H	
N1822-17	<2					H	
N1822-18	<2					H	
N1822-19	<2					H	
N1822-20	<2					H	
N1822-21	<2					H	

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Sample Condition Form

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/03/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.2 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/03/2014
12. Time Received	07:30

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-22						H	
N1822-23	<2					H	
N1822-24	<2						
N1822-25	<2					H	
N1822-26	<2						
N1822-27	<2					H	
N1822-28	<2						
N1822-29	<2					H	
N1822-30	<2						

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air

UA = Unpreserved Aqueous — H = HCl

M = MeOH — E = Encore

N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Sample Condition Form

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KD	Log-in Date 10/03/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	4.2 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/03/2014
12. Time Received	13:06

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-31						H	
N1822-32	<2					H	
N1822-33	<2						

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air

UA = Unpreserved Aqueous — H = HCl

M = MeOH — E = Encore

N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 10/06/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.8 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/06/2014
12. Time Received	16:30

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-34						H	
N1822-35	<2					H	
N1822-36	<2					H	
N1822-37	<2					H	
N1822-38	<2					H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/08/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent
9. Cooler Temperature: 4.1 °C
10. Does information on TR/COCs and sample tags agree? Yes / No
11. Date Received at Laboratory: 10/08/2014
12. Time Received: 16:50

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-39						H	
N1822-40	<2					H	
N1822-41	<2						
N1822-42	<2					H	
N1822-43	<2						
N1822-44	<2					H	
N1822-45	<2						

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJ	Page 01 of 00
Reviewed By: KP	Log-in Date 10/10/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.8 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/10/2014
12. Time Received	07:22

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-46						H	
N1822-47	<2					H	
N1822-48	<2						

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air

UA = Unpreserved Aqueous — H = HCl

M = MeOH — E = Encore

N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Sample Condition Form

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/10/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	0.4 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/10/2014
12. Time Received	14:00

Sample Transfer	
Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-49						H	
N1822-50	<2					H	
N1822-51	<2						
N1822-52	<2					H	
N1822-53	<2						

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air

UA = Unpreserved Aqueous — H = HCl

M = MeOH — E = Encore

N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Report Date:
30-Oct-14 12:11

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1822
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1822-01	TB01-092914	Aqueous	29-Sep-14 10:00	30-Sep-14 07:38
N1822-02	MW03-02S-NWG-092914	Aqueous	29-Sep-14 13:40	30-Sep-14 07:38
N1822-03	MW03-02S-NWG-092914-F	Aqueous	29-Sep-14 13:40	30-Sep-14 07:38
N1822-04	MW03-15I-NWG-092914	Aqueous	29-Sep-14 14:07	30-Sep-14 07:38
N1822-05	MW03-15I-NWG-092914-F	Aqueous	29-Sep-14 14:07	30-Sep-14 07:38
N1822-06	TB02-093014	Aqueous	30-Sep-14 09:00	01-Oct-14 07:15
N1822-07	MW03-04S-NWG-093014	Aqueous	30-Sep-14 11:23	01-Oct-14 07:15
N1822-08	MW03-4S-NWG-093014-F	Aqueous	30-Sep-14 11:23	01-Oct-14 07:15
N1822-09	FD01-093014	Aqueous	30-Sep-14 00:00	01-Oct-14 07:15
N1822-10	FD01-093014-F	Aqueous	30-Sep-14 00:00	01-Oct-14 07:15
N1822-11	MW03-17S-NWG-093014	Aqueous	30-Sep-14 12:30	01-Oct-14 07:15
N1822-12	MW03-17S-NWG-093014-F	Aqueous	30-Sep-14 12:30	01-Oct-14 07:15
N1822-13	TB03-10014	Aqueous	01-Oct-14 08:00	01-Oct-14 16:54
N1822-14	RB01-100114	Aqueous	01-Oct-14 08:30	30-Sep-14 07:38
N1822-14	RB01-100114	Aqueous	01-Oct-14 08:30	01-Oct-14 16:54
N1822-15	RB01-100114-F	Aqueous	01-Oct-14 08:30	01-Oct-14 16:54
N1822-16	MW03-05S-NWG-100114	Aqueous	01-Oct-14 10:56	01-Oct-14 16:54
N1822-17	MW03-05S-NWG-100114-F	Aqueous	01-Oct-14 10:56	01-Oct-14 16:54
N1822-18	MW03-15S-NWG-100114	Aqueous	01-Oct-14 12:30	01-Oct-14 16:54
N1822-19	MW03-15S-NWG-100114-F	Aqueous	01-Oct-14 12:30	01-Oct-14 16:54
N1822-20	MW02-08SA-NWG-100114	Aqueous	01-Oct-14 14:33	01-Oct-14 16:54
N1822-21	MW02-08SA-NWG-100114-F	Aqueous	01-Oct-14 14:33	01-Oct-14 16:54
N1822-22	TB04-100214	Aqueous	02-Oct-14 08:00	03-Oct-14 07:30
N1822-23	MW02-05S-NWG-100214	Aqueous	02-Oct-14 11:28	03-Oct-14 07:30
N1822-24	MW02-05S-NWG-100214-F	Aqueous	02-Oct-14 11:28	03-Oct-14 07:30
N1822-25	MW03-17I-NWG-100214	Aqueous	02-Oct-14 11:48	03-Oct-14 07:30
N1822-26	MW03-17I-NWG-100214-F	Aqueous	02-Oct-14 11:48	03-Oct-14 07:30
N1822-27	MW01-10S-NWG-100214	Aqueous	02-Oct-14 14:55	03-Oct-14 07:30
N1822-28	MW01-10S-NWG-100214-F	Aqueous	02-Oct-14 14:55	03-Oct-14 07:30
N1822-29	MW01-12S-NWG-100214	Aqueous	02-Oct-14 15:21	03-Oct-14 07:30
N1822-30	MW01-12S-NWG-100214-F	Aqueous	02-Oct-14 15:21	03-Oct-14 07:30
N1822-31	TB05-100314	Aqueous	03-Oct-14 08:00	03-Oct-14 13:06
N1822-32	MW02-03S-NWG-100314	Aqueous	03-Oct-14 10:50	03-Oct-14 13:06
N1822-33	MW02-03S-NWG-100314-F	Aqueous	03-Oct-14 10:50	03-Oct-14 13:06
N1822-34	TB06-100614	Aqueous	06-Oct-14 09:00	06-Oct-14 16:30
N1822-35	MW02-4SA-NWG-100614	Aqueous	06-Oct-14 13:03	06-Oct-14 16:30
N1822-36	MW02-4SA-NWG-100614-F	Aqueous	06-Oct-14 13:03	06-Oct-14 16:30
N1822-37	MW03-16S-NWG-100614	Aqueous	06-Oct-14 14:05	06-Oct-14 16:30
N1822-38	MW03-16S-NWG-100614-F	Aqueous	06-Oct-14 14:05	06-Oct-14 16:30
N1822-39	TB07-100714	Aqueous	07-Oct-14 08:30	08-Oct-14 16:50
N1822-40	RB02-100814	Aqueous	08-Oct-14 09:00	08-Oct-14 16:50
N1822-41	RB02-100814-F	Aqueous	08-Oct-14 09:00	08-Oct-14 16:50
N1822-42	MW02-09S-NWG-100814	Aqueous	08-Oct-14 09:57	08-Oct-14 16:50
N1822-43	MW02-09S-NWG-100814-F	Aqueous	08-Oct-14 09:57	08-Oct-14 16:50
N1822-44	MW02-11S-NWG-100814	Aqueous	08-Oct-14 13:57	08-Oct-14 16:50
N1822-45	MW02-11S-NWG-100814-F	Aqueous	08-Oct-14 13:57	08-Oct-14 16:50
N1822-46	TB08-100914	Aqueous	09-Oct-14 08:30	10-Oct-14 07:22
N1822-47	MW01-14S-NWG-100914	Aqueous	09-Oct-14 11:05	10-Oct-14 07:22

Report Date:
30-Oct-14 12:11

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1822
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1822-48	MW01-14S-NWG-100914-F	Aqueous	09-Oct-14 11:05	10-Oct-14 07:22
N1822-49	TB09-101014	Aqueous	10-Oct-14 08:00	10-Oct-14 14:00
N1822-50	MW02-10S-NWG-101014	Aqueous	10-Oct-14 09:50	10-Oct-14 14:00
N1822-51	MW02-10S-NWG-101014-F	Aqueous	10-Oct-14 09:50	10-Oct-14 14:00
N1822-52	FD02-101014	Aqueous	10-Oct-14 00:00	10-Oct-14 14:00
N1822-53	FD02-101014-F	Aqueous	10-Oct-14 00:00	10-Oct-14 14:00

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 8260C, VOC by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V10
Instrument Type: GCMS-VOA

Description: HP7890A
Manufacturer: Agilent
Model: 7890A / 5975C
GC Column used: 30 m X 0.25 mm ID [1.40 um thickness] DB-624 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits with the following exceptions. Please note that most test procedures allow for several compounds outside of the QC limits for the LCS, although this may indicate a bias for this specific compound.

LCS-79443 in batch 79443, recovery is above criteria for 1,2-Dichloroethane at 132% with criteria of (70-130).

LCS-79488 in batch 79488, recovery is above criteria for 1,2-Dichloroethane at 133% with criteria of (70-130).

LCS-79554 in batch 79554, recovery is above criteria for Acetone at 151% with criteria of (40-140).

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW01-14S-NWG-100914 (N1822-47BMS), MW01-14S-NWG-100914 (N1822-47BMSD), MW03-15I-NWG-092914 (N1822-04AMS) and MW03-15I-NWG-092914 (N1822-04AMSD).

Percent recoveries were within the QC limits with the following

exceptions:

MW03-15I-NWG-092914 (N1822-04AMS), recovery is above criteria for 1,2-Dichloroethane at 133% with criteria of (70-130).

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

· M1 peak tailing or fronting
· M2 peak co-elution
· M3 rising or falling baseline
· M4 retention time shift
· M5 miscellaneous - under this category, the justification is explained
· M6 software did not integrate peak
· M7 partial peak integration

Manual integration was performed on the following:

VSTD00110S 1,2-Dichloroethane , Bromomethane due to M7

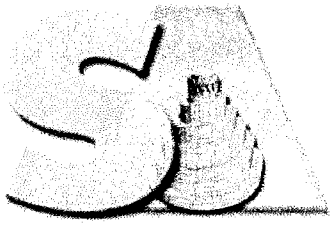
VSTD05010Z 2-Hexanone due to M6

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and

for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____10/29/2014_____



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

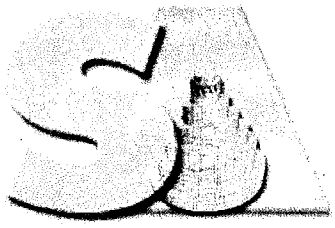
B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

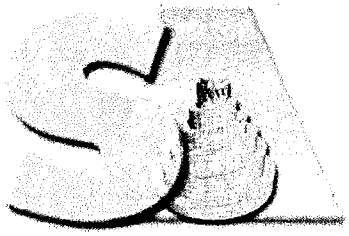


Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

2B - FORM II VOA-2

WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Level: (TRACE or LOW) LOW

	EPA SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
01	LCS-79419	112	103	96	104				0
02	LCSD-79419	112	103	96	107				0
03	MB-79419	113	103	96	96				0
04	TB01-092914	115	107	95	96				0
05	MW03-02S-NWG-092914	115	104	96	98				0
06	MW03-15I-NWG-092914	112	103	94	98				0
07	TB02-093014	111	101	96	96				0
08	MW03-04S-NWG-093014	115	100	95	96				0
09	FD01-093014	114	105	94	96				0
10	MW03-17S-NWG-093014	111	101	97	101				0
11	TB03-10014	110	103	93	95				0
12	RB01-100114	112	104	96	96				0
13	MW03-05S-NWG-100114	113	106	97	98				0
14	MW03-15S-NWG-100114	111	99	94	97				0
15	MW02-08SA-NWG-100114	112	108	95	98				0
16	TB04-100214	112	104	98	100				0
17	MW02-05S-NWG-100214	115	115	95	95				0
18	MW03-17I-NWG-100214	114	107	97	100				0
19	LCS-79443	113	104	95	106				0
20	MB-79443	112	110	95	100				0
21	MW01-10S-NWG-100214	111	106	94	99				0

		QC LIMITS
VDMC1	(DBFM) Dibromofluoromethane	(85-115)
VDMC2	(DCE) =1,2-Dichloroethane-d4	(70-120)
VDMC3	(TOL) =Toluene-d8	(85-120)
VDMC4	(BFB) =Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

som14.10.02.1616

SW846

2B - FORM II VOA-2

WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Level: (TRACE or LOW) LOW

	EPA SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
22	MW01-12S-NWG-100214	111	109	96	97				0
23	MW03-15I-NWG-092914	115	107	95	107				0
24	MW03-15I-NWG-092914	115	103	93	103				0
25	LCS-79488	114	112	93	109				0
26	LCSD-79488	115	102	94	106				0
27	MB-79488	114	106	96	100				0
28	TB05-100314	109	109	93	98				0
29	TB06-100614	112	108	95	98				0
30	LCS-79554	107	103	93	101				0
31	LCSD-79554	109	100	94	104				0
32	MB-79554	106	106	94	98				0
33	MW02-4SA-NWG-100614	107	105	105	89				0
34	MW03-16S-NWG-100614	109	91	94	96				0
35	TB07-100714	113	107	92	100				0
36	RB02-100814	112	109	95	100				0
37	MW02-09S-NWG-100814	113	102	96	101				0
38	MW02-11S-NWG-100814	113	105	93	98				0
39	TB08-100914	112	108	92	98				0
40	MW01-14S-NWG-100914	110	102	93	97				0
41	TB09-101014	112	104	94	98				0
42	MW02-10S-NWG-101014	115	104	95	102				0
43	FD02-101014	109	102	93	99				0

		QC LIMITS
VDMC1	(DBFM) Dibromofluoromethane	(85-115)
VDMC2	(DCE) =1,2-Dichloroethane-d4	(70-120)
VDMC3	(TOL) =Toluene-d8	(85-120)
VDMC4	(BFB) =Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

som14.10.02.1616

SW846

2B - FORM II VOA-2

WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Level: (TRACE or LOW) LOW

	EPA SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
44	LCS-79642	99	103	98	98				0
45	LCSD-79642	98	109	97	99				0
46	MB-79642	99	105	99	92				0
47	MW01-14S-NWG -100914	100	111	99	102				0
48	MW01-14S-NWG -100914	98	101	99	98				0

		QC LIMITS
VDMC1	(DBFM) Dibromofluoromethane	(85-115)
VDMC2	(DCE) =1,2-Dichloroethane-d4	(70-120)
VDMC3	(TOL) =Toluene-d8	(85-120)
VDMC4	(BFB) =Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

som14.10.02.1616

SW846

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####): VSTD05010I Date Analyzed: 10/08/2014

Lab File ID (Standard): V8D7434.D Time Analyzed: 21:28

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	349345		5.239		272200		8.223		166428		10.725	
	UPPER LIMIT	698690		5.739		544400		8.723		332856		11.225	
	LOWER LIMIT	174673		4.739		136100		7.723		83214		10.225	
	EPA SAMPLE NO.												
01	LCS-79419	359384		5.239		281341		8.226		169212		10.728	
02	LCSD-79419	368388		5.239		284268		8.226		170611		10.728	
03	MB-79419	345211		5.239		266976		8.226		135789		10.728	
04	TB01-092914	332002		5.239		262119		8.229		135033		10.728	
05	MW03-02S-NWG-092914	331895		5.239		260726		8.226		133926		10.728	
06	MW03-15I-NWG-092914	321957		5.239		251236		8.226		123210		10.728	
07	TB02-093014	318473		5.239		246693		8.226		120251		10.728	
08	MW03-04S-NWG-093014	316076		5.239		246397		8.226		115880		10.728	
09	FD01-093014	307840		5.239		247259		8.226		120145		10.728	
10	MW03-17S-NWG-093014	310948		5.239		241548		8.226		116804		10.728	
11	TB03-10014	306635		5.239		242617		8.226		120442		10.728	
12	RB01-100114	308292		5.239		240951		8.226		119102		10.728	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####): VSTD05010I Date Analyzed: 10/08/2014

Lab File ID (Standard): V8D7434.D Time Analyzed: 21:28

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	349345		5.239		272200		8.223		166428		10.725	
	UPPER LIMIT	698690		5.739		544400		8.723		332856		11.225	
	LOWER LIMIT	174673		4.739		136100		7.723		83214		10.225	
	EPA SAMPLE NO.												
13	MW03-05S-NWG-100114	305619		5.239		239930		8.226		117990		10.725	
14	MW03-15S-NWG-100114	308415		5.239		241432		8.223		119543		10.728	
15	MW02-08SA-NWG-100114	292835		5.239		231251		8.226		121287		10.728	
16	TB04-100214	298831		5.239		230023		8.226		118453		10.728	
17	MW02-05S-NWG-100214	301901		5.239		244695		8.226		123043		10.728	
18	MW03-17I-NWG-100214	301295		5.239		234661		8.226		121013		10.725	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

som14.10.02.1616

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####): VSTD05010J Date Analyzed: 10/09/2014

Lab File ID (Standard): V8D7457.D Time Analyzed: 9:30

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	331771		5.239		257464		8.226		159497		10.728	
	UPPER LIMIT	663542		5.739		514928		8.726		318994		11.228	
	LOWER LIMIT	165886		4.739		128732		7.726		79749		10.228	
	EPA SAMPLE NO.												
01	LCS-79443	345391		5.236		272185		8.226		162725		10.728	
02	MB-79443	322152		5.239		250963		8.226		127065		10.728	
03	MW01-10S-NWG-100214	310485		5.239		246289		8.230		132154		10.728	
04	MW01-12S-NWG-100214	308027		5.239		242523		8.226		124087		10.728	
05	MW03-15I-NWG-092914	340172		5.239		272651		8.226		167997		10.725	
06	MW03-15I-NWG-092914	355561		5.239		284272		8.226		167945		10.728	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

som14.10.02.1616

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####): VSTD05010L Date Analyzed: 10/14/2014

Lab File ID (Standard): V8D7511.D Time Analyzed: 8:42

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	324117		5.239		263957		8.226		163798		10.728	
	UPPER LIMIT	648234		5.739		527914		8.726		327596		11.228	
	LOWER LIMIT	162059		4.739		131979		7.726		81899		10.228	
	EPA SAMPLE NO.												
01	LCS-79488	341910		5.239		268756		8.226		165773		10.728	
02	LCSD-79488	361026		5.239		289893		8.226		175433		10.725	
03	MB-79488	336177		5.239		265873		8.230		137684		10.728	
04	TB05-100314	304994		5.239		250928		8.230		127222		10.728	
05	TB06-100614	303020		5.239		246716		8.226		123560		10.728	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####): VSTD050100 Date Analyzed: 10/17/2014

Lab File ID (Standard): V8D7602.D Time Analyzed: 10:11

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	428828		5.239		351653		8.226		204267		10.728	
	UPPER LIMIT	857656		5.739		703306		8.726		408534		11.228	
	LOWER LIMIT	214414		4.739		175827		7.726		102134		10.228	
	EPA SAMPLE NO.												
01	LCS-79554	447922		5.239		361966		8.226		209515		10.725	
02	LCSD-79554	453771		5.239		360582		8.226		207135		10.728	
03	MB-79554	421765		5.236		336913		8.226		173366		10.731	
04	MW02-4SA-NWG -100614	419482		5.243		296122		8.230		134968		10.728	
05	MW03-16S-NWG -100614	739124		5.236		600784		8.226		305669		10.728	
06	TB07-100714	359531		5.243		293028		8.226		150103		10.728	
07	RB02-100814	348271		5.239		283565		8.226		148535		10.731	
08	MW02-09S-NWG -100814	346291		5.239		273813		8.226		133261		10.731	
09	MW02-11S-NWG -100814	342835		5.239		286726		8.226		143990		10.728	
10	TB08-100914	339500		5.239		276547		8.226		138018		10.728	
11	MW01-14S-NWG -100914	327704		5.239		270440		8.226		137236		10.728	
12	TB09-101014	324569		5.236		269024		8.226		132459		10.728	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####): VSTD05010O Date Analyzed: 10/17/2014

Lab File ID (Standard): V8D7602.D Time Analyzed: 10:11

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	428828		5.239		351653		8.226		204267		10.728	
	UPPER LIMIT	857656		5.739		703306		8.726		408534		11.228	
	LOWER LIMIT	214414		4.739		175827		7.726		102134		10.228	
	EPA SAMPLE NO.												
13	MW02-10S-NWG -101014	323971		5.239		267117		8.226		168548		10.728	
14	FD02-101014	389053		5.239		314964		8.226		181356		10.728	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/22/2014 10/22/2014

EPA Sample No.(VSTD#####): VSTD05010S Date Analyzed: 10/22/2014

Lab File ID (Standard): V8D7702.D Time Analyzed: 15:03

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	335422		5.239		293151		8.226		178101		10.728	
	UPPER LIMIT	670844		5.739		586302		8.726		356202		11.228	
	LOWER LIMIT	167711		4.739		146576		7.726		89051		10.228	
	EPA SAMPLE NO.												
01	LCS-79642	372488		5.239		328166		8.226		197544		10.728	
02	LCSD-79642	381998		5.242		329503		8.226		197138		10.728	
03	MB-79642	340151		5.236		301123		8.223		157862		10.728	
04	MW01-14S-NWG -100914	337439		5.239		298832		8.226		184920		10.728	
05	MW01-14S-NWG -100914	350058		5.239		305717		8.223		182058		10.725	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

som14.10.02.1616

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10Z

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7190.D BFB Injection Date: 10/01/2014

Instrument ID: V10 BFB Injection Time: 7:22

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	32.6
75	30.0 - 80.0% of mass 95	61.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.3 (0.4)1
174	50.0 -120% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.8)1
176	95.0 - 101% of mass 174	79.9 (98.1)1
177	5.0 - 9.0% of mass 176	5.5 (6.9)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010Z	VSTD05010Z	V8D7192.D	10/01/2014	9:01
02	VSTD02010Z	VSTD02010Z	V8D7193.D	10/01/2014	9:32
03	VSTD00510Z	VSTD00510Z	V8D7194.D	10/01/2014	10:03
04	VSTD00110Z	VSTD00110Z	V8D7196.D	10/01/2014	11:06
05	VSTD20010Z	VSTD20010Z	V8D7197.D	10/01/2014	11:37
06	VSTD10010Z	VSTD10010Z	V8D7198.D	10/01/2014	12:09
07	VICV05010Z	VICV05010Z	V8D7199.D	10/01/2014	12:40

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date(s): 10/01/2014 10/01/2014

Heated Purge: (Y/N) N Calibration Times: 9:01 12:09

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7194.D RRF020 = V8D7193.D RRF050 = V8D7192.D RRF100 = V8D7198.D RRF200 = V8D7197.D
RRF001 = V8D7196.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.325	0.323	0.332	0.296	0.312	0.324					0.319	4.1
Chloromethane	0.450	0.511	0.448	0.436	0.459	0.617					0.487	14.1
Vinyl chloride	0.408	0.441	0.409	0.373	0.391	0.466					0.415	8.1
Bromomethane	0.165	0.142	0.155	0.138	0.127	0.179					0.151	12.7
Chloroethane	0.222	0.248	0.222	0.198	0.208	0.256					0.226	10.0
Trichlorofluoromethane	0.618	0.634	0.638	0.562	0.585	0.637					0.612	5.2
1,1-Dichloroethene	0.289	0.304	0.272	0.260	0.266	0.348					0.290	11.3
Acetone	0.041	0.037	0.035	0.034	0.038						0.037	7.0
Carbon disulfide	0.866	0.941	0.865	0.796	0.823	1.008					0.883	8.9
Methylene chloride	0.309	0.324	0.295	0.274	0.285	0.338					0.304	7.9
trans-1,2-Dichloroethene	0.305	0.320	0.301	0.276	0.285	0.302					0.298	5.2
Methyl tert-butyl ether	1.164	1.286	1.162	1.129	1.186	1.233					1.193	4.8
1,1-Dichloroethane	0.735	0.821	0.727	0.676	0.700	0.803					0.744	7.7
2-Butanone	0.030	0.038	0.033	0.036	0.039						0.035	10.4
cis-1,2-Dichloroethene	0.334	0.354	0.329	0.302	0.309	0.360					0.331	7.0
Bromochloromethane	0.160	0.176	0.157	0.136	0.131	0.173					0.156	12.0
Chloroform	0.738	0.772	0.713	0.663	0.694	0.715					0.716	5.2
1,1,1-Trichloroethane	0.682	0.814	0.731	0.674	0.712	0.758					0.728	7.2
Carbon tetrachloride	0.602	0.673	0.626	0.578	0.612	0.648					0.623	5.4
1,2-Dichloroethane	0.765	0.827	0.776	0.741	0.769	0.806					0.781	4.0
Benzene	1.169	1.261	1.166	1.068	1.112	1.208					1.164	5.9
Trichloroethene	0.290	0.340	0.306	0.280	0.294	0.361					0.312	10.2
1,2-Dichloropropane	0.361	0.392	0.362	0.330	0.338	0.379					0.360	6.5
Bromodichloromethane	0.550	0.628	0.590	0.538	0.564	0.581					0.575	5.6
cis-1,3-Dichloropropene	0.518	0.608	0.571	0.538	0.563	0.465					0.544	9.1
4-Methyl-2-pentanone	0.510	0.521	0.450	0.532	0.545						0.512	7.2
Toluene	1.181	1.364	1.262	1.170	1.223	1.301					1.250	5.9

som14.10.02.1616 Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only SW846

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date(s): 10/01/2014 10/01/2014

Heated Purge: (Y/N) N Calibration Times: 9:01 12:09

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7194.D RRF020 = V8D7193.D RRF050 = V8D7192.D RRF100 = V8D7198.D RRF200 = V8D7197.D
RRF001 = V8D7196.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					$\overline{RRF}$	% RSD
trans-1,3-Dichloropropene	0.563	0.640	0.597	0.565	0.592	0.543					0.583	5.9
1,1,2-Trichloroethane	0.290	0.306	0.276	0.262	0.273	0.311					0.286	6.7
Tetrachloroethene	0.390	0.423	0.387	0.358	0.365	0.400					0.387	6.1
2-Hexanone	0.421	0.455	0.442	0.502	0.513						0.467	8.5
Dibromochloromethane	0.453	0.563	0.539	0.503	0.519	0.452					0.505	8.9
1,2-Dibromoethane	0.423	0.457	0.427	0.410	0.415	0.439					0.429	4.0
Chlorobenzene	1.102	1.174	1.092	1.010	1.015	1.111					1.084	5.8
Ethylbenzene	0.547	0.630	0.583	0.539	0.550	0.563					0.569	5.9
Xylene (Total)	0.689	0.775	0.719	0.657	0.668	0.662					0.695	6.5
Styrene	1.090	1.268	1.203	1.105	1.130	1.108					1.151	6.1
Bromoform	0.315	0.384	0.369	0.367	0.385	0.344					0.361	7.4
Isopropylbenzene	1.923	2.143	1.956	1.820	1.843	1.889					1.929	6.0
1,1,2,2-Tetrachloroethane	0.841	0.955	0.886	0.843	0.820	0.915					0.877	5.9
1,3-Dichlorobenzene	1.499	1.709	1.605	1.406	1.362	1.765					1.558	10.5
1,4-Dichlorobenzene	1.661	1.811	1.656	1.456	1.395	1.761					1.624	10.2
1,2-Dichlorobenzene	1.550	1.693	1.539	1.361	1.305	1.534					1.497	9.4
1,2-Dibromo-3-chloropropane	0.231	0.235	0.217	0.226	0.226	0.236					0.229	3.1
1,2,4-Trichlorobenzene	1.067	1.190	1.108	0.993	0.966	1.051					1.062	7.6
1,2,3-Trichlorobenzene	1.053	1.081	1.008	0.925	0.897	0.997					0.994	7.2
1,1,2-Trichloro-1,2,2-trifluoroe	0.331	0.330	0.332	0.307	0.322	0.335					0.326	3.2
Cyclohexane	0.750	0.753	0.717	0.668	0.704	0.867					0.743	9.2
Methyl acetate	0.457	0.449	0.416	0.469	0.484	0.646					0.487	16.7
Methylcyclohexane	0.476	0.504	0.476	0.445	0.467	0.542					0.485	7.0

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date(s): 10/01/2014 10/01/2014

Heated Purge: (Y/N) N Calibration Times: 9:01 12:09

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7194.D RRF020 = V8D7193.D RRF050 = V8D7192.D RRF100 = V8D7198.D RRF200 = V8D7197.D

RRF001 = V8D7196.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					$\overline{RRF}$	% RSD
Dibromofluoromethane	0.305	0.303	0.304	0.301	0.305						0.303	0.6
1,2-Dichloroethane-d4	0.058	0.057	0.061	0.055	0.058						0.058	3.8
Toluene-d8	1.420	1.383	1.365	1.384	1.382						1.387	1.4
Bromofluorobenzene	0.595	0.599	0.601	0.620	0.608						0.605	1.6

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/01/2014 Time: 12:40

Lab File ID: V8D7199.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VICV05010Z Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	$\overline{RRF}$	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.319	0.328	0.100	2.8	20.0
Chloromethane	0.487	0.467	0.100	-4.2	20.0
Vinyl chloride	0.415	0.398	0.100	-3.9	20.0
Bromomethane	0.151	0.139	0.100	-7.6	20.0
Chloroethane	0.226	0.214	0.100	-5.0	20.0
Trichlorofluoromethane	0.612	0.603	0.100	-1.5	20.0
1,1-Dichloroethene	0.290	0.277	0.100	-4.4	20.0
Acetone	0.037	0.043	0.100	15.5	20.0
Carbon disulfide	0.883	0.861	0.100	-2.6	20.0
Methylene chloride	0.304	0.300	0.100	-1.3	20.0
trans-1,2-Dichloroethene	0.298	0.295	0.100	-1.1	20.0
Methyl tert-butyl ether	1.193	1.187	0.100	-0.6	20.0
1,1-Dichloroethane	0.744	0.726	0.200	-2.4	20.0
2-Butanone	0.035	0.036	0.100	1.9	20.0
cis-1,2-Dichloroethene	0.331	0.319	0.100	-3.7	20.0
Bromochloromethane	0.156	0.155	0.100	-0.3	20.0
Chloroform	0.716	0.710	0.200	-0.8	20.0
1,1,1-Trichloroethane	0.728	0.721	0.100	-1.0	20.0
Carbon tetrachloride	0.623	0.619	0.100	-0.7	20.0
1,2-Dichloroethane	0.781	0.789	0.100	1.1	20.0
Benzene	1.164	1.145	0.500	-1.7	20.0
Trichloroethene	0.312	0.305	0.200	-2.1	20.0
1,2-Dichloropropane	0.360	0.352	0.100	-2.2	20.0
Bromodichloromethane	0.575	0.565	0.200	-1.8	20.0
cis-1,3-Dichloropropene	0.544	0.563	0.200	3.5	20.0
4-Methyl-2-pentanone	0.512	0.513	0.100	0.3	20.0
Toluene	1.250	1.243	0.400	-0.6	20.0
trans-1,3-Dichloropropene	0.583	0.600	0.100	2.9	20.0
1,1,2-Trichloroethane	0.286	0.277	0.100	-3.4	20.0
Tetrachloroethene	0.387	0.386	0.200	-0.3	20.0
2-Hexanone	0.467	0.513	0.100	9.9	20.0
Dibromochloromethane	0.505	0.526	0.100	4.1	20.0
1,2-Dibromoethane	0.429	0.430	0.100	0.4	20.0
Chlorobenzene	1.084	1.085	0.500	0.1	20.0
Ethylbenzene	0.569	0.567	0.100	-0.2	20.0
Xylene (Total)	0.695	0.693	0.100	-0.2	20.0
Styrene	1.151	1.171	0.300	1.7	20.0
Bromoform	0.361	0.366	0.100	1.5	20.0
Isopropylbenzene	1.929	1.920	0.100	-0.5	20.0
1,1,2,2-Tetrachloroethane	0.877	0.898	0.300	2.4	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/01/2014 Time: 12:40

Lab File ID: V8D7199.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VICV05010Z Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.558	1.517	0.600	-2.6	20.0
1,4-Dichlorobenzene	1.624	1.589	0.500	-2.1	20.0
1,2-Dichlorobenzene	1.497	1.454	0.400	-2.9	20.0
1,2-Dibromo-3-chloropropane	0.229	0.231	0.050	1.1	20.0
1,2,4-Trichlorobenzene	1.062	1.059	0.200	-0.3	20.0
1,2,3-Trichlorobenzene	0.994	0.989	0.100	-0.5	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.326	0.336	0.100	3.1	20.0
Cyclohexane	0.743	0.724	0.100	-2.6	20.0
Methyl acetate	0.487	0.472	0.100	-3.0	20.0
Methylcyclohexane	0.485	0.481	0.100	-0.8	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/01/2014 Time: 12:40

Lab File ID: V8D7199.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VICV05010Z Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	$\overline{RRF}$	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.303	0.308	0.100	1.6	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.100	4.5	20.0
Toluene-d8	1.387	1.388	0.100	0.1	20.0
Bromofluorobenzene	0.605	0.592	0.100	-2.1	20.0

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10I

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7432.D BFB Injection Date: 10/08/2014

Instrument ID: V10 BFB Injection Time: 20:26

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.2
75	30.0 - 80.0% of mass 95	65.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.7 (1.0)1
174	50.0 -120% of mass 95	73.7
175	5.0 - 9.0% of mass 174	5.5 (7.4)1
176	95.0 - 101% of mass 174	70.1 (95.2)1
177	5.0 - 9.0% of mass 176	4.6 (6.5)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010I	VSTD05010I	V8D7434.D	10/08/2014	21:28
02	LCS-79419	LCS-79419	V8D7435.D	10/08/2014	22:00
03	LCSD-79419	LCSD-79419	V8D7436.D	10/08/2014	22:31
04	MB-79419	MB-79419	V8D7438.D	10/08/2014	23:33
05	TB01-092914	N1822-01A	V8D7439.D	10/09/2014	0:04
06	MW03-02S-NWG-092914	N1822-02A	V8D7440.D	10/09/2014	0:35
07	MW03-15I-NWG-092914	N1822-04A	V8D7441.D	10/09/2014	1:06
08	TB02-093014	N1822-06A	V8D7442.D	10/09/2014	1:37
09	MW03-04S-NWG-093014	N1822-07A	V8D7443.D	10/09/2014	2:08
10	FD01-093014	N1822-09A	V8D7444.D	10/09/2014	2:39
11	MW03-17S-NWG-093014	N1822-11A	V8D7445.D	10/09/2014	3:09
12	TB03-10014	N1822-13A	V8D7446.D	10/09/2014	3:40
13	RB01-100114	N1822-14B	V8D7447.D	10/09/2014	4:11
14	MW03-05S-NWG-100114	N1822-16B	V8D7448.D	10/09/2014	4:42
15	MW03-15S-NWG-100114	N1822-18B	V8D7449.D	10/09/2014	5:12
16	MW02-08SA-NWG-100114	N1822-20B	V8D7450.D	10/09/2014	5:43
17	TB04-100214	N1822-22A	V8D7451.D	10/09/2014	6:14

5A - FORM V VOA

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.

BFB10I

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7432.D BFB Injection Date: 10/08/2014

Instrument ID: V10 BFB Injection Time: 20:26

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.2
75	30.0 - 80.0% of mass 95	65.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.7 (1.0)1
174	50.0 -120% of mass 95	73.7
175	5.0 - 9.0% of mass 174	5.5 (7.4)1
176	95.0 - 101% of mass 174	70.1 (95.2)1
177	5.0 - 9.0% of mass 176	4.6 (6.5)2

1 - Value is % mass 174 2 - Value is % mass 176

18	MW02-05S-NWG-100214	N1822-23B	V8D7452.D	10/09/2014	6:45
19	MW03-17I-NWG-100214	N1822-25B	V8D7453.D	10/09/2014	7:17

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/08/2014 Time: 21:28

Lab File ID: V8D7434.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010I Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.319	0.369	0.100	15.9	20.0
Chloromethane	0.487	0.502	0.100	3.1	20.0
Vinyl chloride	0.415	0.422	0.100	1.8	20.0
Bromomethane	0.151	0.118	0.100	-21.9	20.0
Chloroethane	0.226	0.231	0.100	2.2	20.0
Trichlorofluoromethane	0.612	0.835	0.100	36.3	20.0
1,1-Dichloroethene	0.290	0.283	0.100	-2.2	20.0
Acetone	0.037	0.035	0.100	-6.1	20.0
Carbon disulfide	0.883	0.849	0.100	-3.9	20.0
Methylene chloride	0.304	0.304	0.100	-0.1	20.0
trans-1,2-Dichloroethene	0.298	0.301	0.100	0.8	20.0
Methyl tert-butyl ether	1.193	1.159	0.100	-2.8	20.0
1,1-Dichloroethane	0.744	0.764	0.200	2.7	20.0
2-Butanone	0.035	0.036	0.100	2.9	20.0
cis-1,2-Dichloroethene	0.331	0.323	0.100	-2.7	20.0
Bromochloromethane	0.156	0.166	0.100	6.7	20.0
Chloroform	0.716	0.820	0.200	14.6	20.0
1,1,1-Trichloroethane	0.728	0.828	0.100	13.7	20.0
Carbon tetrachloride	0.623	0.719	0.100	15.4	20.0
1,2-Dichloroethane	0.781	0.957	0.100	22.6	20.0
Benzene	1.164	1.154	0.500	-0.9	20.0
Trichloroethene	0.312	0.320	0.200	2.8	20.0
1,2-Dichloropropane	0.360	0.355	0.100	-1.4	20.0
Bromodichloromethane	0.575	0.628	0.200	9.1	20.0
cis-1,3-Dichloropropene	0.544	0.530	0.200	-2.5	20.0
4-Methyl-2-pentanone	0.512	0.526	0.100	2.8	20.0
Toluene	1.250	1.274	0.400	1.9	20.0
trans-1,3-Dichloropropene	0.583	0.575	0.100	-1.4	20.0
1,1,2-Trichloroethane	0.286	0.296	0.100	3.4	20.0
Tetrachloroethene	0.387	0.371	0.200	-4.2	20.0
2-Hexanone	0.467	0.447	0.100	-4.1	20.0
Dibromochloromethane	0.505	0.528	0.100	4.5	20.0
1,2-Dibromoethane	0.429	0.434	0.100	1.4	20.0
Chlorobenzene	1.084	1.065	0.500	-1.7	20.0
Ethylbenzene	0.569	0.561	0.100	-1.3	20.0
Xylene (Total)	0.695	0.695	0.100	0.0	20.0
Styrene	1.151	1.161	0.300	0.9	20.0
Bromoform	0.361	0.342	0.100	-5.0	20.0
Isopropylbenzene	1.929	1.958	0.100	1.5	20.0
1,1,2,2-Tetrachloroethane	0.877	0.855	0.300	-2.5	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/08/2014 Time: 21:28

Lab File ID: V8D7434.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010I Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.558	1.475	0.600	-5.3	20.0
1,4-Dichlorobenzene	1.624	1.520	0.500	-6.4	20.0
1,2-Dichlorobenzene	1.497	1.448	0.400	-3.3	20.0
1,2-Dibromo-3-chloropropane	0.229	0.231	0.050	0.9	20.0
1,2,4-Trichlorobenzene	1.062	0.943	0.200	-11.3	20.0
1,2,3-Trichlorobenzene	0.994	0.893	0.100	-10.1	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.326	0.359	0.100	10.1	20.0
Cyclohexane	0.743	0.685	0.100	-7.8	20.0
Methyl acetate	0.487	0.534	0.100	9.7	20.0
Methylcyclohexane	0.485	0.442	0.100	-9.0	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/08/2014 Time: 21:28

Lab File ID: V8D7434.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010I Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.303	0.339	0.100	11.8	20.0
1,2-Dichloroethane-d4	0.058	0.059	0.100	1.7	20.0
Toluene-d8	1.387	1.309	0.100	-5.6	20.0
Bromofluorobenzene	0.605	0.638	0.100	5.5	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79419

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7438.D Lab Sample ID: MB-79419

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/08/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 23:33

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79419	LCS-79419	V8D7435.D	22:00
02	LCSD-79419	LCSD-79419	V8D7436.D	22:31
03	TB01-092914	N1822-01A	V8D7439.D	0:04
04	MW03-02S-NWG-092914	N1822-02A	V8D7440.D	0:35
05	MW03-15I-NWG-092914	N1822-04A	V8D7441.D	1:06
06	TB02-093014	N1822-06A	V8D7442.D	1:37
07	MW03-04S-NWG-093014	N1822-07A	V8D7443.D	2:08
08	FD01-093014	N1822-09A	V8D7444.D	2:39
09	MW03-17S-NWG-093014	N1822-11A	V8D7445.D	3:09
10	TB03-10014	N1822-13A	V8D7446.D	3:40
11	RB01-100114	N1822-14B	V8D7447.D	4:11
12	MW03-05S-NWG-100114	N1822-16B	V8D7448.D	4:42
13	MW03-15S-NWG-100114	N1822-18B	V8D7449.D	5:12
14	MW02-08SA-NWG-100114	N1822-20B	V8D7450.D	5:43
15	TB04-100214	N1822-22A	V8D7451.D	6:14
16	MW02-05S-NWG-100214	N1822-23B	V8D7452.D	6:45
17	MW03-17I-NWG-100214	N1822-25B	V8D7453.D	7:17

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79419

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79419

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7438.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79419

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79419

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7438.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III

WATER LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79419

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79419 LCS Lot No.:

Date Extracted: 10/08/2014 Date Analyzed (1): 10/08/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	57.6442	115		30 - 155
Chloromethane	50.0000	0.0000	50.8329	102		40 - 125
Vinyl chloride	50.0000	0.0000	51.0038	102		50 - 145
Bromomethane	50.0000	0.0000	43.9722	88		30 - 145
Chloroethane	50.0000	0.0000	51.2816	103		60 - 135
Trichlorofluoromethane	50.0000	0.0000	65.7424	131		60 - 145
1,1-Dichloroethene	50.0000	0.0000	48.9651	98		70 - 130
Acetone	50.0000	0.0000	47.1889	94		40 - 140
Carbon disulfide	50.0000	0.0000	49.5232	99		35 - 160
Methylene chloride	50.0000	0.0000	51.3642	103		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	50.6886	101		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	49.1495	98		65 - 125
1,1-Dichloroethane	50.0000	0.0000	52.0109	104		70 - 135
2-Butanone	50.0000	0.0000	51.9276	104		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	49.2492	98		70 - 125
Bromochloromethane	50.0000	0.0000	53.9244	108		65 - 130
Chloroform	50.0000	0.0000	56.8427	114		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	58.3689	117		65 - 130
Carbon tetrachloride	50.0000	0.0000	57.5202	115		65 - 140
1,2-Dichloroethane	50.0000	0.0000	63.7672	128		70 - 130
Benzene	50.0000	0.0000	51.0115	102		80 - 120
Trichloroethene	50.0000	0.0000	52.0556	104		70 - 125
1,2-Dichloropropane	50.0000	0.0000	50.0041	100		75 - 125
Bromodichloromethane	50.0000	0.0000	54.3285	109		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	49.8337	100		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	52.7539	106		60 - 135
Toluene	50.0000	0.0000	51.3480	103		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	50.4645	101		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	51.4805	103		75 - 125
Tetrachloroethene	50.0000	0.0000	48.3066	97		45 - 150
2-Hexanone	50.0000	0.0000	49.2038	98		55 - 130
Dibromochloromethane	50.0000	0.0000	52.9849	106		60 - 135
1,2-Dibromoethane	50.0000	0.0000	49.8782	100		80 - 120
Chlorobenzene	50.0000	0.0000	49.8055	100		80 - 120
Ethylbenzene	50.0000	0.0000	49.5831	99		75 - 125
Xylene (Total)	150.0000	0.0000	150.0417	100		81 - 121
Styrene	50.0000	0.0000	50.2230	100		65 - 135
Bromoform	50.0000	0.0000	47.2490	94		70 - 130
Isopropylbenzene	50.0000	0.0000	50.1984	100		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	49.5105	99		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	47.2578	95		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	47.2728	95		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	49.4208	99		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	48.4227	97		50 - 130

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79419

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79419 LCS Lot No.:

Date Extracted: 10/08/2014 Date Analyzed (1): 10/08/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	44.7289	89		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	45.6205	91		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	54.8023	110		70 - 130
Cyclohexane	50.0000	0.0000	46.6632	93		70 - 130
Methyl acetate	50.0000	0.0000	55.9237	112		70 - 130
Methylcyclohexane	50.0000	0.0000	45.7330	91		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79419

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79419 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	59.5451	119		3		40	30 - 155
Chloromethane	50.0000	52.6831	105		3		40	40 - 125
Vinyl chloride	50.0000	52.3499	105		3		40	50 - 145
Bromomethane	50.0000	46.2476	92		4		40	30 - 145
Chloroethane	50.0000	52.4247	105		2		40	60 - 135
Trichlorofluoromethane	50.0000	67.8287	136		4		40	60 - 145
1,1-Dichloroethene	50.0000	51.0908	102		4		40	70 - 130
Acetone	50.0000	47.9423	96		2		40	40 - 140
Carbon disulfide	50.0000	50.2608	101		2		40	35 - 160
Methylene chloride	50.0000	51.6204	103		0		40	55 - 140
trans-1,2-Dichloroethene	50.0000	53.3519	107		6		40	60 - 140
Methyl tert-butyl ether	50.0000	50.2542	101		3		40	65 - 125
1,1-Dichloroethane	50.0000	52.6101	105		1		40	70 - 135
2-Butanone	50.0000	52.0101	104		0		40	30 - 150
cis-1,2-Dichloroethene	50.0000	51.2393	102		4		40	70 - 125
Bromochloromethane	50.0000	54.5070	109		1		40	65 - 130
Chloroform	50.0000	58.0998	116		2		40	65 - 135
1,1,1-Trichloroethane	50.0000	58.1574	116		1		40	65 - 130
Carbon tetrachloride	50.0000	57.9117	116		1		40	65 - 140
1,2-Dichloroethane	50.0000	63.4580	127		1		40	70 - 130
Benzene	50.0000	51.7767	104		2		40	80 - 120
Trichloroethene	50.0000	52.7998	106		2		40	70 - 125
1,2-Dichloropropane	50.0000	51.7796	104		4		40	75 - 125
Bromodichloromethane	50.0000	56.3425	113		4		40	75 - 120
cis-1,3-Dichloropropene	50.0000	50.5686	101		1		40	70 - 130
4-Methyl-2-pentanone	50.0000	52.1178	104		2		40	60 - 135
Toluene	50.0000	52.7729	106		3		40	75 - 120
trans-1,3-Dichloropropene	50.0000	51.3465	103		2		40	55 - 140
1,1,2-Trichloroethane	50.0000	53.6462	107		4		40	75 - 125
Tetrachloroethene	50.0000	49.7178	99		2		40	45 - 150
2-Hexanone	50.0000	48.4235	97		1		40	55 - 130
Dibromochloromethane	50.0000	53.2916	107		1		40	60 - 135
1,2-Dibromoethane	50.0000	51.8096	104		4		40	80 - 120
Chlorobenzene	50.0000	51.2317	102		2		40	80 - 120
Ethylbenzene	50.0000	51.7554	104		5		40	75 - 125
Xylene (Total)	150.0000	155.2943	104		4		40	81 - 121
Styrene	50.0000	51.3737	103		3		40	65 - 135
Bromoform	50.0000	48.0797	96		2		40	70 - 130
Isopropylbenzene	50.0000	51.9792	104		4		40	75 - 125
1,1,2,2-Tetrachloroethane	50.0000	50.6209	101		2		40	65 - 130
1,3-Dichlorobenzene	50.0000	48.8555	98		3		40	75 - 125
1,4-Dichlorobenzene	50.0000	49.3890	99		4		40	75 - 125
1,2-Dichlorobenzene	50.0000	51.2708	103		4		40	70 - 120
1,2-Dibromo-3-chloropropan	50.0000	50.4573	101		4		40	50 - 130
1,2,4-Trichlorobenzene	50.0000	46.8702	94		5		40	65 - 135
1,2,3-Trichlorobenzene	50.0000	46.7561	94		3		40	55 - 140

3 - FORM III

WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79419

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79419 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trif	50.0000	56.9291	114		4		40	70 - 130
Cyclohexane	50.0000	49.4264	99		6		40	70 - 130
Methyl acetate	50.0000	55.5244	111		1		40	70 - 130
Methylcyclohexane	50.0000	48.5507	97		6		40	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10J

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7456.D BFB Injection Date: 10/09/2014

Instrument ID: V10 BFB Injection Time: 8:50

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	36.3
75	30.0 - 80.0% of mass 95	62.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.3 (0.4)1
174	50.0 -120% of mass 95	72.1
175	5.0 - 9.0% of mass 174	5.9 (8.2)1
176	95.0 - 101% of mass 174	70.5 (97.9)1
177	5.0 - 9.0% of mass 176	4.5 (6.3)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010J	VSTD05010J	V8D7457.D	10/09/2014	9:30
02	LCS-79443	LCS-79443	V8D7458.D	10/09/2014	10:21
03	MB-79443	MB-79443	V8D7460.D	10/09/2014	11:33
04	MW01-10S-NWG-100214	N1822-27B	V8D7461.D	10/09/2014	12:04
05	MW01-12S-NWG-100214	N1822-29B	V8D7462.D	10/09/2014	12:36
06	MW03-15I-NWG-092914	N1822-04AMS	V8D7474.D	10/09/2014	18:55
07	MW03-15I-NWG-092914	N1822-04AMSD	V8D7475.D	10/09/2014	19:26

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/09/2014 Time: 9:30

Lab File ID: V8D7457.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010J Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.319	0.394	0.100	23.7	20.0
Chloromethane	0.487	0.497	0.100	2.1	20.0
Vinyl chloride	0.415	0.406	0.100	-2.2	20.0
Bromomethane	0.151	0.135	0.100	-10.3	20.0
Chloroethane	0.226	0.234	0.100	3.7	20.0
Trichlorofluoromethane	0.612	0.884	0.100	44.3	20.0
1,1-Dichloroethene	0.290	0.283	0.100	-2.2	20.0
Acetone	0.037	0.042	0.100	14.0	20.0
Carbon disulfide	0.883	0.924	0.100	4.6	20.0
Methylene chloride	0.304	0.309	0.100	1.4	20.0
trans-1,2-Dichloroethene	0.298	0.311	0.100	4.3	20.0
Methyl tert-butyl ether	1.193	1.188	0.100	-0.4	20.0
1,1-Dichloroethane	0.744	0.764	0.200	2.7	20.0
2-Butanone	0.035	0.038	0.100	8.7	20.0
cis-1,2-Dichloroethene	0.331	0.335	0.100	0.9	20.0
Bromochloromethane	0.156	0.172	0.100	10.8	20.0
Chloroform	0.716	0.834	0.200	16.5	20.0
1,1,1-Trichloroethane	0.728	0.847	0.100	16.3	20.0
Carbon tetrachloride	0.623	0.742	0.100	19.1	20.0
1,2-Dichloroethane	0.781	1.015	0.100	30.1	20.0
Benzene	1.164	1.170	0.500	0.5	20.0
Trichloroethene	0.312	0.322	0.200	3.4	20.0
1,2-Dichloropropane	0.360	0.359	0.100	-0.4	20.0
Bromodichloromethane	0.575	0.647	0.200	12.4	20.0
cis-1,3-Dichloropropene	0.544	0.560	0.200	3.0	20.0
4-Methyl-2-pentanone	0.512	0.542	0.100	6.0	20.0
Toluene	1.250	1.285	0.400	2.8	20.0
trans-1,3-Dichloropropene	0.583	0.614	0.100	5.3	20.0
1,1,2-Trichloroethane	0.286	0.304	0.100	6.1	20.0
Tetrachloroethene	0.387	0.378	0.200	-2.3	20.0
2-Hexanone	0.467	0.509	0.100	9.0	20.0
Dibromochloromethane	0.505	0.539	0.100	6.7	20.0
1,2-Dibromoethane	0.429	0.440	0.100	2.7	20.0
Chlorobenzene	1.084	1.081	0.500	-0.3	20.0
Ethylbenzene	0.569	0.576	0.100	1.3	20.0
Xylene (Total)	0.695	0.705	0.100	1.5	20.0
Styrene	1.151	1.177	0.300	2.3	20.0
Bromoform	0.361	0.346	0.100	-4.0	20.0
Isopropylbenzene	1.929	1.991	0.100	3.2	20.0
1,1,2,2-Tetrachloroethane	0.877	0.895	0.300	2.1	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/09/2014 Time: 9:30

Lab File ID: V8D7457.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010J Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.558	1.551	0.600	-0.5	20.0
1,4-Dichlorobenzene	1.624	1.624	0.500	0.0	20.0
1,2-Dichlorobenzene	1.497	1.532	0.400	2.3	20.0
1,2-Dibromo-3-chloropropane	0.229	0.237	0.050	3.7	20.0
1,2,4-Trichlorobenzene	1.062	0.980	0.200	-7.7	20.0
1,2,3-Trichlorobenzene	0.994	0.958	0.100	-3.6	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.326	0.405	0.100	24.0	20.0
Cyclohexane	0.743	0.729	0.100	-1.8	20.0
Methyl acetate	0.487	0.563	0.100	15.7	20.0
Methylcyclohexane	0.485	0.504	0.100	3.9	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/09/2014 Time: 9:30

Lab File ID: V8D7457.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010J Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.303	0.354	0.100	16.6	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.100	4.5	20.0
Toluene-d8	1.387	1.318	0.100	-4.9	20.0
Bromofluorobenzene	0.605	0.656	0.100	8.5	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79443

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7460.D Lab Sample ID: MB-79443

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/09/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 11:33

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79443	LCS-79443	V8D7458.D	10:21
02	MW01-10S-NWG-100214	N1822-27B	V8D7461.D	12:04
03	MW01-12S-NWG-100214	N1822-29B	V8D7462.D	12:36
04	MW03-15I-NWG-092914	N1822-04AMS	V8D7474.D	18:55
05	MW03-15I-NWG-092914	N1822-04AMSD	V8D7475.D	19:26

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79443

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79443

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7460.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79443

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79443

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7460.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/09/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79443

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79443 LCS Lot No.:

Date Extracted: 10/09/2014 Date Analyzed (1): 10/09/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	67.0531	134		30 - 155
Chloromethane	50.0000	0.0000	54.8000	110		40 - 125
Vinyl chloride	50.0000	0.0000	54.4329	109		50 - 145
Bromomethane	50.0000	0.0000	50.8554	102		30 - 145
Chloroethane	50.0000	0.0000	53.6068	107		60 - 135
Trichlorofluoromethane	50.0000	0.0000	72.1326	144		60 - 145
1,1-Dichloroethene	50.0000	0.0000	52.0496	104		70 - 130
Acetone	50.0000	0.0000	61.5427	123		40 - 140
Carbon disulfide	50.0000	0.0000	53.8359	108		35 - 160
Methylene chloride	50.0000	0.0000	53.6592	107		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	54.3101	109		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	50.8865	102		65 - 125
1,1-Dichloroethane	50.0000	0.0000	53.1271	106		70 - 135
2-Butanone	50.0000	0.0000	60.1195	120		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	52.2291	104		70 - 125
Bromochloromethane	50.0000	0.0000	55.9378	112		65 - 130
Chloroform	50.0000	0.0000	59.9077	120		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	58.8157	118		65 - 130
Carbon tetrachloride	50.0000	0.0000	59.3179	119		65 - 140
1,2-Dichloroethane	50.0000	0.0000	66.0230	132	*	70 - 130
Benzene	50.0000	0.0000	51.4442	103		80 - 120
Trichloroethene	50.0000	0.0000	53.3301	107		70 - 125
1,2-Dichloropropane	50.0000	0.0000	51.7852	104		75 - 125
Bromodichloromethane	50.0000	0.0000	56.8084	114		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	52.6948	105		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	55.2398	110		60 - 135
Toluene	50.0000	0.0000	52.3262	105		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	53.9441	108		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	54.1909	108		75 - 125
Tetrachloroethene	50.0000	0.0000	46.5654	93		45 - 150
2-Hexanone	50.0000	0.0000	57.4269	115		55 - 130
Dibromochloromethane	50.0000	0.0000	53.4387	107		60 - 135
1,2-Dibromoethane	50.0000	0.0000	51.6983	103		80 - 120
Chlorobenzene	50.0000	0.0000	50.1061	100		80 - 120
Ethylbenzene	50.0000	0.0000	48.3137	97		75 - 125
Xylene (Total)	150.0000	0.0000	147.0464	98		81 - 121
Styrene	50.0000	0.0000	49.9809	100		65 - 135
Bromoform	50.0000	0.0000	48.7223	97		70 - 130
Isopropylbenzene	50.0000	0.0000	47.5613	95		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	51.5301	103		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	47.2779	95		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	48.4234	97		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	49.4179	99		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	53.0933	106		50 - 130

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79443

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79443 LCS Lot No.:

Date Extracted: 10/09/2014 Date Analyzed (1): 10/09/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	44.5013	89		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	45.8041	92		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	61.8922	124		70 - 130
Cyclohexane	50.0000	0.0000	47.4415	95		70 - 130
Methyl acetate	50.0000	0.0000	59.1708	118		70 - 130
Methylcyclohexane	50.0000	0.0000	47.9156	96		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 1 out of 50 outside limits

COMMENTS:

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914 Level: (TRACE or LOW) LOW

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	58.1784	116		30-155
Chloromethane	50.0000	0.0000	55.3122	111		40-125
Vinyl chloride	50.0000	0.0000	52.3273	105		50-145
Bromomethane	50.0000	0.0000	55.7918	112		30-145
Chloroethane	50.0000	0.0000	52.3400	105		60-135
Trichlorofluoromethane	50.0000	0.0000	67.4557	135		60-145
1,1-Dichloroethene	50.0000	0.0000	49.9204	100		70-130
Acetone	50.0000	0.0000	46.3659	93		40-140
Carbon disulfide	50.0000	0.0000	48.9914	98		35-160
Methylene chloride	50.0000	0.0000	52.4227	105		55-140
trans-1,2-Dichloroethen	50.0000	0.0000	51.0945	102		60-140
Methyl tert-butyl ether	50.0000	0.0000	50.3692	101		65-125
1,1-Dichloroethane	50.0000	0.0000	52.9872	106		70-135
2-Butanone	50.0000	0.0000	52.3467	105		30-150
cis-1,2-Dichloroethene	50.0000	0.0000	52.6055	105		70-125
Bromochloromethane	50.0000	0.0000	57.8951	116		65-130
Chloroform	50.0000	0.0000	60.0317	120		65-135
1,1,1-Trichloroethane	50.0000	0.0000	57.5103	115		65-130
Carbon tetrachloride	50.0000	0.0000	58.8058	118		65-140
1,2-Dichloroethane	50.0000	0.0000	66.3125	133	*	70-130
Benzene	50.0000	0.0000	50.9860	102		80-120
Trichloroethene	50.0000	0.0000	52.2014	104		70-125
1,2-Dichloropropane	50.0000	0.0000	51.6740	103		75-125
Bromodichloromethane	50.0000	0.0000	58.2871	117		75-120
cis-1,3-Dichloropropene	50.0000	0.0000	51.1083	102		70-130
4-Methyl-2-pentanone	50.0000	0.0000	53.9811	108		60-135
Toluene	50.0000	0.0000	52.1082	104		75-120
trans-1,3-Dichloroprope	50.0000	0.0000	52.7343	105		55-140
1,1,2-Trichloroethane	50.0000	0.0000	54.8668	110		75-125
Tetrachloroethene	50.0000	0.0000	47.2090	94		45-150
2-Hexanone	50.0000	0.0000	51.5533	103		55-130
Dibromochloromethane	50.0000	0.0000	52.9983	106		60-135
1,2-Dibromoethane	50.0000	0.0000	51.2963	103		80-120
Chlorobenzene	50.0000	0.0000	49.9059	100		80-120
Ethylbenzene	50.0000	0.0000	48.6968	97		75-125
Xylene (Total)	150.0000	0.0000	146.7861	98		81-121
Styrene	50.0000	0.0000	47.1183	94		65-135
Bromoform	50.0000	0.0000	47.1555	94		70-130
Isopropylbenzene	50.0000	0.0000	50.3242	101		75-125
1,1,2,2-Tetrachloroetha	50.0000	0.0000	51.2347	102		65-130
1,3-Dichlorobenzene	50.0000	0.0000	47.9125	96		75-125
1,4-Dichlorobenzene	50.0000	0.0000	48.4512	97		75-125
1,2-Dichlorobenzene	50.0000	0.0000	50.2641	101		70-120
1,2-Dibromo-3-chloropro	50.0000	0.0000	52.2260	104		50-130

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914 Level: (TRACE or LOW) LOW

1,2,4-Trichlorobenzene	50.0000	0.0000	45.2437	90		65-135
1,2,3-Trichlorobenzene	50.0000	0.0000	47.3988	95		55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	0.0000	57.0406	114		70-130
Cyclohexane	50.0000	0.0000	46.8524	94		70-130
Methyl acetate	50.0000	0.0000	52.5850	105		70-130
Methylcyclohexane	50.0000	0.0000	47.0156	94		70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	56.1966	112		3		0-40	30-155
Chloromethane	50.0000	53.6498	107		3		0-40	40-125
Vinyl chloride	50.0000	51.6309	103		1		0-40	50-145
Bromomethane	50.0000	57.0261	114		2		0-40	30-145
Chloroethane	50.0000	50.7893	102		3		0-40	60-135
Trichlorofluoromethane	50.0000	66.8594	134		1		0-40	60-145
1,1-Dichloroethene	50.0000	49.1334	98		2		0-40	70-130
Acetone	50.0000	49.0045	98		6		0-40	40-140
Carbon disulfide	50.0000	48.7178	97		1		0-40	35-160
Methylene chloride	50.0000	51.1040	102		3		0-40	55-140
trans-1,2-Dichloroethen	50.0000	51.5167	103		1		0-40	60-140
Methyl tert-butyl ether	50.0000	49.1469	98		2		0-40	65-125
1,1-Dichloroethane	50.0000	50.9934	102		4		0-40	70-135
2-Butanone	50.0000	51.0855	102		2		0-40	30-150
cis-1,2-Dichloroethene	50.0000	51.8156	104		2		0-40	70-125
Bromochloromethane	50.0000	55.4544	111		4		0-40	65-130
Chloroform	50.0000	57.8699	116		4		0-40	65-135
1,1,1-Trichloroethane	50.0000	56.6975	113		1		0-40	65-130
Carbon tetrachloride	50.0000	56.3281	113		4		0-40	65-140
1,2-Dichloroethane	50.0000	63.4262	127		4		0-40	70-130
Benzene	50.0000	50.2935	101		1		0-40	80-120
Trichloroethene	50.0000	52.2042	104		0		0-40	70-125
1,2-Dichloropropane	50.0000	50.7173	101		2		0-40	75-125
Bromodichloromethane	50.0000	56.1302	112		4		0-40	75-120
cis-1,3-Dichloropropene	50.0000	49.4726	99		3		0-40	70-130
4-Methyl-2-pentanone	50.0000	51.0933	102		5		0-40	60-135
Toluene	50.0000	50.9406	102		2		0-40	75-120
trans-1,3-Dichloroprope	50.0000	49.5689	99		6		0-40	55-140
1,1,2-Trichloroethane	50.0000	52.5064	105		4		0-40	75-125
Tetrachloroethene	50.0000	46.0368	92		3		0-40	45-150
2-Hexanone	50.0000	48.3248	97		6		0-40	55-130
Dibromochloromethane	50.0000	50.2301	100		5		0-40	60-135
1,2-Dibromoethane	50.0000	49.6664	99		3		0-40	80-120
Chlorobenzene	50.0000	48.7599	98		2		0-40	80-120
Ethylbenzene	50.0000	48.4431	97		1		0-40	75-125
Xylene (Total)	150.0000	143.8903	96		2		0-40	81-121
Styrene	50.0000	45.5913	91		3		0-40	65-135

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914 Level: (TRACE or LOW) LOW

Bromoform	50.0000	44.7763	90		5		0-40	70-130
Isopropylbenzene	50.0000	48.9159	98		3		0-40	75-125
1,1,2,2-Tetrachloroetha	50.0000	51.9362	104		1		0-40	65-130
1,3-Dichlorobenzene	50.0000	48.1624	96		1		0-40	75-125
1,4-Dichlorobenzene	50.0000	48.8639	98		1		0-40	75-125
1,2-Dichlorobenzene	50.0000	50.5973	101		1		0-40	70-120
1,2-Dibromo-3-chloropro	50.0000	49.5272	99		5		0-40	50-130
1,2,4-Trichlorobenzene	50.0000	45.0097	90		1		0-40	65-135
1,2,3-Trichlorobenzene	50.0000	46.1481	92		3		0-40	55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	56.1630	112		2		0-40	70-130
Cyclohexane	50.0000	46.4922	93		1		0-40	70-130
Methyl acetate	50.0000	47.9138	96		9		0-40	70-130
Methylcyclohexane	50.0000	46.3740	93		1		0-40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 1 out of 100 outside limits

COMMENTS:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10L

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7510.D BFB Injection Date: 10/14/2014

Instrument ID: V10 BFB Injection Time: 8:21

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.0
75	30.0 - 80.0% of mass 95	64.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.2 (0.3)1
174	50.0 -120% of mass 95	76.5
175	5.0 - 9.0% of mass 174	5.8 (7.5)1
176	95.0 - 101% of mass 174	73.9 (96.5)1
177	5.0 - 9.0% of mass 176	4.8 (6.5)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010L	VSTD05010L	V8D7511.D	10/14/2014	8:42
02	LCS-79488	LCS-79488	V8D7512.D	10/14/2014	9:21
03	LCSD-79488	LCSD-79488	V8D7513.D	10/14/2014	9:53
04	MB-79488	MB-79488	V8D7515.D	10/14/2014	11:15
05	TB05-100314	N1822-31A	V8D7528.D	10/14/2014	18:13
06	TB06-100614	N1822-34A	V8D7529.D	10/14/2014	18:45

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/14/2014 Time: 8:42

Lab File ID: V8D7511.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010L Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.319	0.354	0.100	11.0	20.0
Chloromethane	0.487	0.510	0.100	4.7	20.0
Vinyl chloride	0.415	0.412	0.100	-0.7	20.0
Bromomethane	0.151	0.141	0.100	-6.4	20.0
Chloroethane	0.226	0.234	0.100	3.6	20.0
Trichlorofluoromethane	0.612	0.875	0.100	42.9	20.0
1,1-Dichloroethene	0.290	0.282	0.100	-2.8	20.0
Acetone	0.037	0.050	0.100	35.3	20.0
Carbon disulfide	0.883	0.933	0.100	5.6	20.0
Methylene chloride	0.304	0.322	0.100	5.9	20.0
trans-1,2-Dichloroethene	0.298	0.310	0.100	4.2	20.0
Methyl tert-butyl ether	1.193	1.138	0.100	-4.6	20.0
1,1-Dichloroethane	0.744	0.765	0.200	2.8	20.0
2-Butanone	0.035	0.037	0.100	6.3	20.0
cis-1,2-Dichloroethene	0.331	0.333	0.100	0.6	20.0
Bromochloromethane	0.156	0.171	0.100	9.8	20.0
Chloroform	0.716	0.838	0.200	17.1	20.0
1,1,1-Trichloroethane	0.728	0.861	0.100	18.2	20.0
Carbon tetrachloride	0.623	0.735	0.100	18.0	20.0
1,2-Dichloroethane	0.781	0.998	0.100	27.9	20.0
Benzene	1.164	1.171	0.500	0.5	20.0
Trichloroethene	0.312	0.331	0.200	6.3	20.0
1,2-Dichloropropane	0.360	0.364	0.100	0.9	20.0
Bromodichloromethane	0.575	0.649	0.200	12.8	20.0
cis-1,3-Dichloropropene	0.544	0.551	0.200	1.3	20.0
4-Methyl-2-pentanone	0.512	0.496	0.100	-3.1	20.0
Toluene	1.250	1.270	0.400	1.6	20.0
trans-1,3-Dichloropropene	0.583	0.602	0.100	3.2	20.0
1,1,2-Trichloroethane	0.286	0.293	0.100	2.2	20.0
Tetrachloroethene	0.387	0.348	0.200	-10.0	20.0
2-Hexanone	0.467	0.466	0.100	-0.1	20.0
Dibromochloromethane	0.505	0.516	0.100	2.3	20.0
1,2-Dibromoethane	0.429	0.400	0.100	-6.7	20.0
Chlorobenzene	1.084	1.023	0.500	-5.6	20.0
Ethylbenzene	0.569	0.527	0.100	-7.3	20.0
Xylene (Total)	0.695	0.654	0.100	-5.8	20.0
Styrene	1.151	1.131	0.300	-1.7	20.0
Bromoform	0.361	0.330	0.100	-8.5	20.0
Isopropylbenzene	1.929	1.820	0.100	-5.7	20.0
1,1,2,2-Tetrachloroethane	0.877	0.773	0.300	-11.8	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/14/2014 Time: 8:42

Lab File ID: V8D7511.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010L Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.558	1.383	0.600	-11.2	20.0
1,4-Dichlorobenzene	1.624	1.478	0.500	-9.0	20.0
1,2-Dichlorobenzene	1.497	1.388	0.400	-7.3	20.0
1,2-Dibromo-3-chloropropane	0.229	0.218	0.050	-4.7	20.0
1,2,4-Trichlorobenzene	1.062	0.910	0.200	-14.4	20.0
1,2,3-Trichlorobenzene	0.994	0.873	0.100	-12.1	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.326	0.382	0.100	17.1	20.0
Cyclohexane	0.743	0.692	0.100	-6.8	20.0
Methyl acetate	0.487	0.501	0.100	2.9	20.0
Methylcyclohexane	0.485	0.471	0.100	-2.9	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/14/2014 Time: 8:42

Lab File ID: V8D7511.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD05010L Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	$\overline{RRF}$	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.303	0.347	0.100	14.3	20.0
1,2-Dichloroethane-d4	0.058	0.061	0.100	4.7	20.0
Toluene-d8	1.387	1.294	0.100	-6.7	20.0
Bromofluorobenzene	0.605	0.656	0.100	8.5	20.0

4A - FORM IV VOA
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.
MB-79488

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7515.D Lab Sample ID: MB-79488

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/14/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 11:15

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79488	LCS-79488	V8D7512.D	9:21
02	LCSD-79488	LCSD-79488	V8D7513.D	9:53
03	TB05-100314	N1822-31A	V8D7528.D	18:13
04	TB06-100614	N1822-34A	V8D7529.D	18:45

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79488

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79488

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7515.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/14/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79488

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79488

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7515.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/14/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	5.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	5.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III

WATER LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79488

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79488 LCS Lot No.:

Date Extracted: 10/14/2014 Date Analyzed (1): 10/14/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	53.5511	107		30 - 155
Chloromethane	50.0000	0.0000	55.5588	111		40 - 125
Vinyl chloride	50.0000	0.0000	52.3184	105		50 - 145
Bromomethane	50.0000	0.0000	55.5053	111		30 - 145
Chloroethane	50.0000	0.0000	53.6485	107		60 - 135
Trichlorofluoromethane	50.0000	0.0000	68.8002	138		60 - 145
1,1-Dichloroethene	50.0000	0.0000	50.9982	102		70 - 130
Acetone	50.0000	0.0000	68.3882	137		40 - 140
Carbon disulfide	50.0000	0.0000	54.1597	108		35 - 160
Methylene chloride	50.0000	0.0000	53.3236	107		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	55.6760	111		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	51.8507	104		65 - 125
1,1-Dichloroethane	50.0000	0.0000	53.7358	107		70 - 135
2-Butanone	50.0000	0.0000	59.7329	119		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	52.8469	106		70 - 125
Bromochloromethane	50.0000	0.0000	57.3394	115		65 - 130
Chloroform	50.0000	0.0000	60.6982	121		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	60.6121	121		65 - 130
Carbon tetrachloride	50.0000	0.0000	61.1671	122		65 - 140
1,2-Dichloroethane	50.0000	0.0000	66.4382	133	*	70 - 130
Benzene	50.0000	0.0000	53.0605	106		80 - 120
Trichloroethene	50.0000	0.0000	55.4994	111		70 - 125
1,2-Dichloropropane	50.0000	0.0000	52.9186	106		75 - 125
Bromodichloromethane	50.0000	0.0000	58.9176	118		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	54.5385	109		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	54.3814	109		60 - 135
Toluene	50.0000	0.0000	55.2439	110		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	54.7590	110		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	55.0873	110		75 - 125
Tetrachloroethene	50.0000	0.0000	50.3297	101		45 - 150
2-Hexanone	50.0000	0.0000	55.9745	112		55 - 130
Dibromochloromethane	50.0000	0.0000	56.8841	114		60 - 135
1,2-Dibromoethane	50.0000	0.0000	52.7391	105		80 - 120
Chlorobenzene	50.0000	0.0000	52.5369	105		80 - 120
Ethylbenzene	50.0000	0.0000	52.7326	105		75 - 125
Xylene (Total)	150.0000	0.0000	160.1325	107		81 - 121
Styrene	50.0000	0.0000	53.8502	108		65 - 135
Bromoform	50.0000	0.0000	50.8934	102		70 - 130
Isopropylbenzene	50.0000	0.0000	52.8241	106		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	50.6140	101		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	51.0411	102		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	51.5763	103		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	52.3509	105		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	53.2418	106		50 - 130

3 - FORM III

WATER LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79488

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79488 LCS Lot No.:

Date Extracted: 10/14/2014 Date Analyzed (1): 10/14/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	48.3940	97		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	49.2105	98		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	60.4298	121		70 - 130
Cyclohexane	50.0000	0.0000	49.5983	99		70 - 130
Methyl acetate	50.0000	0.0000	56.0548	112		70 - 130
Methylcyclohexane	50.0000	0.0000	50.8649	102		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 1 out of 50 outside limits

COMMENTS:

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79488

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79488 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	52.4076	105		2		40	30 - 155
Chloromethane	50.0000	52.3463	105		6		40	40 - 125
Vinyl chloride	50.0000	48.9479	98		7		40	50 - 145
Bromomethane	50.0000	53.0088	106		5		40	30 - 145
Chloroethane	50.0000	51.7080	103		4		40	60 - 135
Trichlorofluoromethane	50.0000	67.1778	134		3		40	60 - 145
1,1-Dichloroethene	50.0000	48.8117	98		4		40	70 - 130
Acetone	50.0000	49.5886	99		32		40	40 - 140
Carbon disulfide	50.0000	48.5800	97		11		40	35 - 160
Methylene chloride	50.0000	50.8761	102		5		40	55 - 140
trans-1,2-Dichloroethene	50.0000	50.8949	102		8		40	60 - 140
Methyl tert-butyl ether	50.0000	51.1061	102		2		40	65 - 125
1,1-Dichloroethane	50.0000	51.5313	103		4		40	70 - 135
2-Butanone	50.0000	52.7318	105		13		40	30 - 150
cis-1,2-Dichloroethene	50.0000	50.9314	102		4		40	70 - 125
Bromochloromethane	50.0000	55.7263	111		4		40	65 - 130
Chloroform	50.0000	57.4608	115		5		40	65 - 135
1,1,1-Trichloroethane	50.0000	58.0124	116		4		40	65 - 130
Carbon tetrachloride	50.0000	57.0045	114		7		40	65 - 140
1,2-Dichloroethane	50.0000	64.2158	128		4		40	70 - 130
Benzene	50.0000	50.9351	102		4		40	80 - 120
Trichloroethene	50.0000	52.7639	106		5		40	70 - 125
1,2-Dichloropropane	50.0000	51.0585	102		4		40	75 - 125
Bromodichloromethane	50.0000	56.1415	112		5		40	75 - 120
cis-1,3-Dichloropropene	50.0000	52.8766	106		3		40	70 - 130
4-Methyl-2-pentanone	50.0000	56.5560	113		4		40	60 - 135
Toluene	50.0000	52.1688	104		6		40	75 - 120
trans-1,3-Dichloropropene	50.0000	52.6036	105		5		40	55 - 140
1,1,2-Trichloroethane	50.0000	54.2812	109		1		40	75 - 125
Tetrachloroethene	50.0000	46.2428	92		9		40	45 - 150
2-Hexanone	50.0000	52.5688	105		6		40	55 - 130
Dibromochloromethane	50.0000	52.3166	105		8		40	60 - 135
1,2-Dibromoethane	50.0000	50.4429	101		4		40	80 - 120
Chlorobenzene	50.0000	48.8463	98		7		40	80 - 120
Ethylbenzene	50.0000	49.1209	98		7		40	75 - 125
Xylene (Total)	150.0000	147.1114	98		9		40	81 - 121
Styrene	50.0000	48.9085	98		10		40	65 - 135
Bromoform	50.0000	48.9667	98		4		40	70 - 130
Isopropylbenzene	50.0000	49.7042	99		7		40	75 - 125
1,1,2,2-Tetrachloroethane	50.0000	50.2298	100		1		40	65 - 130
1,3-Dichlorobenzene	50.0000	47.2520	95		7		40	75 - 125
1,4-Dichlorobenzene	50.0000	47.6837	95		8		40	75 - 125
1,2-Dichlorobenzene	50.0000	49.0244	98		7		40	70 - 120
1,2-Dibromo-3-chloropropan	50.0000	52.9802	106		0		40	50 - 130
1,2,4-Trichlorobenzene	50.0000	44.7653	90		7		40	65 - 135
1,2,3-Trichlorobenzene	50.0000	45.6287	91		7		40	55 - 140

3 - FORM III

WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79488

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79488 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trif	50.0000	59.3065	119		2		40	70 - 130
Cyclohexane	50.0000	47.4433	95		4		40	70 - 130
Methyl acetate	50.0000	57.4769	115		3		40	70 - 130
Methylcyclohexane	50.0000	49.1364	98		4		40	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10O

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7600.D BFB Injection Date: 10/17/2014

Instrument ID: V10 BFB Injection Time: 8:45

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	34.5
75	30.0 - 80.0% of mass 95	60.8
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.5 (0.7)1
174	50.0 -120% of mass 95	74.4
175	5.0 - 9.0% of mass 174	5.4 (7.3)1
176	95.0 - 101% of mass 174	71.7 (96.5)1
177	5.0 - 9.0% of mass 176	4.6 (6.4)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010O	VSTD05010O	V8D7602.D	10/17/2014	10:11
02	LCS-79554	LCS-79554	V8D7603.D	10/17/2014	10:55
03	LCSD-79554	LCSD-79554	V8D7604.D	10/17/2014	11:27
04	MB-79554	MB-79554	V8D7606.D	10/17/2014	12:31
05	MW02-4SA-NWG-100614	N1822-35A	V8D7608.D	10/17/2014	13:35
06	MW03-16S-NWG-100614	N1822-37A	V8D7609.D	10/17/2014	14:26
07	TB07-100714	N1822-39A	V8D7613.D	10/17/2014	16:33
08	RB02-100814	N1822-40B	V8D7614.D	10/17/2014	17:05
09	MW02-09S-NWG-100814	N1822-42B	V8D7615.D	10/17/2014	17:37
10	MW02-11S-NWG-100814	N1822-44B	V8D7616.D	10/17/2014	18:08
11	TB08-100914	N1822-46A	V8D7617.D	10/17/2014	18:40
12	MW01-14S-NWG-100914	N1822-47B	V8D7618.D	10/17/2014	19:11
13	TB09-101014	N1822-49A	V8D7619.D	10/17/2014	19:43
14	MW02-10S-NWG-101014	N1822-50B	V8D7620.D	10/17/2014	20:14
15	FD02-101014	N1822-52B	V8D7621.D	10/17/2014	20:45

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/17/2014 Time: 10:11

Lab File ID: V8D7602.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD050100 Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.319	0.247	0.100	-22.4	20.0
Chloromethane	0.487	0.417	0.100	-14.4	20.0
Vinyl chloride	0.415	0.386	0.100	-6.8	20.0
Bromomethane	0.151	0.107	0.100	-28.9	20.0
Chloroethane	0.226	0.229	0.100	1.3	20.0
Trichlorofluoromethane	0.612	0.781	0.100	27.5	20.0
1,1-Dichloroethene	0.290	0.295	0.100	1.7	20.0
Acetone	0.037	0.052	0.100	42.1	20.0
Carbon disulfide	0.883	0.950	0.100	7.6	20.0
Methylene chloride	0.304	0.322	0.100	5.7	20.0
trans-1,2-Dichloroethene	0.298	0.328	0.100	10.0	20.0
Methyl tert-butyl ether	1.193	1.193	0.100	0.0	20.0
1,1-Dichloroethane	0.744	0.790	0.200	6.2	20.0
2-Butanone	0.035	0.042	0.100	19.0	20.0
cis-1,2-Dichloroethene	0.331	0.352	0.100	6.1	20.0
Bromochloromethane	0.156	0.174	0.100	12.2	20.0
Chloroform	0.716	0.810	0.200	13.1	20.0
1,1,1-Trichloroethane	0.728	0.795	0.100	9.2	20.0
Carbon tetrachloride	0.623	0.680	0.100	9.1	20.0
1,2-Dichloroethane	0.781	0.904	0.100	15.8	20.0
Benzene	1.164	1.265	0.500	8.7	20.0
Trichloroethene	0.312	0.346	0.200	11.1	20.0
1,2-Dichloropropane	0.360	0.389	0.100	7.9	20.0
Bromodichloromethane	0.575	0.627	0.200	9.1	20.0
cis-1,3-Dichloropropene	0.544	0.597	0.200	9.8	20.0
4-Methyl-2-pentanone	0.512	0.549	0.100	7.4	20.0
Toluene	1.250	1.384	0.400	10.7	20.0
trans-1,3-Dichloropropene	0.583	0.616	0.100	5.5	20.0
1,1,2-Trichloroethane	0.286	0.313	0.100	9.3	20.0
Tetrachloroethene	0.387	0.377	0.200	-2.5	20.0
2-Hexanone	0.467	0.506	0.100	8.5	20.0
Dibromochloromethane	0.505	0.491	0.100	-2.6	20.0
1,2-Dibromoethane	0.429	0.427	0.100	-0.4	20.0
Chlorobenzene	1.084	1.085	0.500	0.1	20.0
Ethylbenzene	0.569	0.564	0.100	-0.9	20.0
Xylene (Total)	0.695	0.691	0.100	-0.6	20.0
Styrene	1.151	1.143	0.300	-0.7	20.0
Bromoform	0.361	0.320	0.100	-11.2	20.0
Isopropylbenzene	1.929	1.904	0.100	-1.3	20.0
1,1,2,2-Tetrachloroethane	0.877	0.898	0.300	2.5	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/17/2014 Time: 10:11

Lab File ID: V8D7602.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD050100 Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.558	1.514	0.600	-2.8	20.0
1,4-Dichlorobenzene	1.624	1.559	0.500	-4.0	20.0
1,2-Dichlorobenzene	1.497	1.480	0.400	-1.1	20.0
1,2-Dibromo-3-chloropropane	0.229	0.221	0.050	-3.3	20.0
1,2,4-Trichlorobenzene	1.062	0.988	0.200	-7.0	20.0
1,2,3-Trichlorobenzene	0.994	0.920	0.100	-7.4	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.326	0.388	0.100	18.8	20.0
Cyclohexane	0.743	0.763	0.100	2.6	20.0
Methyl acetate	0.487	0.547	0.100	12.3	20.0
Methylcyclohexane	0.485	0.544	0.100	12.2	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/17/2014 Time: 10:11

Lab File ID: V8D7602.D Init. Calib. Date(s): 10/01/2014 10/01/2014

EPA Sample No.(VSTD#####) VSTD050100 Init. Calib. Time(s): 9:01 12:09

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.303	0.336	0.100	10.7	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.100	4.0	20.0
Toluene-d8	1.387	1.308	0.100	-5.7	20.0
Bromofluorobenzene	0.605	0.624	0.100	3.2	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79554

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7606.D Lab Sample ID: MB-79554

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/17/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 12:31

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79554	LCS-79554	V8D7603.D	10:55
02	LCSD-79554	LCSD-79554	V8D7604.D	11:27
03	MW02-4SA-NWG-100614	N1822-35A	V8D7608.D	13:35
04	MW03-16S-NWG-100614	N1822-37A	V8D7609.D	14:26
05	TB07-100714	N1822-39A	V8D7613.D	16:33
06	RB02-100814	N1822-40B	V8D7614.D	17:05
07	MW02-09S-NWG-100814	N1822-42B	V8D7615.D	17:37
08	MW02-11S-NWG-100814	N1822-44B	V8D7616.D	18:08
09	TB08-100914	N1822-46A	V8D7617.D	18:40
10	MW01-14S-NWG-100914	N1822-47B	V8D7618.D	19:11
11	TB09-101014	N1822-49A	V8D7619.D	19:43
12	MW02-10S-NWG-101014	N1822-50B	V8D7620.D	20:14
13	FD02-101014	N1822-52B	V8D7621.D	20:45

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79554

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79554

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7606.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79554

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79554

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7606.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/17/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79554

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79554 LCS Lot No.:

Date Extracted: 10/17/2014 Date Analyzed (1): 10/17/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	34.0284	68		30 - 155
Chloromethane	50.0000	0.0000	42.1656	84		40 - 125
Vinyl chloride	50.0000	0.0000	43.3200	87		50 - 145
Bromomethane	50.0000	0.0000	40.4108	81		30 - 145
Chloroethane	50.0000	0.0000	48.8188	98		60 - 135
Trichlorofluoromethane	50.0000	0.0000	59.0815	118		60 - 145
1,1-Dichloroethene	50.0000	0.0000	49.4998	99		70 - 130
Acetone	50.0000	0.0000	75.4170	151	*	40 - 140
Carbon disulfide	50.0000	0.0000	50.9925	102		35 - 160
Methylene chloride	50.0000	0.0000	52.9131	106		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	53.4732	107		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	50.2515	101		65 - 125
1,1-Dichloroethane	50.0000	0.0000	51.7691	104		70 - 135
2-Butanone	50.0000	0.0000	60.5464	121		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	52.6317	105		70 - 125
Bromochloromethane	50.0000	0.0000	57.0725	114		65 - 130
Chloroform	50.0000	0.0000	56.0653	112		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	53.1489	106		65 - 130
Carbon tetrachloride	50.0000	0.0000	52.6171	105		65 - 140
1,2-Dichloroethane	50.0000	0.0000	58.3175	117		70 - 130
Benzene	50.0000	0.0000	53.1306	106		80 - 120
Trichloroethene	50.0000	0.0000	54.1761	108		70 - 125
1,2-Dichloropropane	50.0000	0.0000	53.6172	107		75 - 125
Bromodichloromethane	50.0000	0.0000	54.7475	109		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	54.6070	109		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	59.7311	119		60 - 135
Toluene	50.0000	0.0000	54.2836	109		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	52.3780	105		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	55.8030	112		75 - 125
Tetrachloroethene	50.0000	0.0000	48.2696	97		45 - 150
2-Hexanone	50.0000	0.0000	61.8015	124		55 - 130
Dibromochloromethane	50.0000	0.0000	51.7137	103		60 - 135
1,2-Dibromoethane	50.0000	0.0000	51.7500	104		80 - 120
Chlorobenzene	50.0000	0.0000	51.1589	102		80 - 120
Ethylbenzene	50.0000	0.0000	50.6013	101		75 - 125
Xylene (Total)	150.0000	0.0000	154.1429	103		81 - 121
Styrene	50.0000	0.0000	51.6855	103		65 - 135
Bromoform	50.0000	0.0000	46.6213	93		70 - 130
Isopropylbenzene	50.0000	0.0000	50.5213	101		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	54.5962	109		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	50.8315	102		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	50.4200	101		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	52.5075	105		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	51.3079	103		50 - 130

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79554

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79554 LCS Lot No.:

Date Extracted: 10/17/2014 Date Analyzed (1): 10/17/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	50.6876	101		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	51.2869	103		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	57.1134	114		70 - 130
Cyclohexane	50.0000	0.0000	50.5852	101		70 - 130
Methyl acetate	50.0000	0.0000	58.3819	117		70 - 130
Methylcyclohexane	50.0000	0.0000	55.8255	112		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 1 out of 50 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79554

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79554 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	33.6081	67		1		40	30 - 155
Chloromethane	50.0000	40.1472	80		5		40	40 - 125
Vinyl chloride	50.0000	42.9679	86		1		40	50 - 145
Bromomethane	50.0000	36.8846	74		9		40	30 - 145
Chloroethane	50.0000	49.2275	98		0		40	60 - 135
Trichlorofluoromethane	50.0000	58.3419	117		1		40	60 - 145
1,1-Dichloroethene	50.0000	47.8269	96		3		40	70 - 130
Acetone	50.0000	60.0735	120		23		40	40 - 140
Carbon disulfide	50.0000	47.3790	95		7		40	35 - 160
Methylene chloride	50.0000	49.7716	100		6		40	55 - 140
trans-1,2-Dichloroethene	50.0000	51.0944	102		5		40	60 - 140
Methyl tert-butyl ether	50.0000	49.9888	100		1		40	65 - 125
1,1-Dichloroethane	50.0000	50.2987	101		3		40	70 - 135
2-Butanone	50.0000	61.0296	122		1		40	30 - 150
cis-1,2-Dichloroethene	50.0000	51.9101	104		1		40	70 - 125
Bromochloromethane	50.0000	52.7514	106		7		40	65 - 130
Chloroform	50.0000	53.6955	107		5		40	65 - 135
1,1,1-Trichloroethane	50.0000	52.0259	104		2		40	65 - 130
Carbon tetrachloride	50.0000	50.8648	102		3		40	65 - 140
1,2-Dichloroethane	50.0000	57.1733	114		3		40	70 - 130
Benzene	50.0000	52.2310	104		2		40	80 - 120
Trichloroethene	50.0000	52.7649	106		2		40	70 - 125
1,2-Dichloropropane	50.0000	52.7413	105		2		40	75 - 125
Bromodichloromethane	50.0000	52.1959	104		5		40	75 - 120
cis-1,3-Dichloropropene	50.0000	52.9633	106		3		40	70 - 130
4-Methyl-2-pentanone	50.0000	59.5127	119		0		40	60 - 135
Toluene	50.0000	52.5142	105		4		40	75 - 120
trans-1,3-Dichloropropene	50.0000	50.3414	101		4		40	55 - 140
1,1,2-Trichloroethane	50.0000	54.1319	108		4		40	75 - 125
Tetrachloroethene	50.0000	46.9602	94		3		40	45 - 150
2-Hexanone	50.0000	57.2851	115		8		40	55 - 130
Dibromochloromethane	50.0000	50.4605	101		2		40	60 - 135
1,2-Dibromoethane	50.0000	52.0609	104		0		40	80 - 120
Chlorobenzene	50.0000	49.2174	98		4		40	80 - 120
Ethylbenzene	50.0000	49.2281	98		3		40	75 - 125
Xylene (Total)	150.0000	147.3993	98		5		40	81 - 121
Styrene	50.0000	49.1998	98		5		40	65 - 135
Bromoform	50.0000	46.5984	93		0		40	70 - 130
Isopropylbenzene	50.0000	49.0977	98		3		40	75 - 125
1,1,2,2-Tetrachloroethane	50.0000	54.5500	109		0		40	65 - 130
1,3-Dichlorobenzene	50.0000	48.4230	97		5		40	75 - 125
1,4-Dichlorobenzene	50.0000	48.8598	98		3		40	75 - 125
1,2-Dichlorobenzene	50.0000	48.9047	98		7		40	70 - 120
1,2-Dibromo-3-chloropropan	50.0000	54.8606	110		7		40	50 - 130
1,2,4-Trichlorobenzene	50.0000	46.4298	93		8		40	65 - 135
1,2,3-Trichlorobenzene	50.0000	46.7406	93		10		40	55 - 140

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79554

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79554 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trif	50.0000	56.1297	112		2		40	70 - 130
Cyclohexane	50.0000	49.0361	98		3		40	70 - 130
Methyl acetate	50.0000	60.3703	121		3		40	70 - 130
Methylcyclohexane	50.0000	52.3296	105		6		40	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7701.D BFB Injection Date: 10/22/2014

Instrument ID: V10 BFB Injection Time: 14:32

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	33.7
75	30.0 - 80.0% of mass 95	61.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.1
173	Less than 2.0% of mass 174	0.6 (0.8)1
174	50.0 -120% of mass 95	75.1
175	5.0 - 9.0% of mass 174	5.5 (7.4)1
176	95.0 - 101% of mass 174	72.8 (97.0)1
177	5.0 - 9.0% of mass 176	5.1 (7.0)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010S	VSTD05010S	V8D7702.D	10/22/2014	15:03
02	VSTD02010S	VSTD02010S	V8D7703.D	10/22/2014	15:34
03	VSTD00510S	VSTD00510S	V8D7704.D	10/22/2014	16:05
04	VSTD00110S	VSTD00110S	V8D7706.D	10/22/2014	17:07
05	VSTD20010S	VSTD20010S	V8D7707.D	10/22/2014	17:38
06	VSTD10010S	VSTD10010S	V8D7708.D	10/22/2014	18:10
07	VICV05010S	VICV05010S	V8D7709.D	10/22/2014	18:41
08	LCS-79642	LCS-79642	V8D7710.D	10/22/2014	19:12
09	LCSD-79642	LCSD-79642	V8D7711.D	10/22/2014	19:43
10	MB-79642	MB-79642	V8D7713.D	10/22/2014	20:45
11	MW01-14S-NWG-100914	N1822-47BMS	V8D7714.D	10/22/2014	21:16
12	MW01-14S-NWG-100914	N1822-47BMSD	V8D7715.D	10/22/2014	21:47

no samples

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date(s): 10/22/2014 10/22/2014

Heated Purge: (Y/N) N Calibration Times: 15:03 18:10

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7704.D RRF020 = V8D7703.D RRF050 = V8D7702.D RRF100 = V8D7708.D RRF200 = V8D7707.D
RRF001 = V8D7706.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
Dichlorodifluoromethane	0.636	0.760	0.619	0.560	0.577	0.680					0.639	11.5
Chloromethane	0.676	0.808	0.633	0.681	0.626	0.904					0.722	15.4
Vinyl chloride	0.476	0.587	0.487	0.512	0.474	0.567					0.517	9.4
Bromomethane	0.148	0.182	0.146	0.203	0.165	0.164					0.168	12.8
Chloroethane	0.288	0.317	0.263	0.268	0.251	0.377					0.294	15.9
Trichlorofluoromethane	0.929	1.032	0.881	0.812	0.868	1.116					0.940	12.1
1,1-Dichloroethene	0.345	0.380	0.311	0.338	0.312	0.371					0.343	8.4
Acetone	0.043	0.051	0.041	0.037	0.036						0.041	14.7
Carbon disulfide	1.037	1.137	0.953	1.037	0.967	1.134					1.044	7.5
Methylene chloride	0.377	0.424	0.339	0.362	0.340	0.458					0.383	12.6
trans-1,2-Dichloroethene	0.359	0.413	0.331	0.362	0.339	0.368					0.362	8.0
Methyl tert-butyl ether	1.280	1.483	1.220	1.342	1.307	1.305					1.323	6.7
1,1-Dichloroethane	0.875	1.051	0.817	0.889	0.853	0.870					0.893	9.1
2-Butanone	0.025	0.045	0.039	0.043	0.042						0.039	21.1
cis-1,2-Dichloroethene	0.389	0.448	0.364	0.397	0.371	0.415					0.397	7.8
Bromochloromethane	0.187	0.219	0.180	0.185	0.170	0.205					0.191	9.4
Chloroform	0.936	1.058	0.872	0.929	0.913	1.023					0.955	7.4
1,1,1-Trichloroethane	0.869	1.050	0.890	0.922	0.941	1.067					0.957	8.7
Carbon tetrachloride	0.751	0.904	0.773	0.798	0.837	0.830					0.815	6.7
1,2-Dichloroethane	1.041	1.238	1.015	1.062	1.079	1.193					1.105	8.1
Benzene	1.377	1.586	1.294	1.418	1.329	1.450					1.409	7.4
Trichloroethene	0.383	0.431	0.351	0.381	0.366	0.396					0.385	7.2
1,2-Dichloropropane	0.422	0.483	0.394	0.439	0.417	0.434					0.432	6.9
Bromodichloromethane	0.681	0.817	0.692	0.747	0.751	0.735					0.737	6.6
cis-1,3-Dichloropropene	0.541	0.708	0.617	0.692	0.683	0.528					0.628	12.6
4-Methyl-2-pentanone	0.521	0.644	0.546	0.618	0.645						0.595	9.7
Toluene	1.507	1.742	1.437	1.548	1.542	1.581					1.559	6.5

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

SW846

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date(s): 10/22/2014 10/22/2014

Heated Purge: (Y/N) N Calibration Times: 15:03 18:10

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7704.D RRF020 = V8D7703.D RRF050 = V8D7702.D RRF100 = V8D7708.D RRF200 = V8D7707.D
RRF001 = V8D7706.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					$\overline{RRF}$	% RSD
trans-1,3-Dichloropropene	0.541	0.742	0.637	0.724	0.748	0.547					0.657	14.6
1,1,2-Trichloroethane	0.333	0.389	0.325	0.352	0.344	0.342					0.347	6.4
Tetrachloroethene	0.395	0.430	0.356	0.380	0.355	0.406					0.387	7.6
2-Hexanone	0.320	0.489	0.431	0.476	0.491						0.441	16.4
Dibromochloromethane	0.478	0.593	0.504	0.557	0.560	0.461					0.526	9.9
1,2-Dibromoethane	0.415	0.499	0.423	0.451	0.439	0.393					0.437	8.4
Chlorobenzene	1.127	1.282	1.046	1.123	1.065	1.181					1.137	7.5
Ethylbenzene	0.553	0.644	0.560	0.609	0.569	0.530					0.577	7.2
Xylene (Total)	0.658	0.811	0.680	0.734	0.698	0.614					0.699	9.7
Styrene	0.957	1.342	1.118	1.225	1.199	0.947					1.131	13.8
Bromoform	0.300	0.369	0.323	0.370	0.379	0.256					0.333	14.7
Isopropylbenzene	1.730	2.222	1.899	1.994	2.006	1.626					1.913	11.1
1,1,2,2-Tetrachloroethane	0.934	0.981	0.818	0.883	0.834	1.037					0.915	9.3
1,3-Dichlorobenzene	1.530	1.707	1.440	1.508	1.443	1.515					1.524	6.4
1,4-Dichlorobenzene	1.618	1.783	1.500	1.561	1.494	2.093					1.675	13.8
1,2-Dichlorobenzene	1.500	1.702	1.389	1.460	1.401	1.585					1.506	7.9
1,2-Dibromo-3-chloropropane	0.192	0.246	0.205	0.225	0.234	0.230					0.222	9.0
1,2,4-Trichlorobenzene	0.961	1.063	0.934	1.004	0.989	0.936					0.981	5.0
1,2,3-Trichlorobenzene	0.898	1.006	0.858	0.942	0.924	0.979					0.934	5.7
1,1,2-Trichloro-1,2,2-trifluoroe	0.473	0.501	0.410	0.396	0.392	0.494					0.444	11.4
Cyclohexane	0.760	0.918	0.784	0.790	0.814	0.810					0.813	6.8
Methyl acetate	0.682	0.802	0.660	0.741	0.724	0.849					0.743	9.6
Methylcyclohexane	0.502	0.622	0.522	0.523	0.539	0.586					0.549	8.3

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date(s): 10/22/2014 10/22/2014

Heated Purge: (Y/N) N Calibration Times: 15:03 18:10

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7704.D RRF020 = V8D7703.D RRF050 = V8D7702.D RRF100 = V8D7708.D RRF200 = V8D7707.D

RRF001 = V8D7706.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					$\overline{RRF}$	% RSD
Dibromofluoromethane	0.356	0.349	0.354	0.341	0.354						0.351	1.8
1,2-Dichloroethane-d4	0.061	0.058	0.061	0.062	0.060						0.060	2.7
Toluene-d8	1.281	1.268	1.267	1.265	1.258						1.268	0.6
Bromofluorobenzene	0.633	0.643	0.659	0.652	0.669						0.651	2.1

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/22/2014 Time: 18:41

Lab File ID: V8D7709.D Init. Calib. Date(s): 10/22/2014 10/22/2014

EPA Sample No.(VSTD#####) VICV05010S Init. Calib. Time(s): 15:03 18:10

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.639	0.567	0.100	-11.2	20.0
Chloromethane	0.722	0.691	0.100	-4.3	20.0
Vinyl chloride	0.517	0.518	0.100	0.3	20.0
Bromomethane	0.168	0.193	0.100	15.0	20.0
Chloroethane	0.294	0.271	0.100	-7.7	20.0
Trichlorofluoromethane	0.940	0.831	0.100	-11.6	20.0
1,1-Dichloroethene	0.343	0.346	0.100	1.1	20.0
Acetone	0.041	0.039	0.100	-6.3	20.0
Carbon disulfide	1.044	1.054	0.100	1.0	20.0
Methylene chloride	0.383	0.374	0.100	-2.6	20.0
trans-1,2-Dichloroethene	0.362	0.361	0.100	-0.2	20.0
Methyl tert-butyl ether	1.323	1.306	0.100	-1.2	20.0
1,1-Dichloroethane	0.893	0.901	0.200	0.9	20.0
2-Butanone	0.039	0.038	0.100	-0.8	20.0
cis-1,2-Dichloroethene	0.397	0.401	0.100	1.0	20.0
Bromochloromethane	0.191	0.201	0.100	5.3	20.0
Chloroform	0.955	0.926	0.200	-3.1	20.0
1,1,1-Trichloroethane	0.957	0.918	0.100	-4.0	20.0
Carbon tetrachloride	0.815	0.784	0.100	-3.8	20.0
1,2-Dichloroethane	1.105	1.030	0.100	-6.8	20.0
Benzene	1.409	1.426	0.500	1.2	20.0
Trichloroethene	0.385	0.390	0.200	1.3	20.0
1,2-Dichloropropane	0.432	0.435	0.100	0.8	20.0
Bromodichloromethane	0.737	0.725	0.200	-1.7	20.0
cis-1,3-Dichloropropene	0.628	0.664	0.200	5.8	20.0
4-Methyl-2-pentanone	0.595	0.585	0.100	-1.7	20.0
Toluene	1.559	1.547	0.400	-0.8	20.0
trans-1,3-Dichloropropene	0.657	0.685	0.100	4.3	20.0
1,1,2-Trichloroethane	0.347	0.347	0.100	-0.2	20.0
Tetrachloroethene	0.387	0.383	0.200	-0.9	20.0
2-Hexanone	0.441	0.454	0.100	2.9	20.0
Dibromochloromethane	0.526	0.539	0.100	2.5	20.0
1,2-Dibromoethane	0.437	0.446	0.100	2.2	20.0
Chlorobenzene	1.137	1.121	0.500	-1.4	20.0
Ethylbenzene	0.577	0.590	0.100	2.2	20.0
Xylene (Total)	0.699	0.723	0.100	3.4	20.0
Styrene	1.131	1.215	0.300	7.4	20.0
Bromoform	0.333	0.341	0.100	2.5	20.0
Isopropylbenzene	1.913	1.976	0.100	3.3	20.0
1,1,2,2-Tetrachloroethane	0.915	0.878	0.300	-4.0	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/22/2014 Time: 18:41

Lab File ID: V8D7709.D Init. Calib. Date(s): 10/22/2014 10/22/2014

EPA Sample No.(VSTD#####) VICV05010S Init. Calib. Time(s): 15:03 18:10

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.524	1.515	0.600	-0.6	20.0
1,4-Dichlorobenzene	1.675	1.606	0.500	-4.1	20.0
1,2-Dichlorobenzene	1.506	1.532	0.400	1.7	20.0
1,2-Dibromo-3-chloropropane	0.222	0.215	0.050	-3.4	20.0
1,2,4-Trichlorobenzene	0.981	0.996	0.200	1.6	20.0
1,2,3-Trichlorobenzene	0.934	0.939	0.100	0.5	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.444	0.410	0.100	-7.9	20.0
Cyclohexane	0.813	0.800	0.100	-1.5	20.0
Methyl acetate	0.743	0.721	0.100	-2.9	20.0
Methylcyclohexane	0.549	0.525	0.100	-4.4	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: V10 Calibration Date: 10/22/2014 Time: 18:41

Lab File ID: V8D7709.D Init. Calib. Date(s): 10/22/2014 10/22/2014

EPA Sample No.(VSTD#####) VICV05010S Init. Calib. Time(s): 15:03 18:10

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.351	0.347	0.100	-1.1	20.0
1,2-Dichloroethane-d4	0.060	0.066	0.100	9.9	20.0
Toluene-d8	1.268	1.262	0.100	-0.5	20.0
Bromofluorobenzene	0.651	0.649	0.100	-0.3	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79642

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: V8D7713.D Lab Sample ID: MB-79642

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/22/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 20:45

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79642	LCS-79642	V8D7710.D	19:12
02	LCSD-79642	LCSD-79642	V8D7711.D	19:43
03	MW01-14S-NWG-100914	N1822-47BMS	V8D7714.D	21:16
04	MW01-14S-NWG-100914	N1822-47BMSD	V8D7715.D	21:47

COMMENTS:

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79642

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79642

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7713.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/22/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79642

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79642

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7713.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/22/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79642

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79642 LCS Lot No.:

Date Extracted: 10/22/2014 Date Analyzed (1): 10/22/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	44.5343	89		30 - 155
Chloromethane	50.0000	0.0000	50.9506	102		40 - 125
Vinyl chloride	50.0000	0.0000	49.1143	98		50 - 145
Bromomethane	50.0000	0.0000	52.3021	105		30 - 145
Chloroethane	50.0000	0.0000	51.0641	102		60 - 135
Trichlorofluoromethane	50.0000	0.0000	43.7882	88		60 - 145
1,1-Dichloroethene	50.0000	0.0000	50.2383	100		70 - 130
Acetone	50.0000	0.0000	45.2116	90		40 - 140
Carbon disulfide	50.0000	0.0000	48.8155	98		35 - 160
Methylene chloride	50.0000	0.0000	45.8526	92		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	50.3335	101		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	49.0785	98		65 - 125
1,1-Dichloroethane	50.0000	0.0000	49.0531	98		70 - 135
2-Butanone	50.0000	0.0000	48.1212	96		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	49.4467	99		70 - 125
Bromochloromethane	50.0000	0.0000	51.4744	103		65 - 130
Chloroform	50.0000	0.0000	47.0440	94		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	47.4072	95		65 - 130
Carbon tetrachloride	50.0000	0.0000	48.3645	97		65 - 140
1,2-Dichloroethane	50.0000	0.0000	46.7805	94		70 - 130
Benzene	50.0000	0.0000	49.3889	99		80 - 120
Trichloroethene	50.0000	0.0000	48.3719	97		70 - 125
1,2-Dichloropropane	50.0000	0.0000	50.2905	101		75 - 125
Bromodichloromethane	50.0000	0.0000	47.9681	96		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	52.0237	104		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	49.5282	99		60 - 135
Toluene	50.0000	0.0000	49.2469	98		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	50.8434	102		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	49.2281	98		75 - 125
Tetrachloroethene	50.0000	0.0000	47.8917	96		45 - 150
2-Hexanone	50.0000	0.0000	48.1756	96		55 - 130
Dibromochloromethane	50.0000	0.0000	49.9944	100		60 - 135
1,2-Dibromoethane	50.0000	0.0000	50.0167	100		80 - 120
Chlorobenzene	50.0000	0.0000	48.0225	96		80 - 120
Ethylbenzene	50.0000	0.0000	49.1290	98		75 - 125
Xylene (Total)	150.0000	0.0000	150.7474	100		81 - 121
Styrene	50.0000	0.0000	50.4740	101		65 - 135
Bromoform	50.0000	0.0000	49.7262	99		70 - 130
Isopropylbenzene	50.0000	0.0000	50.8682	102		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	46.9991	94		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	48.2428	96		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	45.8231	92		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	49.0043	98		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	47.0334	94		50 - 130

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79642

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79642 LCS Lot No.:

Date Extracted: 10/22/2014 Date Analyzed (1): 10/22/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	48.3399	97		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	48.0487	96		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	45.7372	91		70 - 130
Cyclohexane	50.0000	0.0000	49.6766	99		70 - 130
Methyl acetate	50.0000	0.0000	47.4144	95		70 - 130
Methylcyclohexane	50.0000	0.0000	48.3702	97		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79642

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79642 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	44.5736	89		0		40	30 - 155
Chloromethane	50.0000	52.3600	105		3		40	40 - 125
Vinyl chloride	50.0000	48.1209	96		2		40	50 - 145
Bromomethane	50.0000	51.5885	103		2		40	30 - 145
Chloroethane	50.0000	50.5463	101		1		40	60 - 135
Trichlorofluoromethane	50.0000	43.4467	87		1		40	60 - 145
1,1-Dichloroethene	50.0000	49.4554	99		1		40	70 - 130
Acetone	50.0000	47.5435	95		5		40	40 - 140
Carbon disulfide	50.0000	48.8011	98		0		40	35 - 160
Methylene chloride	50.0000	47.6067	95		3		40	55 - 140
trans-1,2-Dichloroethene	50.0000	50.0491	100		1		40	60 - 140
Methyl tert-butyl ether	50.0000	50.7114	101		3		40	65 - 125
1,1-Dichloroethane	50.0000	50.8989	102		4		40	70 - 135
2-Butanone	50.0000	50.9780	102		6		40	30 - 150
cis-1,2-Dichloroethene	50.0000	51.1172	102		3		40	70 - 125
Bromochloromethane	50.0000	52.2266	104		1		40	65 - 130
Chloroform	50.0000	47.9126	96		2		40	65 - 135
1,1,1-Trichloroethane	50.0000	47.3233	95		0		40	65 - 130
Carbon tetrachloride	50.0000	47.6267	95		2		40	65 - 140
1,2-Dichloroethane	50.0000	47.5864	95		1		40	70 - 130
Benzene	50.0000	49.5021	99		0		40	80 - 120
Trichloroethene	50.0000	49.4387	99		2		40	70 - 125
1,2-Dichloropropane	50.0000	50.1889	100		1		40	75 - 125
Bromodichloromethane	50.0000	48.2176	96		0		40	75 - 120
cis-1,3-Dichloropropene	50.0000	51.9504	104		0		40	70 - 130
4-Methyl-2-pentanone	50.0000	51.9555	104		5		40	60 - 135
Toluene	50.0000	49.0629	98		0		40	75 - 120
trans-1,3-Dichloropropene	50.0000	52.1977	104		2		40	55 - 140
1,1,2-Trichloroethane	50.0000	49.8216	100		2		40	75 - 125
Tetrachloroethene	50.0000	48.8662	98		2		40	45 - 150
2-Hexanone	50.0000	51.7832	104		8		40	55 - 130
Dibromochloromethane	50.0000	52.0093	104		4		40	60 - 135
1,2-Dibromoethane	50.0000	52.7421	105		5		40	80 - 120
Chlorobenzene	50.0000	49.6438	99		3		40	80 - 120
Ethylbenzene	50.0000	51.9508	104		6		40	75 - 125
Xylene (Total)	150.0000	156.6838	104		4		40	81 - 121
Styrene	50.0000	52.3381	105		4		40	65 - 135
Bromoform	50.0000	53.5027	107		8		40	70 - 130
Isopropylbenzene	50.0000	51.9468	104		2		40	75 - 125
1,1,2,2-Tetrachloroethane	50.0000	50.9205	102		8		40	65 - 130
1,3-Dichlorobenzene	50.0000	50.6071	101		5		40	75 - 125
1,4-Dichlorobenzene	50.0000	47.3940	95		3		40	75 - 125
1,2-Dichlorobenzene	50.0000	49.3702	99		1		40	70 - 120
1,2-Dibromo-3-chloropropan	50.0000	51.4566	103		9		40	50 - 130
1,2,4-Trichlorobenzene	50.0000	49.8860	100		3		40	65 - 135
1,2,3-Trichlorobenzene	50.0000	49.0160	98		2		40	55 - 140

3 - FORM III

WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79642

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79642 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trif	50.0000	45.6374	91		0		40	70 - 130
Cyclohexane	50.0000	48.4641	97		2		40	70 - 130
Methyl acetate	50.0000	50.1757	100		5		40	70 - 130
Methylcyclohexane	50.0000	47.9097	96		1		40	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW01-14S-NWG-100914 Level: (TRACE or LOW) LOW

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	39.4307	79		30-155
Chloromethane	50.0000	0.0000	46.4244	93		40-125
Vinyl chloride	50.0000	0.0000	43.6514	87		50-145
Bromomethane	50.0000	0.0000	47.0638	94		30-145
Chloroethane	50.0000	0.0000	47.8133	96		60-135
Trichlorofluoromethane	50.0000	0.0000	41.6673	83		60-145
1,1-Dichloroethene	50.0000	0.0000	45.4137	91		70-130
Acetone	50.0000	0.0000	42.8174	86		40-140
Carbon disulfide	50.0000	0.0000	44.3677	89		35-160
Methylene chloride	50.0000	0.0000	45.5147	91		55-140
trans-1,2-Dichloroethen	50.0000	0.0000	45.1859	90		60-140
Methyl tert-butyl ether	50.0000	0.0000	48.5193	97		65-125
1,1-Dichloroethane	50.0000	0.0000	46.3545	93		70-135
2-Butanone	50.0000	0.0000	48.7867	98		30-150
cis-1,2-Dichloroethene	50.0000	0.0000	45.8895	92		70-125
Bromochloromethane	50.0000	0.0000	51.5510	103		65-130
Chloroform	50.0000	0.0000	46.5739	93		65-135
1,1,1-Trichloroethane	50.0000	0.0000	45.0658	90		65-130
Carbon tetrachloride	50.0000	0.0000	45.2488	90		65-140
1,2-Dichloroethane	50.0000	0.0000	48.5601	97		70-130
Benzene	50.0000	0.0000	46.8576	94		80-120
Trichloroethene	50.0000	0.0000	45.5209	91		70-125
1,2-Dichloropropane	50.0000	0.0000	46.6724	93		75-125
Bromodichloromethane	50.0000	0.0000	47.6128	95		75-120
cis-1,3-Dichloropropene	50.0000	0.0000	49.2331	98		70-130
4-Methyl-2-pentanone	50.0000	0.0000	48.2234	96		60-135
Toluene	50.0000	0.0000	45.6436	91		75-120
trans-1,3-Dichloroprope	50.0000	0.0000	49.1420	98		55-140
1,1,2-Trichloroethane	50.0000	0.0000	49.3445	99		75-125
Tetrachloroethene	50.0000	0.0000	43.5144	87		45-150
2-Hexanone	50.0000	0.0000	46.5588	93		55-130
Dibromochloromethane	50.0000	0.0000	50.2302	100		60-135
1,2-Dibromoethane	50.0000	0.0000	48.9679	98		80-120
Chlorobenzene	50.0000	0.0000	45.5551	91		80-120
Ethylbenzene	50.0000	0.0000	47.1125	94		75-125
Xylene (Total)	150.0000	0.0000	143.0503	95		81-121
Styrene	50.0000	0.0000	46.8245	94		65-135
Bromoform	50.0000	0.0000	49.0297	98		70-130
Isopropylbenzene	50.0000	0.0000	47.5815	95		75-125
1,1,2,2-Tetrachloroetha	50.0000	0.0000	45.3100	91		65-130
1,3-Dichlorobenzene	50.0000	0.0000	45.4812	91		75-125
1,4-Dichlorobenzene	50.0000	0.0000	43.7748	88		75-125
1,2-Dichlorobenzene	50.0000	0.0000	46.8949	94		70-120
1,2-Dibromo-3-chloropro	50.0000	0.0000	47.1326	94		50-130

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW01-14S-NWG-100914 Level: (TRACE or LOW) LOW

1,2,4-Trichlorobenzene	50.0000	0.0000	44.8364	90		65-135
1,2,3-Trichlorobenzene	50.0000	0.0000	44.7056	89		55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	0.0000	40.0038	80		70-130
Cyclohexane	50.0000	0.0000	41.5870	83		70-130
Methyl acetate	50.0000	0.0000	42.0114	84		70-130
Methylcyclohexane	50.0000	0.0000	41.0450	82		70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	44.6626	89		12		0-40	30-155
Chloromethane	50.0000	49.0666	98		6		0-40	40-125
Vinyl chloride	50.0000	48.4236	97		10		0-40	50-145
Bromomethane	50.0000	54.5371	109		15		0-40	30-145
Chloroethane	50.0000	50.9211	102		6		0-40	60-135
Trichlorofluoromethane	50.0000	46.0516	92		10		0-40	60-145
1,1-Dichloroethene	50.0000	47.9394	96		5		0-40	70-130
Acetone	50.0000	40.8217	82		5		0-40	40-140
Carbon disulfide	50.0000	47.8811	96		8		0-40	35-160
Methylene chloride	50.0000	45.6907	91		0		0-40	55-140
trans-1,2-Dichloroethen	50.0000	48.5216	97		7		0-40	60-140
Methyl tert-butyl ether	50.0000	47.0741	94		3		0-40	65-125
1,1-Dichloroethane	50.0000	49.0099	98		6		0-40	70-135
2-Butanone	50.0000	45.4411	91		7		0-40	30-150
cis-1,2-Dichloroethene	50.0000	48.6807	97		6		0-40	70-125
Bromochloromethane	50.0000	50.5114	101		2		0-40	65-130
Chloroform	50.0000	47.3759	95		2		0-40	65-135
1,1,1-Trichloroethane	50.0000	48.1840	96		7		0-40	65-130
Carbon tetrachloride	50.0000	48.1304	96		6		0-40	65-140
1,2-Dichloroethane	50.0000	47.6002	95		2		0-40	70-130
Benzene	50.0000	48.4407	97		3		0-40	80-120
Trichloroethene	50.0000	47.5192	95		4		0-40	70-125
1,2-Dichloropropane	50.0000	47.8161	96		2		0-40	75-125
Bromodichloromethane	50.0000	48.0900	96		1		0-40	75-120
cis-1,3-Dichloropropene	50.0000	49.3708	99		0		0-40	70-130
4-Methyl-2-pentanone	50.0000	45.9649	92		5		0-40	60-135
Toluene	50.0000	47.5630	95		4		0-40	75-120
trans-1,3-Dichloroprope	50.0000	48.7745	98		1		0-40	55-140
1,1,2-Trichloroethane	50.0000	48.3166	97		2		0-40	75-125
Tetrachloroethene	50.0000	47.3970	95		9		0-40	45-150
2-Hexanone	50.0000	43.5972	87		7		0-40	55-130
Dibromochloromethane	50.0000	48.9244	98		3		0-40	60-135
1,2-Dibromoethane	50.0000	47.6599	95		3		0-40	80-120
Chlorobenzene	50.0000	47.2165	94		4		0-40	80-120
Ethylbenzene	50.0000	49.6107	99		5		0-40	75-125
Xylene (Total)	150.0000	150.8482	101		5		0-40	81-121
Styrene	50.0000	48.8197	98		4		0-40	65-135

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW01-14S-NWG-100914 Level: (TRACE or LOW) LOW

Bromoform	50.0000	48.8529	98		0		0-40	70-130
Isopropylbenzene	50.0000	50.2825	101		6		0-40	75-125
1,1,2,2-Tetrachloroetha	50.0000	45.9485	92		1		0-40	65-130
1,3-Dichlorobenzene	50.0000	48.9302	98		7		0-40	75-125
1,4-Dichlorobenzene	50.0000	46.4482	93		6		0-40	75-125
1,2-Dichlorobenzene	50.0000	49.1225	98		5		0-40	70-120
1,2-Dibromo-3-chloropro	50.0000	48.1417	96		2		0-40	50-130
1,2,4-Trichlorobenzene	50.0000	47.1795	94		5		0-40	65-135
1,2,3-Trichlorobenzene	50.0000	46.2219	92		3		0-40	55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	45.0378	90		12		0-40	70-130
Cyclohexane	50.0000	47.2013	94		13		0-40	70-130
Methyl acetate	50.0000	39.6565	79		6		0-40	70-130
Methylcyclohexane	50.0000	46.3332	93		12		0-40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

COMMENTS:

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 8270D, SVOA by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8270D

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: S6
Instrument Type: GCMS-Semi

Description: HP7890A
Manufacturer: Agilent
Model: 7890A/5973
GC Column used: 30 m X 0.25 mm ID [0.25 um thickness] Rxi-5sil MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits with the following exceptions. Please note that the acceptance criteria allow one surrogate recovery outside of the QC limits per fraction.

MW03-15I-NWG-092914 (N1822-04B), recovery is above criteria for 2-Fluorobiphenyl at 112% with criteria of (50-110).

FD01-093014 (N1822-09B), recovery is above criteria for 2-Fluorobiphenyl at 110% with criteria of (50-110).

MW03-15S-NWG-100114 (N1822-18C), recovery is above criteria for 2-Fluorobiphenyl at 115% with criteria of (50-110).

MW03-16S-NWG-100614 (N1822-37B), recovery is above criteria for 2-Fluorobiphenyl at 117% with criteria of (50-110).

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits with the following exceptions. Please note 1,4-Dioxane was not included in the LCS spike.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW03-15I-NWG-092914 (N1822-04BMS) and MW03-15I-NWG-092914 (N1822-04BMSD).

Percent recoveries were within the QC limits with the following exceptions:

MW03-15I-NWG-092914 (N1822-04BMSD), recovery is above criteria for Pentachlorophenol at 116% with criteria of (40-115).

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

Manual integrations were performed on the following:

LCS-79360 4-Nitrophenol due to M1

LCS-79478 4-Nitrophenol due to M1

LCSD-79478 4-Nitrophenol due to M1

SSTD0056L 2,4-Dinitrophenol due to M6

SSTD0256L 2,4-Dinitrophenol due to M6

SSTD0256N 2-Methylnaphthalene due to M1

SSTD025L6 Indeno(1,2,3-cd)pyrene due to M1

SSTD0406L Nitrobenzene due to M6

SSTD0606L 2,4-Dinitrophenol , Nitrobenzene due to M6

SSTD0806L 2,4-Dinitrophenol , Indeno(1,2,3-cd)pyrene, Nitrobenzene due to M6

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____12/2/2014_____

2H - FORM II SV-2

WATER SEMIVOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

	EPA SAMPLE NO.	SDMC1 (NBZ) #	SDMC2 (FBP) #	SDMC3 (TPH) #	SDMC4 (PHL) #	SDMC5 (2FP) #	SDMC6 (TBP) #			TOT OUT
01	MB-79360	85	86	93	33	47	93			0
02	LCS-79360	83	86	84	15	32	76			0
03	MB-79478	87	90	97	20	36	92			0
04	LCS-79478	88	94	95	20	39	92			0
05	LCSD-79478	88	93	89	17	33	89			0
06	MW03-02S-NWG-092914	106	108	97	14	29	110			0
07	MW03-15I-NWG-092914	105	112 *	99	14	30	112			1
08	FD01-093014	106	110 *	94	15	31	109			1
09	RB01-100114	102	106	97	13	28	104			0
10	MW03-15S-NWG-100114	110	115 *	100	15	30	109			1
11	MW03-16S-NWG-100614	108	117 *	96	14	30	114			1
12	MW03-15I-NWG-092914MS	93	98	79	18	25	93			0
13	MW03-15I-NWG-092914MSD	101	103	76	21	30	98			0
14	MW03-17S-NWG-093014	100	100	79	14	26	104			0
15	MW03-17I-NWG-100214	97	95	89	14	29	99			0

		QC LIMITS
SDMC1	(NBZ) = Nitrobenzene-d5	(40-110)
SDMC2	(FBP) = 2-Fluorobiphenyl	(50-110)
SDMC3	(TPH) = Terphenyl-d14	(50-135)
SDMC4	(PHL) = Phenol-d5	(10-115)
SDMC5	(2FP) = 2-Fluorophenol	(20-110)
SDMC6	(TBP) = 2,4,6-Tribromophenol	(40-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

som14.10.02.1616

8C - FORM VIII SV-1

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD025L6 Date Analyzed: 10/24/2014

Lab File ID (Standard): S6B9926.D Time Analyzed: 13:15

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	156332		3.878		563371		4.965		371500		6.411	
	UPPER LIMIT	312664		4.378		1126742		5.465		743000		6.911	
	LOWER LIMIT	78166		3.378		281686		4.465		185750		5.911	
	EPA SAMPLE NO.												
01	MB-79360	160274		3.872		556508		4.959		362387		6.405	
02	LCS-79360	169210		3.878		603957		4.965		387030		6.410	
03	MB-79478	167809		3.878		573063		4.965		372214		6.405	
04	LCS-79478	166812		3.878		586119		4.965		380335		6.410	
05	LCSD-79478	162326		3.878		578002		4.965		381070		6.410	
06	MW03-02S-NWG-092914	139350		3.878		504100		4.965		328225		6.405	
07	MW03-15I-NWG-092914	142256		3.878		501959		4.965		325600		6.405	
08	FD01-093014	144079		3.878		484515		4.959		315480		6.405	
09	RB01-100114	144193		3.878		510076		4.965		332519		6.405	
10	MW03-15S-NWG-100114	138750		3.878		482243		4.965		306482		6.405	
11	MW03-16S-NWG-100614	132524		3.878		471240		4.965		292318		6.405	

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8C - FORM VIII SV-1

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD0256N Date Analyzed: 10/27/2014

Lab File ID (Standard): S6B9961.D Time Analyzed: 15:27

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	164609		3.843		589712		4.93		396600		6.375	
	UPPER LIMIT	329218		4.343		1179424		5.43		793200		6.875	
	LOWER LIMIT	82305		3.343		294856		4.43		198300		5.875	
	EPA SAMPLE NO.												
01	MW03-15I-NWG-092914MS	180806		3.843		673516		4.930		456245		6.375	
02	MW03-15I-NWG-092914MSD	173273		3.843		651654		4.930		450015		6.375	
03	MW03-17S-NWG-093014	176760		3.843		644535		4.930		443585		6.369	
04	MW03-17I-NWG-100214	178511		3.843		668377		4.930		463602		6.369	

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8D - FORM VIII SV-2

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

EPA Sample No.(SSTD020##) SSTD025L6 Date Analyzed: 10/24/2014

Lab File ID (Standard): S6B9926.D Time Analyzed: 13:15

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	790585		7.615		897825		9.789		788934		11.129	
	UPPER LIMIT	1581170		8.115		1795650		10.289		1577868		11.629	
	LOWER LIMIT	395293		7.115		448913		9.289		394467		10.629	
	EPA SAMPLE NO.												
01	MB-79360	736742		7.615		822235		9.807		736185		11.164	
02	LCS-79360	815942		7.615		904949		9.789		799868		11.123	
03	MB-79478	753797		7.615		825824		9.783		741094		11.117	
04	LCS-79478	767753		7.621		846321		9.789		744685		11.123	
05	LCSD-79478	766495		7.621		889737		9.783		764681		11.111	
06	MW03-02S-NWG-092914	665984		7.615		736718		9.777		655038		11.111	
07	MW03-15I-NWG-092914	687945		7.615		730712		9.777		658231		11.105	
08	FD01-093014	642683		7.615		701395		9.777		625946		11.105	
09	RB01-100114	681929		7.615		740517		9.771		652034		11.099	
10	MW03-15S-NWG-100114	636456		7.615		690552		9.777		628151		11.099	
11	MW03-16S-NWG-100614	606442		7.615		692316		9.777		607619		11.099	

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8D - FORM VIII SV-2

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

EPA Sample No.(SSTD020##) SSTD0256N Date Analyzed: 10/27/2014

Lab File ID (Standard): S6B9961.D Time Analyzed: 15:27

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	873917		7.58		1120240		9.748		998974		11.058	
	UPPER LIMIT	1747834		8.08		2240480		10.248		1997948		11.558	
	LOWER LIMIT	436959		7.08		560120		9.248		499487		10.558	
	EPA SAMPLE NO.												
01	MW03-15I-NWG-092914MS	992284		7.586		1231020		9.748		1061812		11.052	
02	MW03-15I-NWG-092914MSD	973349		7.586		1225703		9.748		1051231		11.052	
03	MW03-17S-NWG-093014	942752		7.580		1157152		9.736		1011246		11.040	
04	MW03-17I-NWG-100214	1025318		7.580		1258946		9.736		1131492		11.046	

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

4C - FORM IV SV

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79360

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9927.D Lab Sample ID: MB-79360

Instrument ID: S6 Date Extracted: 10/06/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/24/2014

Level: (LOW/MED) LOW Time Analyzed: 14:20

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79360	LCS-79360	S6B9928.D	10/24/2014
02	MW03-02S-NWG-092914	N1822-02B	S6B9932.D	10/24/2014
03	MW03-15I-NWG-092914	N1822-04B	S6B9933.D	10/24/2014
04	FD01-093014	N1822-09B	S6B9936.D	10/24/2014
05	RB01-100114	N1822-14C	S6B9938.D	10/24/2014
06	MW03-15S-NWG-100114	N1822-18C	S6B9939.D	10/24/2014
07	MW03-15I-NWG-092914MS	N1822-04BMS	S6B9965.D	10/27/2014
08	MW03-15I-NWG-092914MSD	N1822-04BMSD	S6B9966.D	10/27/2014
09	MW03-17S-NWG-093014	N1822-11B	S6B9967.D	10/27/2014
10	MW03-17I-NWG-100214	N1822-25C	S6B9968.D	10/27/2014

COMMENTS:

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79360

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79360

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9927.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79360

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79360

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9927.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	7.0	J	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-79360

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79360

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9927.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

[2]EPA-designated Registry Number.

3C - FORM III SV-1

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
Phenol	50.0000	0.0000	7.0193	14		0-115
Bis(2-chloroethyl)ether	50.0000	0.0000	46.7368	93		35-110
2-Chlorophenol	50.0000	0.0000	30.0844	60		35-105
2-Methylphenol	50.0000	0.0000	22.1096	44		40-110
2,2´-oxybis(1-Chloropro	50.0000	0.0000	41.9007	84		30-123
4-Methylphenol	50.0000	0.0000	18.9681	38		30-110
N-Nitroso-di-n-propylam	50.0000	0.0000	42.6588	85		35-130
Hexachloroethane	50.0000	0.0000	38.4740	77		30-95
Nitrobenzene	50.0000	0.0000	39.6342	79		45-110
Isophorone	50.0000	0.0000	53.9526	108		50-110
2-Nitrophenol	50.0000	0.0000	41.4825	83		40-115
2,4-Dimethylphenol	50.0000	0.0000	28.3355	57		30-110
2,4-Dichlorophenol	50.0000	0.0000	37.2286	74		50-105
Naphthalene	50.0000	0.0000	44.1662	88		40-100
4-Chloroaniline	50.0000	0.0000	39.3661	79		15-110
Bis(2-chloroethoxy)meth	50.0000	0.0000	44.0692	88		45-105
Hexachlorobutadiene	50.0000	0.0000	38.8051	78		25-105
4-Chloro-3-methylphenol	50.0000	0.0000	32.6274	65		45-110
2-Methylnaphthalene	50.0000	0.0000	31.4395	63		45-105
Hexachlorocyclopentadie	50.0000	0.0000	42.9496	86		27-147
2,4,6-Trichlorophenol	50.0000	0.0000	44.0630	88		50-115
2,4,5-Trichlorophenol	50.0000	0.0000	45.7530	92		50-110
2-Chloronaphthalene	50.0000	0.0000	48.3644	97		50-105
2-Nitroaniline	50.0000	0.0000	47.3489	95		50-115
Dimethylphthalate	50.0000	0.0000	51.7637	104		25-125
Acenaphthylene	50.0000	0.0000	48.6580	97		50-105
2,6-Dinitrotoluene	50.0000	0.0000	50.4665	101		50-115
3-Nitroaniline	50.0000	0.0000	39.6670	79		20-125
Acenaphthene	50.0000	0.0000	47.9758	96		45-110
2,4-Dinitrophenol	50.0000	0.0000	22.3661	45		15-140
4-Nitrophenol	50.0000	0.0000	9.9648	20		0-125
Dibenzofuran	50.0000	0.0000	46.5165	93		55-105
2,4-Dinitrotoluene	50.0000	0.0000	49.5693	99		50-120
Diethylphthalate	50.0000	0.0000	51.5667	103		40-120
4-Chlorophenyl-phenylet	50.0000	0.0000	49.5070	99		50-110
Fluorene	50.0000	0.0000	49.2059	98		50-110
4-Nitroaniline	50.0000	0.0000	43.3359	87		35-120
4,6-Dinitro-2-methylphe	50.0000	0.0000	45.5538	91		40-130
N-Nitrosodiphenylamine	50.0000	0.0000	47.1309	94		50-110
4-Bromophenyl-phenyleth	50.0000	0.0000	50.8525	102		50-115
Hexachlorobenzene	50.0000	0.0000	51.9727	104		50-110
Pentachlorophenol	50.0000	0.0000	55.0954	110		40-115
Phenanthrene	50.0000	0.0000	50.5981	101		50-115
Anthracene	50.0000	0.0000	49.4008	99		55-110

3C - FORM III SV-1

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

Carbazole	50.0000	0.0000	45.9390	92		50-115
Di-n-butylphthalate	50.0000	7.2305	62.1018	110		55-115
Fluoranthene	50.0000	0.0000	50.7005	101		55-115
Pyrene	50.0000	0.0000	46.7334	93		50-130
Butylbenzylphthalate	50.0000	0.0000	50.5101	101		45-115
3,3'-Dichlorobenzidine	50.0000	0.0000	44.2516	89		20-110
Benzo(a)anthracene	50.0000	0.0000	48.6752	97		55-110
Chrysene	50.0000	0.0000	49.7909	100		55-110
Bis(2-ethylhexyl)phthal	50.0000	0.0000	49.8857	100		40-125
Di-n-octylphthalate	50.0000	0.0000	52.0178	104		35-135
Benzo(b)fluoranthene	50.0000	0.0000	51.6881	103		45-120
Benzo(k)fluoranthene	50.0000	0.0000	49.9826	100		45-125
Benzo(a)pyrene	50.0000	0.0000	48.8954	98		55-110
Indeno(1,2,3-cd)pyrene	50.0000	0.0000	55.3530	111		45-125
Dibenzo(a,h)anthracene	50.0000	0.0000	49.7766	100		40-125
Benzo(g,h,i)perylene	50.0000	0.0000	48.9490	98		40-125
1,1'-Biphenyl	50.0000	0.0000	47.1363	94		55-108
Acetophenone	50.0000	0.0000	46.4336	93		56-145
Atrazine	50.0000	0.0000	44.2786	89		52-175
Benzaldehyde	50.0000	0.0000	58.9946	118		10-133
Caprolactam	50.0000	0.0000	5.7145	11		10-146

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	50.0000	9.5650	19		31		0-40	0-115
Bis(2-chloroethyl)ether	50.0000	50.4003	101		8		0-40	35-110
2-Chlorophenol	50.0000	34.2807	69		13		0-40	35-105
2-Methylphenol	50.0000	25.3477	51		14		0-40	40-110
2,2'-oxybis(1-Chloropro	50.0000	46.5930	93		11		0-40	30-123
4-Methylphenol	50.0000	22.8191	46		18		0-40	30-110
N-Nitroso-di-n-propylam	50.0000	47.6075	95		11		0-40	35-130
Hexachloroethane	50.0000	44.1701	88		14		0-40	30-95
Nitrobenzene	50.0000	43.7659	88		10		0-40	45-110
Isophorone	50.0000	53.1172	106		2		0-40	50-110
2-Nitrophenol	50.0000	46.0495	92		10		0-40	40-115
2,4-Dimethylphenol	50.0000	33.7825	68		18		0-40	30-110
2,4-Dichlorophenol	50.0000	41.6774	83		11		0-40	50-105
Naphthalene	50.0000	48.3418	97		9		0-40	40-100
4-Chloroaniline	50.0000	39.8534	80		1		0-40	15-110
Bis(2-chloroethoxy)meth	50.0000	48.3424	97		9		0-40	45-105
Hexachlorobutadiene	50.0000	43.8103	88		12		0-40	25-105
4-Chloro-3-methylphenol	50.0000	35.1718	70		8		0-40	45-110
2-Methylnaphthalene	50.0000	33.0806	66		5		0-40	45-105
Hexachlorocyclopentadie	50.0000	45.1353	90		5		0-40	27-147
2,4,6-Trichlorophenol	50.0000	45.9470	92		4		0-40	50-115
2,4,5-Trichlorophenol	50.0000	46.8253	94		2		0-40	50-110

3C - FORM III SV-1

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

2-Chloronaphthalene	50.0000	49.9072	100		3		0-40	50-105
2-Nitroaniline	50.0000	50.6877	101		7		0-40	50-115
Dimethylphthalate	50.0000	52.7773	106		2		0-40	25-125
Acenaphthylene	50.0000	51.9657	104		7		0-40	50-105
2,6-Dinitrotoluene	50.0000	51.3774	103		2		0-40	50-115
3-Nitroaniline	50.0000	40.9091	82		3		0-40	20-125
Acenaphthene	50.0000	50.3253	101		5		0-40	45-110
2,4-Dinitrophenol	50.0000	30.0124	60		29		0-40	15-140
4-Nitrophenol	50.0000	12.7463	25		24		0-40	0-125
Dibenzofuran	50.0000	47.9419	96		3		0-40	55-105
2,4-Dinitrotoluene	50.0000	52.4793	105		6		0-40	50-120
Diethylphthalate	50.0000	54.1698	108		5		0-40	40-120
4-Chlorophenyl-phenylet	50.0000	51.9145	104		5		0-40	50-110
Fluorene	50.0000	50.8272	102		3		0-40	50-110
4-Nitroaniline	50.0000	45.4602	91		5		0-40	35-120
4,6-Dinitro-2-methylphe	50.0000	48.4347	97		6		0-40	40-130
N-Nitrosodiphenylamine	50.0000	48.8159	98		4		0-40	50-110
4-Bromophenyl-phenyleth	50.0000	52.4396	105		3		0-40	50-115
Hexachlorobenzene	50.0000	53.2451	106		2		0-40	50-110
Pentachlorophenol	50.0000	57.8775	116	*	5		0-40	40-115
Phenanthrene	50.0000	52.2798	105		3		0-40	50-115
Anthracene	50.0000	52.1750	104		5		0-40	55-110
Carbazole	50.0000	48.6965	97		6		0-40	50-115
Di-n-butylphthalate	50.0000	60.2281	106		3		0-40	55-115
Fluoranthene	50.0000	52.5104	105		4		0-40	55-115
Pyrene	50.0000	48.4540	97		4		0-40	50-130
Butylbenzylphthalate	50.0000	52.7699	106		4		0-40	45-115
3,3´-Dichlorobenzidine	50.0000	46.7772	94		6		0-40	20-110
Benzo(a)anthracene	50.0000	51.2264	102		5		0-40	55-110
Chrysene	50.0000	52.1111	104		5		0-40	55-110
Bis(2-ethylhexyl)phthal	50.0000	50.5322	101		1		0-40	40-125
Di-n-octylphthalate	50.0000	53.4118	107		3		0-40	35-135
Benzo(b)fluoranthene	50.0000	57.2815	115		10		0-40	45-120
Benzo(k)fluoranthene	50.0000	50.1371	100		0		0-40	45-125
Benzo(a)pyrene	50.0000	51.6033	103		5		0-40	55-110
Indeno(1,2,3-cd)pyrene	50.0000	58.5554	117		6		0-40	45-125
Dibenzo(a,h)anthracene	50.0000	52.0605	104		4		0-40	40-125
Benzo(g,h,i)perylene	50.0000	51.7830	104		6		0-40	40-125
1,1´-Biphenyl	50.0000	49.1489	98		4		0-40	55-108
Acetophenone	50.0000	51.4518	103		10		0-40	56-145
Atrazine	50.0000	40.7120	81		8		0-40	52-175
Benzaldehyde	50.0000	64.0425	128		8		0-40	10-133
Caprolactam	50.0000	6.0492	12		6		0-40	10-146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

3C - FORM III SV-1

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract: _____

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: _____ SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

RPD: 0 out of 65 outside limits

Spike Recovery: 1 out of 130 outside limits

COMMENTS: _____

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79360

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79360 LCS Lot No.: A0103342

Date Extracted: 10/06/2014 Date Analyzed (1): 10/24/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Phenol	50.0000	0.0000	9.2113	18		0 - 115
Bis(2-chloroethyl)ether	50.0000	0.0000	40.9777	82		35 - 110
2-Chlorophenol	50.0000	0.0000	28.8862	58		35 - 105
2-Methylphenol	50.0000	0.0000	22.9717	46		40 - 110
2,2´-oxybis(1-Chloropropan	50.0000	0.0000	35.4197	71		30 - 123
4-Methylphenol	50.0000	0.0000	20.3169	41		30 - 110
N-Nitroso-di-n-propylamine	50.0000	0.0000	35.5104	71		35 - 130
Hexachloroethane	50.0000	0.0000	34.7248	69		30 - 95
Nitrobenzene	50.0000	0.0000	35.5003	71		45 - 110
Isophorone	50.0000	0.0000	43.4592	87		50 - 110
2-Nitrophenol	50.0000	0.0000	37.1350	74		40 - 115
2,4-Dimethylphenol	50.0000	0.0000	30.2586	61		30 - 110
2,4-Dichlorophenol	50.0000	0.0000	35.2219	70		50 - 105
Naphthalene	50.0000	0.0000	38.3271	77		40 - 100
4-Chloroaniline	50.0000	0.0000	33.3456	67		15 - 110
Bis(2-chloroethoxy)methane	50.0000	0.0000	39.6338	79		45 - 105
Hexachlorobutadiene	50.0000	0.0000	34.6432	69		25 - 105
4-Chloro-3-methylphenol	50.0000	0.0000	29.0206	58		45 - 110
2-Methylnaphthalene	50.0000	0.0000	26.4134	53		45 - 105
Hexachlorocyclopentadiene	50.0000	0.0000	32.9768	66		27 - 147
2,4,6-Trichlorophenol	50.0000	0.0000	40.2410	80		50 - 115
2,4,5-Trichlorophenol	50.0000	0.0000	38.5877	77		50 - 110
2-Chloronaphthalene	50.0000	0.0000	41.0991	82		50 - 105
2-Nitroaniline	50.0000	0.0000	42.1639	84		50 - 115
Dimethylphthalate	50.0000	0.0000	45.7158	91		25 - 125
Acenaphthylene	50.0000	0.0000	41.8609	84		50 - 105
2,6-Dinitrotoluene	50.0000	0.0000	42.1519	84		50 - 115
3-Nitroaniline	50.0000	0.0000	34.9992	70		20 - 125
Acenaphthene	50.0000	0.0000	43.1885	86		45 - 110
2,4-Dinitrophenol	50.0000	0.0000	27.6030	55		15 - 140
4-Nitrophenol	50.0000	0.0000	12.3827	25		0 - 125
Dibenzofuran	50.0000	0.0000	41.2951	83		55 - 105
2,4-Dinitrotoluene	50.0000	0.0000	41.6129	83		50 - 120
Diethylphthalate	50.0000	0.0000	44.7778	90		40 - 120
4-Chlorophenyl-phenylether	50.0000	0.0000	43.1362	86		50 - 110
Fluorene	50.0000	0.0000	42.7698	86		50 - 110
4-Nitroaniline	50.0000	0.0000	37.8680	76		35 - 120
4,6-Dinitro-2-methylphenol	50.0000	0.0000	35.3867	71		40 - 130
N-Nitrosodiphenylamine	50.0000	0.0000	42.4961	85		50 - 110
4-Bromophenyl-phenylether	50.0000	0.0000	44.1562	88		50 - 115
Hexachlorobenzene	50.0000	0.0000	45.3215	91		50 - 110
Pentachlorophenol	50.0000	0.0000	40.4803	81		40 - 115
Phenanthrene	50.0000	0.0000	43.3821	87		50 - 115
Anthracene	50.0000	0.0000	42.2776	85		55 - 110

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79360

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79360 LCS Lot No.: A0103342

Date Extracted: 10/06/2014 Date Analyzed (1): 10/24/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Carbazole	50.0000	0.0000	40.2397	80		50 - 115
Di-n-butylphthalate	50.0000	0.0000	53.6375	107		55 - 115
Fluoranthene	50.0000	0.0000	41.7358	83		55 - 115
Pyrene	50.0000	0.0000	43.6749	87		50 - 130
Butylbenzylphthalate	50.0000	0.0000	46.0969	92		45 - 115
3,3´-Dichlorobenzidine	50.0000	0.0000	39.3219	79		20 - 110
Benzo(a)anthracene	50.0000	0.0000	43.2781	87		55 - 110
Chrysene	50.0000	0.0000	44.8114	90		55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	0.0000	44.4460	89		40 - 125
Di-n-octylphthalate	50.0000	0.0000	45.0873	90		35 - 135
Benzo(b)fluoranthene	50.0000	0.0000	41.2363	82		45 - 120
Benzo(k)fluoranthene	50.0000	0.0000	46.6145	93		45 - 125
Benzo(a)pyrene	50.0000	0.0000	43.6290	87		55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	0.0000	43.4333	87		45 - 125
Dibenzo(a,h)anthracene	50.0000	0.0000	44.9744	90		40 - 125
Benzo(g,h,i)perylene	50.0000	0.0000	45.5964	91		40 - 125
1,1´-Biphenyl	50.0000	0.0000	41.8278	84		55 - 108
Acetophenone	50.0000	0.0000	40.5032	81		56 - 145
Atrazine	50.0000	0.0000	39.9459	80		52 - 175
Benzaldehyde	50.0000	0.0000	51.8553	104		10 - 133
Caprolactam	50.0000	0.0000	8.0587	16		10 - 146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 65 outside limits

COMMENTS:

4C - FORM IV SV

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9929.D Lab Sample ID: MB-79478

Instrument ID: S6 Date Extracted: 10/11/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/24/2014

Level: (LOW/MED) LOW Time Analyzed: 15:00

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79478	LCS-79478	S6B9930.D	10/24/2014
02	LCSD-79478	LCSD-79478	S6B9931.D	10/24/2014
03	MW03-16S-NWG-100614	N1822-37B	S6B9941.D	10/24/2014

COMMENTS:

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79478

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9929.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2'-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79478

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9929.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	3.3	J	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79478

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9929.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

[2]EPA-designated Registry Number.

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79478 LCS Lot No.: A0103342

Date Extracted: 10/11/2014 Date Analyzed (1): 10/24/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Phenol	50.0000	0.0000	12.2600	25		0 - 115
Bis(2-chloroethyl)ether	50.0000	0.0000	43.2155	86		35 - 110
2-Chlorophenol	50.0000	0.0000	31.6771	63		35 - 105
2-Methylphenol	50.0000	0.0000	26.5781	53		40 - 110
2,2´-oxybis(1-Chloropropan	50.0000	0.0000	37.9689	76		30 - 123
4-Methylphenol	50.0000	0.0000	24.8786	50		30 - 110
N-Nitroso-di-n-propylamine	50.0000	0.0000	37.1117	74		35 - 130
Hexachloroethane	50.0000	0.0000	46.4803	93		30 - 95
Nitrobenzene	50.0000	0.0000	36.8389	74		45 - 110
Isophorone	50.0000	0.0000	44.7653	90		50 - 110
2-Nitrophenol	50.0000	0.0000	40.4509	81		40 - 115
2,4-Dimethylphenol	50.0000	0.0000	36.1263	72		30 - 110
2,4-Dichlorophenol	50.0000	0.0000	38.3304	77		50 - 105
Naphthalene	50.0000	0.0000	46.4317	93		40 - 100
4-Chloroaniline	50.0000	0.0000	30.0059	60		15 - 110
Bis(2-chloroethoxy)methane	50.0000	0.0000	41.9247	84		45 - 105
Hexachlorobutadiene	50.0000	0.0000	46.0518	92		25 - 105
4-Chloro-3-methylphenol	50.0000	0.0000	32.5009	65		45 - 110
2-Methylnaphthalene	50.0000	0.0000	31.9421	64		45 - 105
Hexachlorocyclopentadiene	50.0000	0.0000	50.4866	101		27 - 147
2,4,6-Trichlorophenol	50.0000	0.0000	41.4107	83		50 - 115
2,4,5-Trichlorophenol	50.0000	0.0000	41.2107	82		50 - 110
2-Chloronaphthalene	50.0000	0.0000	48.2442	96		50 - 105
2-Nitroaniline	50.0000	0.0000	44.8058	90		50 - 115
Dimethylphthalate	50.0000	0.0000	45.8966	92		25 - 125
Acenaphthylene	50.0000	0.0000	46.0921	92		50 - 105
2,6-Dinitrotoluene	50.0000	0.0000	44.9021	90		50 - 115
3-Nitroaniline	50.0000	0.0000	36.6714	73		20 - 125
Acenaphthene	50.0000	0.0000	45.8612	92		45 - 110
2,4-Dinitrophenol	50.0000	0.0000	22.0995	44		15 - 140
4-Nitrophenol	50.0000	0.0000	17.9551	36		0 - 125
Dibenzofuran	50.0000	0.0000	43.7471	87		55 - 105
2,4-Dinitrotoluene	50.0000	0.0000	44.6539	89		50 - 120
Diethylphthalate	50.0000	0.0000	45.8054	92		40 - 120
4-Chlorophenyl-phenylether	50.0000	0.0000	46.5753	93		50 - 110
Fluorene	50.0000	0.0000	44.7360	89		50 - 110
4-Nitroaniline	50.0000	0.0000	38.8180	78		35 - 120
4,6-Dinitro-2-methylphenol	50.0000	0.0000	41.1957	82		40 - 130
N-Nitrosodiphenylamine	50.0000	0.0000	45.4386	91		50 - 110
4-Bromophenyl-phenylether	50.0000	0.0000	47.3544	95		50 - 115
Hexachlorobenzene	50.0000	0.0000	49.8937	100		50 - 110
Pentachlorophenol	50.0000	0.0000	41.6081	83		40 - 115
Phenanthrene	50.0000	0.0000	46.7960	94		50 - 115
Anthracene	50.0000	0.0000	46.9885	94		55 - 110

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79478 LCS Lot No.: A0103342

Date Extracted: 10/11/2014 Date Analyzed (1): 10/24/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Carbazole	50.0000	0.0000	43.5985	87		50 - 115
Di-n-butylphthalate	50.0000	0.0000	50.2118	100		55 - 115
Fluoranthene	50.0000	0.0000	46.1206	92		55 - 115
Pyrene	50.0000	0.0000	47.8347	96		50 - 130
Butylbenzylphthalate	50.0000	0.0000	49.1228	98		45 - 115
3,3'-Dichlorobenzidine	50.0000	0.0000	25.4964	51		20 - 110
Benzo(a)anthracene	50.0000	0.0000	46.5390	93		55 - 110
Chrysene	50.0000	0.0000	47.9651	96		55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	0.0000	47.1407	94		40 - 125
Di-n-octylphthalate	50.0000	0.0000	48.2233	96		35 - 135
Benzo(b)fluoranthene	50.0000	0.0000	49.4023	99		45 - 120
Benzo(k)fluoranthene	50.0000	0.0000	47.4286	95		45 - 125
Benzo(a)pyrene	50.0000	0.0000	47.7884	96		55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	0.0000	56.2030	112		45 - 125
Dibenzo(a,h)anthracene	50.0000	0.0000	49.1503	98		40 - 125
Benzo(g,h,i)perylene	50.0000	0.0000	49.2606	99		40 - 125
1,1'-Biphenyl	50.0000	0.0000	45.7252	91		55 - 108
Acetophenone	50.0000	0.0000	41.9961	84		56 - 145
Atrazine	50.0000	0.0000	34.7332	69		52 - 175
Benzaldehyde	50.0000	0.0000	53.0517	106		10 - 133
Caprolactam	50.0000	0.0000	10.0039	20		10 - 146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 65 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79478 LCS Lot No.: A0103342

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	50.0000	10.2125	20		22		40	0 - 115
Bis(2-chloroethyl)ether	50.0000	43.5098	87		1		40	35 - 110
2-Chlorophenol	50.0000	31.7330	63		0		40	35 - 105
2-Methylphenol	50.0000	25.2220	50		6		40	40 - 110
2,2´-oxybis(1-Chloropropan	50.0000	38.3977	77		1		40	30 - 123
4-Methylphenol	50.0000	23.0467	46		8		40	30 - 110
N-Nitroso-di-n-propylamine	50.0000	38.0607	76		3		40	35 - 130
Hexachloroethane	50.0000	45.4203	91		2		40	30 - 95
Nitrobenzene	50.0000	37.7886	76		3		40	45 - 110
Isophorone	50.0000	44.9842	90		0		40	50 - 110
2-Nitrophenol	50.0000	39.0251	78		4		40	40 - 115
2,4-Dimethylphenol	50.0000	34.3396	69		4		40	30 - 110
2,4-Dichlorophenol	50.0000	37.3295	75		3		40	50 - 105
Naphthalene	50.0000	46.7977	94		1		40	40 - 100
4-Chloroaniline	50.0000	39.7306	79		27		40	15 - 110
Bis(2-chloroethoxy)methane	50.0000	42.1326	84		0		40	45 - 105
Hexachlorobutadiene	50.0000	47.0710	94		2		40	25 - 105
4-Chloro-3-methylphenol	50.0000	32.6744	65		0		40	45 - 110
2-Methylnaphthalene	50.0000	31.8012	64		0		40	45 - 105
Hexachlorocyclopentadiene	50.0000	51.8607	104		3		40	27 - 147
2,4,6-Trichlorophenol	50.0000	41.5332	83		0		40	50 - 115
2,4,5-Trichlorophenol	50.0000	40.2970	81		1		40	50 - 110
2-Chloronaphthalene	50.0000	46.8116	94		2		40	50 - 105
2-Nitroaniline	50.0000	43.7926	88		2		40	50 - 115
Dimethylphthalate	50.0000	46.9632	94		2		40	25 - 125
Acenaphthylene	50.0000	46.1726	92		0		40	50 - 105
2,6-Dinitrotoluene	50.0000	45.9263	92		2		40	50 - 115
3-Nitroaniline	50.0000	37.5140	75		3		40	20 - 125
Acenaphthene	50.0000	47.3382	95		3		40	45 - 110
2,4-Dinitrophenol	50.0000	19.6533	39		12		40	15 - 140
4-Nitrophenol	50.0000	13.2322	26		32		40	0 - 125
Dibenzofuran	50.0000	43.6771	87		0		40	55 - 105
2,4-Dinitrotoluene	50.0000	45.1071	90		1		40	50 - 120
Diethylphthalate	50.0000	47.1939	94		2		40	40 - 120
4-Chlorophenyl-phenylether	50.0000	46.1761	92		1		40	50 - 110
Fluorene	50.0000	44.8690	90		1		40	50 - 110
4-Nitroaniline	50.0000	43.9268	88		12		40	35 - 120
4,6-Dinitro-2-methylphenol	50.0000	39.8133	80		2		40	40 - 130
N-Nitrosodiphenylamine	50.0000	45.6309	91		0		40	50 - 110
4-Bromophenyl-phenylether	50.0000	49.4142	99		4		40	50 - 115
Hexachlorobenzene	50.0000	50.5203	101		1		40	50 - 110
Pentachlorophenol	50.0000	47.5971	95		13		40	40 - 115
Phenanthrene	50.0000	47.5362	95		1		40	50 - 115
Anthracene	50.0000	47.9492	96		2		40	55 - 110
Carbazole	50.0000	46.2421	92		6		40	50 - 115
Di-n-butylphthalate	50.0000	52.0838	104		4		40	55 - 115

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79478

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79478 LCS Lot No.: A0103342

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Fluoranthene	50.0000	46.7473	93		1		40	55 - 115
Pyrene	50.0000	46.7394	93		3		40	50 - 130
Butylbenzylphthalate	50.0000	48.1415	96		2		40	45 - 115
3,3´-Dichlorobenzidine	50.0000	48.8317	98		63	*	40	20 - 110
Benzo(a)anthracene	50.0000	45.3457	91		2		40	55 - 110
Chrysene	50.0000	47.3387	95		1		40	55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	45.9023	92		2		40	40 - 125
Di-n-octylphthalate	50.0000	48.3371	97		1		40	35 - 135
Benzo(b)fluoranthene	50.0000	45.2436	90		10		40	45 - 120
Benzo(k)fluoranthene	50.0000	50.5543	101		6		40	45 - 125
Benzo(a)pyrene	50.0000	48.1613	96		0		40	55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	55.5872	111		1		40	45 - 125
Dibenzo(a,h)anthracene	50.0000	47.9761	96		2		40	40 - 125
Benzo(g,h,i)perylene	50.0000	50.0428	100		1		40	40 - 125
1,1´-Biphenyl	50.0000	46.6298	93		2		40	55 - 108
Acetophenone	50.0000	41.7828	84		0		40	56 - 145
Atrazine	50.0000	42.1086	84		20		40	52 - 175
Benzaldehyde	50.0000	49.7671	100		6		40	10 - 133
Caprolactam	50.0000	8.0481	16		22		40	10 - 146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 65 outside limits

Spike Recovery: 0 out of 65 outside limits

COMMENTS:

5B - FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT

PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.

DFTPP6L

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9493.D DFTPP Injection Date: 09/26/2014

Instrument ID: S6 DFTPP Injection Time: 14:38

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	48.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	50.2
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	10.0 - 80.0% of mass 198	47.5
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.0
275	10.0 - 60.0% of mass 198	27.1
365	Greater than 1.0% of mass 198	4.0
441	Present, but less than mass 443	10.0
442	50.0 - 100% of mass 198	76.8
443	15.0 - 24.0% of mass 442	15.3 (20.0)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0256L	SSTD0256L	S6B9499.D	09/26/2014	16:51
02	SSTD0806L	SSTD0806L	S6B9500.D	09/26/2014	17:14
03	SSTD0056L	SSTD0056L	S6B9501.D	09/26/2014	17:37
04	SSTD0106L	SSTD0106L	S6B9502.D	09/26/2014	18:01
05	SSTD0406L	SSTD0406L	S6B9503.D	09/26/2014	18:24
06	SSTD0606L	SSTD0606L	S6B9504.D	09/26/2014	18:47
07	SICV0256L	SICV0256L	S6B9505.D	09/26/2014	19:10

6 - FORM VI SV-1

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date(s): 09/26/2014 09/26/2014

Calibration Times: 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6B9501.D RRF010 = S6B9502.D RRF025 = S6B9499.D RRF040 = S6B9503.D RRF060 = S6B9504.D
RRF080 = S6B9500.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
Phenol	1.400	1.470	1.773	1.712	1.709	1.689					1.625	9.3
Bis(2-chloroethyl)ether	0.749	0.742	0.865	0.837	0.822	0.856					0.812	6.6
2-Chlorophenol	1.142	1.212	1.348	1.339	1.347	1.347					1.289	7.0
2-Methylphenol	1.128	1.099	1.327	1.268	1.230	1.217					1.211	7.1
2,2'-oxybis(1-Chloropropane)	1.000	1.042	1.182	1.149	1.159	1.195					1.121	7.1
4-Methylphenol	1.208	1.229	1.411	0.928	1.335	1.303					1.236	13.6
N-Nitroso-di-n-propylamine	1.016	1.062	1.226	1.198	1.158	1.188					1.142	7.3
Hexachloroethane	0.549	0.585	0.661	0.642	0.642	0.683					0.627	8.0
Nitrobenzene	0.565	0.601	0.662	0.583	0.510	0.528					0.575	9.5
Isophorone	0.702	0.703	0.813	0.760	0.741	0.755					0.746	5.5
2-Nitrophenol	0.205	0.193	0.228	0.213	0.200	0.208					0.208	5.8
2,4-Dimethylphenol	0.409	0.408	0.483	0.437	0.438	0.441					0.436	6.3
2,4-Dichlorophenol	0.294	0.308	0.349	0.326	0.332	0.346					0.326	6.6
Naphthalene	0.923	0.897	1.037	0.979	0.982	1.033					0.975	5.8
4-Chloroaniline	0.393	0.396	0.455	0.423	0.418	0.436					0.420	5.6
Bis(2-chloroethoxy)methane	0.429	0.413	0.483	0.442	0.440	0.461					0.445	5.5
Hexachlorobutadiene	0.243	0.251	0.275	0.259	0.265	0.278					0.262	5.3
4-Chloro-3-methylphenol	0.354	0.373	0.428	0.408	0.418	0.424					0.401	7.5
2-Methylnaphthalene	0.986	0.947	1.096	1.025	1.048	1.065					1.028	5.3
Hexachlorocyclopentadiene	0.149	0.207	0.304	0.317	0.355	0.395					0.288	32.1
2,4,6-Trichlorophenol	0.394	0.367	0.427	0.401	0.400	0.411					0.400	5.0
2,4,5-Trichlorophenol		0.378	0.447	0.415	0.417	0.423					0.416	5.9
2-Chloronaphthalene	1.013	0.992	1.116	1.079	1.080	1.156					1.073	5.7
2-Nitroaniline		0.395	0.468	0.413	0.400	0.407					0.417	7.1
Dimethylphthalate	1.311	1.304	1.501	1.384	1.370	1.361					1.372	5.2
Acenaphthylene	1.640	1.699	1.916	1.750	1.741	1.802					1.758	5.4
2,6-Dinitrotoluene	0.325	0.313	0.359	0.321	0.316	0.326					0.327	5.2

Report 1,4-Dioxane for Low-Medium VOA analysis only

6 - FORM VI SV-2

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date(s): 09/26/2014 09/26/2014

Calibration Times: 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6B9501.D RRF010 = S6B9502.D RRF025 = S6B9499.D RRF040 = S6B9503.D RRF060 = S6B9504.D
RRF080 = S6B9500.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
3-Nitroaniline		0.317	0.372	0.337	0.321	0.338					0.337	6.4
Acenaphthene	1.072	1.075	1.237	1.163	1.167	1.217					1.155	6.0
2,4-Dinitrophenol		0.112	0.148	0.151	0.155	0.156					0.144	12.7
4-Nitrophenol		0.191	0.249	0.263	0.277	0.272					0.250	14.0
Dibenzofuran	1.517	1.480	1.696	1.560	1.545	1.593					1.565	4.8
2,4-Dinitrotoluene	0.429	0.441	0.484	0.441	0.439	0.429					0.444	4.6
Diethylphthalate	1.365	1.314	1.520	1.379	1.341	1.369					1.381	5.2
4-Chlorophenyl-phenylether	0.665	0.691	0.816	0.757	0.767	0.791					0.748	7.8
Fluorene	1.326	1.295	1.521	1.419	1.431	1.490					1.414	6.3
4-Nitroaniline		0.286	0.323	0.291	0.268	0.260					0.286	8.5
4,6-Dinitro-2-methylphenol		0.112	0.142	0.130	0.129	0.133					0.129	8.3
N-Nitrosodiphenylamine	0.542	0.538	0.609	0.566	0.574	0.589					0.569	4.8
4-Bromophenyl-phenylether	0.192	0.195	0.222	0.200	0.207	0.222					0.206	6.3
Hexachlorobenzene	0.185	0.195	0.216	0.202	0.206	0.208					0.202	5.4
Pentachlorophenol		0.054	0.081	0.074	0.084	0.089					0.077	17.6
Phenanthrene	0.922	0.901	1.034	0.963	0.967	0.992					0.963	5.0
Anthracene	0.931	0.941	1.074	0.992	1.004	1.003					0.991	5.2
Carbazole	0.865	0.856	0.942	0.850	0.833	0.812					0.860	5.2
Di-n-butylphthalate	1.109	1.054	1.213	1.105	1.109	1.108					1.116	4.7
Fluoranthene	1.149	1.164	1.334	1.199	1.169	1.165					1.197	5.8
Pyrene	0.993	1.019	1.110	1.056	1.062	1.135					1.062	5.0
Butylbenzylphthalate	0.430	0.448	0.487	0.457	0.462	0.470					0.459	4.2
3,3'-Dichlorobenzidine	0.367	0.382	0.399	0.362	0.343	0.340					0.365	6.2
Benzo(a)anthracene	1.098	1.099	1.213	1.119	1.136	1.159					1.137	3.9
Chrysene	0.931	0.907	1.048	0.979	0.999	1.011					0.979	5.3
Bis(2-ethylhexyl)phthalate	0.616	0.632	0.736	0.701	0.726	0.752					0.694	8.2
Di-n-octylphthalate	1.177	1.218	1.362	1.282	1.399	1.463					1.317	8.4

6 - FORM VI SV-3

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date(s): 09/26/2014 09/26/2014

Calibration Times: 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6B9501.D RRF010 = S6B9502.D RRF025 = S6B9499.D RRF040 = S6B9503.D RRF060 = S6B9504.D
RRF080 = S6B9500.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
Benzo(b)fluoranthene	1.103	1.103	1.266	1.150	1.238	1.289					1.191	7.0
Benzo(k)fluoranthene	1.090	1.052	1.169	1.139	1.146	1.173					1.128	4.2
Benzo(a)pyrene	1.027	1.019	1.142	1.076	1.081	1.107					1.075	4.4
Indeno(1,2,3-cd)pyrene	0.965	0.974	1.132	1.158	0.970	1.174					1.062	9.6
Dibenzo(a,h)anthracene	1.008	0.956	1.081	1.039	0.912	0.987					0.997	6.0
Benzo(g,h,i)perylene	0.958	0.984	1.084	1.014	0.880	0.961					0.980	6.9
1,1'-Biphenyl	1.329	1.319	1.538	1.393	1.423	1.510					1.419	6.4
1,4-Dioxane	0.239	0.252	0.269	0.272	0.251	0.259					0.257	4.8
Acetophenone	2.027	2.011	2.315	2.242	2.204	2.182					2.164	5.6
Atrazine	0.185	0.207	0.212	0.216	0.212	0.215					0.208	5.6
Benzaldehyde	1.284	1.155	0.748	0.532	0.337						0.811	49.6
Caprolactam	0.122	0.113	0.137	0.123	0.109	0.095					0.116	12.3

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6 - FORM VI SV-3

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N1822 SAS No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date(s): 09/26/2014 09/26/2014

Calibration Times: 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6B9501.D RRF010 = S6B9502.D RRF025 = S6B9499.D RRF040 = S6B9503.D RRF060 = S6B9504.D

RRF080 = S6B9500.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
Nitrobenzene-d5	0.418	0.423	0.483	0.447	0.450	0.470					0.448	5.7
2-Fluorobiphenyl	1.245	1.202	1.372	1.303	1.282	1.367					1.295	5.2
Terphenyl-d14	0.649	0.677	0.768	0.710	0.731	0.762					0.716	6.6
Phenol-d5	1.402	1.511	1.761	1.762	1.705	1.680					1.637	9.0
2-Fluorophenol	1.002	1.110	1.309	1.263	1.224	1.235					1.190	9.5
2,4,6-Tribromophenol	0.086	0.081	0.096	0.093	0.093	0.095					0.091	6.4

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7E - FORM VII SV-1

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 09/26/2014 Time: 19:10

Lab File ID: S6B9505.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SICV0256L Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Phenol	1.625	1.716	0.800	5.6	20.0
Bis(2-chloroethyl)ether	0.812	0.849	0.700	4.6	20.0
2-Chlorophenol	1.289	1.363	0.800	5.7	20.0
2-Methylphenol	1.211	1.297	0.700	7.1	20.0
2,2'-oxybis(1-Chloropropane)	1.121	1.186	0.010	5.8	20.0
4-Methylphenol	1.236	1.399	0.600	13.2	20.0
N-Nitroso-di-n-propylamine	1.142	1.215	0.500	6.4	20.0
Hexachloroethane	0.627	0.649	0.300	3.5	20.0
Nitrobenzene	0.575	0.671	0.200	16.7	20.0
Isophorone	0.746	0.807	0.400	8.3	20.0
2-Nitrophenol	0.208	0.226	0.100	8.8	20.0
2,4-Dimethylphenol	0.436	0.462	0.200	5.9	20.0
2,4-Dichlorophenol	0.326	0.356	0.200	9.2	20.0
Naphthalene	0.975	1.066	0.700	9.3	20.0
4-Chloroaniline	0.420	0.455	0.010	8.1	20.0
Bis(2-chloroethoxy)methane	0.445	0.467	0.300	5.1	20.0
Hexachlorobutadiene	0.262	0.276	0.010	5.5	20.0
4-Chloro-3-methylphenol	0.401	0.439	0.200	9.6	20.0
2-Methylnaphthalene	1.028	1.101	0.400	7.1	20.0
Hexachlorocyclopentadiene	0.288	0.315	0.050	9.4	20.0
2,4,6-Trichlorophenol	0.400	0.427	0.200	6.7	20.0
2,4,5-Trichlorophenol	0.416	0.448	0.200	7.8	20.0
2-Chloronaphthalene	1.073	1.149	0.800	7.1	20.0
2-Nitroaniline	0.417	0.454	0.010	9.0	20.0
Dimethylphthalate	1.372	1.542	0.010	12.4	20.0
Acenaphthylene	1.758	1.889	0.900	7.4	20.0
2,6-Dinitrotoluene	0.327	0.353	0.200	7.9	20.0
3-Nitroaniline	0.337	0.365	0.010	8.2	20.0
Acenaphthene	1.155	1.243	0.900	7.6	20.0
2,4-Dinitrophenol	0.144	0.156	0.010	8.0	20.0
4-Nitrophenol	0.250	0.301	0.010	20.2	20.0
Dibenzofuran	1.565	1.710	0.800	9.2	20.0
2,4-Dinitrotoluene	0.444	0.495	0.200	11.6	20.0
Diethylphthalate	1.381	1.555	0.010	12.6	20.0
4-Chlorophenyl-phenylether	0.748	0.800	0.400	6.9	20.0
Fluorene	1.414	1.516	0.900	7.2	20.0
4-Nitroaniline	0.286	0.338	0.010	18.2	20.0
4,6-Dinitro-2-methylphenol	0.129	0.137	0.010	6.2	20.0
N-Nitrosodiphenylamine	0.569	0.603	0.010	5.9	20.0
4-Bromophenyl-phenylether	0.206	0.220	0.100	6.9	20.0
Hexachlorobenzene	0.202	0.210	0.100	4.1	20.0
Pentachlorophenol	0.077	0.074	0.050	-2.9	20.0

7F - FORM VII SV-2

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 09/26/2014 Time: 19:10

Lab File ID: S6B9505.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SICV0256L Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Phenanthrene	0.963	1.030	0.700	6.9	20.0
Anthracene	0.991	1.057	0.700	6.7	20.0
Carbazole	0.860	0.939	0.010	9.2	20.0
Di-n-butylphthalate	1.116	1.189	0.010	6.5	20.0
Fluoranthene	1.197	1.317	0.600	10.0	20.0
Pyrene	1.062	1.133	0.600	6.6	20.0
Butylbenzylphthalate	0.459	0.508	0.010	10.6	20.0
3,3'-Dichlorobenzidine	0.365	0.407	0.010	11.4	20.0
Benzo(a)anthracene	1.137	1.238	0.800	8.9	20.0
Chrysene	0.979	1.043	0.700	6.6	20.0
Bis(2-ethylhexyl)phthalate	0.694	0.736	0.010	6.1	20.0
Di-n-octylphthalate	1.317	1.368	0.010	3.9	20.0
Benzo(b)fluoranthene	1.191	1.301	0.700	9.2	20.0
Benzo(k)fluoranthene	1.128	1.182	0.700	4.8	20.0
Benzo(a)pyrene	1.075	1.159	0.700	7.8	20.0
Indeno(1,2,3-cd)pyrene	1.062	1.188	0.500	11.8	20.0
Dibenzo(a,h)anthracene	0.997	1.088	0.400	9.1	20.0
Benzo(g,h,i)perylene	0.980	1.086	0.500	10.8	20.0
1,1'-Biphenyl	1.419	1.524	0.010	7.4	20.0
1,4-Dioxane	0.257	0.279	0.010	8.4	20.0
Acetophenone	2.164	2.290	0.010	5.8	20.0
Atrazine	0.208	0.206	0.010	-0.8	20.0
Benzaldehyde	0.811	0.754	0.010	-7.0	20.0
Caprolactam	0.116	0.136	0.010	17.1	20.0

7G - FORM VII SV-3

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 09/26/2014 Time: 19:10

Lab File ID: S6B9505.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SICV0256L Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF025	MIN RRF	%D	MAX %D
Nitrobenzene-d5	0.448	0.482	0.010	7.5	20.0
2-Fluorobiphenyl	1.295	1.417	0.010	9.4	20.0
Terphenyl-d14	0.716	0.767	0.010	7.1	20.0
Phenol-d5	1.637	1.756	0.010	7.3	20.0
2-Fluorophenol	1.190	1.275	0.010	7.1	20.0
2,4,6-Tribromophenol	0.091	0.094	0.010	4.1	20.0

5B - FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT

PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.

DFTPPL6

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9925.D DFTPP Injection Date: 10/24/2014

Instrument ID: S6 DFTPP Injection Time: 12:56

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	51.0
68	Less than 2.0% of mass 69	0.4 (0.7)1
69	Mass 69 relative abundance	53.3
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	10.0 - 80.0% of mass 198	50.0
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 60.0% of mass 198	27.0
365	Greater than 1.0% of mass 198	3.7
441	Present, but less than mass 443	1.2
442	50.0 - 100% of mass 198	71.7
443	15.0 - 24.0% of mass 442	14.3 (20.0)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD025L6	SSTD025L6	S6B9926.D	10/24/2014	13:15
02	MB-79360	MB-79360	S6B9927.D	10/24/2014	14:20
03	LCS-79360	LCS-79360	S6B9928.D	10/24/2014	14:40
04	MB-79478	MB-79478	S6B9929.D	10/24/2014	15:00
05	LCS-79478	LCS-79478	S6B9930.D	10/24/2014	15:20
06	LCSD-79478	LCSD-79478	S6B9931.D	10/24/2014	15:40
07	MW03-02S-NWG-092914	N1822-02B	S6B9932.D	10/24/2014	16:00
08	MW03-15I-NWG-092914	N1822-04B	S6B9933.D	10/24/2014	16:20
09	FD01-093014	N1822-09B	S6B9936.D	10/24/2014	17:20
10	RB01-100114	N1822-14C	S6B9938.D	10/24/2014	18:00
11	MW03-15S-NWG-100114	N1822-18C	S6B9939.D	10/24/2014	18:20
12	MW03-16S-NWG-100614	N1822-37B	S6B9941.D	10/24/2014	19:00

7E - FORM VII SV-1

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/24/2014 Time: 13:15

Lab File ID: S6B9926.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD025L6 Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Phenol	1.625	1.564	0.800	-3.8	20.0
Bis(2-chloroethyl)ether	0.812	0.781	0.700	-3.7	20.0
2-Chlorophenol	1.289	1.262	0.800	-2.1	20.0
2-Methylphenol	1.211	1.198	0.700	-1.1	20.0
2,2´-oxybis(1-Chloropropane)	1.121	1.035	0.010	-7.7	20.0
4-Methylphenol	1.236	1.214	0.600	-1.7	20.0
N-Nitroso-di-n-propylamine	1.142	1.075	0.500	-5.8	20.0
Hexachloroethane	0.627	0.681	0.300	8.6	20.0
Nitrobenzene	0.575	0.507	0.200	-11.7	20.0
Isophorone	0.746	0.807	0.400	8.2	20.0
2-Nitrophenol	0.208	0.215	0.100	3.4	20.0
2,4-Dimethylphenol	0.436	0.470	0.200	7.7	20.0
2,4-Dichlorophenol	0.326	0.336	0.200	3.1	20.0
Naphthalene	0.975	1.019	0.700	4.5	20.0
4-Chloroaniline	0.420	0.406	0.010	-3.3	20.0
Bis(2-chloroethoxy)methane	0.445	0.428	0.300	-3.7	20.0
Hexachlorobutadiene	0.262	0.283	0.010	8.1	20.0
4-Chloro-3-methylphenol	0.401	0.402	0.200	0.3	20.0
2-Methylnaphthalene	1.028	0.866	0.400	-15.7	20.0
Hexachlorocyclopentadiene	0.288	0.364	0.050	26.3	20.0
2,4,6-Trichlorophenol	0.400	0.421	0.200	5.3	20.0
2,4,5-Trichlorophenol	0.416	0.443	0.200	6.4	20.0
2-Chloronaphthalene	1.073	1.151	0.800	7.3	20.0
2-Nitroaniline	0.417	0.454	0.010	9.0	20.0
Dimethylphthalate	1.372	1.502	0.010	9.5	20.0
Acenaphthylene	1.758	1.841	0.900	4.7	20.0
2,6-Dinitrotoluene	0.327	0.339	0.200	3.9	20.0
3-Nitroaniline	0.337	0.336	0.010	-0.4	20.0
Acenaphthene	1.155	1.242	0.900	7.5	20.0
2,4-Dinitrophenol	0.144	0.134	0.010	-7.1	20.0
4-Nitrophenol	0.250	0.242	0.010	-3.5	20.0
Dibenzofuran	1.565	1.668	0.800	6.6	20.0
2,4-Dinitrotoluene	0.444	0.477	0.200	7.4	20.0
Diethylphthalate	1.381	1.505	0.010	8.9	20.0
4-Chlorophenyl-phenylether	0.748	0.772	0.400	3.3	20.0
Fluorene	1.414	1.448	0.900	2.4	20.0
4-Nitroaniline	0.286	0.320	0.010	11.9	20.0
4,6-Dinitro-2-methylphenol	0.129	0.142	0.010	9.7	20.0
N-Nitrosodiphenylamine	0.569	0.608	0.010	6.8	20.0
4-Bromophenyl-phenylether	0.206	0.224	0.100	8.6	20.0
Hexachlorobenzene	0.202	0.232	0.100	14.9	20.0
Pentachlorophenol	0.077	0.087	0.050	13.1	20.0

7F - FORM VII SV-2

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/24/2014 Time: 13:15

Lab File ID: S6B9926.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD025L6 Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Phenanthrene	0.963	1.023	0.700	6.2	20.0
Anthracene	0.991	1.052	0.700	6.2	20.0
Carbazole	0.860	0.931	0.010	8.3	20.0
Di-n-butylphthalate	1.116	1.195	0.010	7.1	20.0
Fluoranthene	1.197	1.259	0.600	5.2	20.0
Pyrene	1.062	1.141	0.600	7.4	20.0
Butylbenzylphthalate	0.459	0.514	0.010	12.0	20.0
3,3'-Dichlorobenzidine	0.365	0.415	0.010	13.6	20.0
Benzo(a)anthracene	1.137	1.180	0.800	3.8	20.0
Chrysene	0.979	1.021	0.700	4.3	20.0
Bis(2-ethylhexyl)phthalate	0.694	0.727	0.010	4.8	20.0
Di-n-octylphthalate	1.317	1.418	0.010	7.7	20.0
Benzo(b)fluoranthene	1.191	1.194	0.700	0.2	20.0
Benzo(k)fluoranthene	1.128	1.297	0.700	15.0	20.0
Benzo(a)pyrene	1.075	1.151	0.700	7.0	20.0
Indeno(1,2,3-cd)pyrene	1.062	1.136	0.500	7.0	20.0
Dibenzo(a,h)anthracene	0.997	1.070	0.400	7.3	20.0
Benzo(g,h,i)perylene	0.980	1.084	0.500	10.7	20.0
1,1'-Biphenyl	1.419	1.528	0.010	7.7	20.0
1,4-Dioxane	0.257	0.251	0.010	-2.3	20.0
Acetophenone	2.164	2.183	0.010	0.9	20.0
Atrazine	0.208	0.196	0.010	-5.7	20.0
Benzaldehyde	0.811	0.895	0.010	10.4	20.0
Caprolactam	0.116	0.119	0.010	2.1	20.0

7G - FORM VII SV-3

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/24/2014 Time: 13:15

Lab File ID: S6B9926.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD025L6 Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF025	MIN RRF	%D	MAX %D
Nitrobenzene-d5	0.448	0.461	0.010	2.9	20.0
2-Fluorobiphenyl	1.295	1.394	0.010	7.6	20.0
Terphenyl-d14	0.716	0.775	0.010	8.2	20.0
Phenol-d5	1.637	1.628	0.010	-0.6	20.0
2-Fluorophenol	1.190	1.188	0.010	-0.2	20.0
2,4,6-Tribromophenol	0.091	0.108	0.010	19.3	20.0

5B - FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT

PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.

DFTPP6N

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9960.D DFTPP Injection Date: 10/27/2014

Instrument ID: S6 DFTPP Injection Time: 15:07

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.3 (0.6)1
69	Mass 69 relative abundance	55.1
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	10.0 - 80.0% of mass 198	48.7
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 60.0% of mass 198	26.5
365	Greater than 1.0% of mass 198	3.4
441	Present, but less than mass 443	7.1
442	50.0 - 100% of mass 198	72.2
443	15.0 - 24.0% of mass 442	14.4 (19.9)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0256N	SSTD0256N	S6B9961.D	10/27/2014	15:27
02	MW03-15I-NWG-092914MS	N1822-04BMS	S6B9965.D	10/27/2014	17:13
03	MW03-15I-NWG-092914MSD	N1822-04BMSD	S6B9966.D	10/27/2014	17:34
04	MW03-17S-NWG-093014	N1822-11B	S6B9967.D	10/27/2014	17:54
05	MW03-17I-NWG-100214	N1822-25C	S6B9968.D	10/27/2014	18:14

7E - FORM VII SV-1

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/27/2014 Time: 15:27

Lab File ID: S6B9961.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD0256N Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Phenol	1.625	1.676	0.800	3.1	20.0
Bis(2-chloroethyl)ether	0.812	0.995	0.700	22.6	20.0
2-Chlorophenol	1.289	1.339	0.800	3.8	20.0
2-Methylphenol	1.211	1.235	0.700	2.0	20.0
2,2'-oxybis(1-Chloropropane)	1.121	1.086	0.010	-3.1	20.0
4-Methylphenol	1.236	1.283	0.600	3.8	20.0
N-Nitroso-di-n-propylamine	1.142	1.164	0.500	2.0	20.0
Hexachloroethane	0.627	0.689	0.300	9.9	20.0
Nitrobenzene	0.575	0.522	0.200	-9.2	20.0
Isophorone	0.746	0.826	0.400	10.8	20.0
2-Nitrophenol	0.208	0.228	0.100	9.5	20.0
2,4-Dimethylphenol	0.436	0.478	0.200	9.5	20.0
2,4-Dichlorophenol	0.326	0.348	0.200	6.8	20.0
Naphthalene	0.975	1.055	0.700	8.2	20.0
4-Chloroaniline	0.420	0.406	0.010	-3.5	20.0
Bis(2-chloroethoxy)methane	0.445	0.459	0.300	3.3	20.0
Hexachlorobutadiene	0.262	0.292	0.010	11.7	20.0
4-Chloro-3-methylphenol	0.401	0.415	0.200	3.6	20.0
2-Methylnaphthalene	1.028	0.830	0.400	-19.3	20.0
Hexachlorocyclopentadiene	0.288	0.372	0.050	29.4	20.0
2,4,6-Trichlorophenol	0.400	0.462	0.200	15.6	20.0
2,4,5-Trichlorophenol	0.416	0.486	0.200	16.7	20.0
2-Chloronaphthalene	1.073	1.156	0.800	7.8	20.0
2-Nitroaniline	0.417	0.471	0.010	13.1	20.0
Dimethylphthalate	1.372	1.587	0.010	15.7	20.0
Acenaphthylene	1.758	1.887	0.900	7.4	20.0
2,6-Dinitrotoluene	0.327	0.356	0.200	8.9	20.0
3-Nitroaniline	0.337	0.365	0.010	8.3	20.0
Acenaphthene	1.155	1.264	0.900	9.4	20.0
2,4-Dinitrophenol	0.144	0.169	0.010	17.2	20.0
4-Nitrophenol	0.250	0.310	0.010	23.8	20.0
Dibenzofuran	1.565	1.710	0.800	9.3	20.0
2,4-Dinitrotoluene	0.444	0.499	0.200	12.4	20.0
Diethylphthalate	1.381	1.586	0.010	14.8	20.0
4-Chlorophenyl-phenylether	0.748	0.782	0.400	4.5	20.0
Fluorene	1.414	1.494	0.900	5.7	20.0
4-Nitroaniline	0.286	0.340	0.010	18.9	20.0
4,6-Dinitro-2-methylphenol	0.129	0.142	0.010	9.7	20.0
N-Nitrosodiphenylamine	0.569	0.608	0.010	6.7	20.0
4-Bromophenyl-phenylether	0.206	0.231	0.100	11.9	20.0
Hexachlorobenzene	0.202	0.228	0.100	12.6	20.0
Pentachlorophenol	0.077	0.103	0.050	34.2	20.0

7F - FORM VII SV-2

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/27/2014 Time: 15:27

Lab File ID: S6B9961.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD0256N Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF025	MIN RRF	%D	MAX %D
Phenanthrene	0.963	1.049	0.700	9.0	20.0
Anthracene	0.991	1.070	0.700	8.0	20.0
Carbazole	0.860	0.949	0.010	10.4	20.0
Di-n-butylphthalate	1.116	1.267	0.010	13.5	20.0
Fluoranthene	1.197	1.333	0.600	11.4	20.0
Pyrene	1.062	1.073	0.600	1.0	20.0
Butylbenzylphthalate	0.459	0.505	0.010	10.0	20.0
3,3´-Dichlorobenzidine	0.365	0.427	0.010	16.9	20.0
Benzo(a)anthracene	1.137	1.186	0.800	4.3	20.0
Chrysene	0.979	1.005	0.700	2.7	20.0
Bis(2-ethylhexyl)phthalate	0.694	0.715	0.010	3.1	20.0
Di-n-octylphthalate	1.317	1.437	0.010	9.1	20.0
Benzo(b)fluoranthene	1.191	1.303	0.700	9.3	20.0
Benzo(k)fluoranthene	1.128	1.196	0.700	6.0	20.0
Benzo(a)pyrene	1.075	1.154	0.700	7.3	20.0
Indeno(1,2,3-cd)pyrene	1.062	1.135	0.500	6.8	20.0
Dibenzo(a,h)anthracene	0.997	1.120	0.400	12.3	20.0
Benzo(g,h,i)perylene	0.980	1.111	0.500	13.4	20.0

7G - FORM VII SV-3

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/27/2014 Time: 15:27

Lab File ID: S6B9961.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD0256N Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF025	MIN RRF	%D	MAX %D
Nitrobenzene-d5	0.448	0.492	0.010	9.7	20.0
2-Fluorobiphenyl	1.295	1.408	0.010	8.7	20.0
Terphenyl-d14	0.716	0.732	0.010	2.2	20.0
Phenol-d5	1.637	1.678	0.010	2.5	20.0
2-Fluorophenol	1.190	1.233	0.010	3.6	20.0
2,4,6-Tribromophenol	0.091	0.109	0.010	20.0	20.0

7F - FORM VII SV-2

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/27/2014 Time: 15:27

Lab File ID: S6B9961.D Init. Calib. Date(s): 09/26/2014 09/26/2014

EPA Sample No.(SSTD020##) SSTD0256N Init. Calib. Time(s): 16:51 18:47

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF025	MIN RRF	%D	MAX %D
Carbazole	0.860	0.949	0.010	10.4	20.0
Fluoranthene	1.197	1.333	0.600	11.4	20.0
Pyrene	1.062	1.073	0.600	1.0	20.0
Butylbenzylphthalate	0.459	0.505	0.010	10.0	20.0
3,3'-Dichlorobenzidine	0.365	0.427	0.010	16.9	20.0
Benzo(a)anthracene	1.137	1.186	0.800	4.3	20.0
Chrysene	0.979	1.005	0.700	2.7	20.0
Bis(2-ethylhexyl)phthalate	0.694	0.715	0.010	3.1	20.0
Benzo(b)fluoranthene	1.191	1.303	0.700	9.3	20.0
Benzo(k)fluoranthene	1.128	1.196	0.700	6.0	20.0
Benzo(a)pyrene	1.075	1.154	0.700	7.3	20.0
Indeno(1,2,3-cd)pyrene	1.062	1.135	0.500	6.8	20.0
Dibenzo(a,h)anthracene	0.997	1.120	0.400	12.3	20.0
Benzo(g,h,i)perylene	0.980	1.111	0.500	13.4	20.0

missing

	$\overline{RRF}$	RRF025	%D
1,1'-biphenyl	1.419	1.556	9.7
acetophenone	2.164	2.227	2.9
atrazine	0.208	0.208	0
benzaldehyde	0.811	0.965	18.9
caprolactam	0.116	0.133	14.6

Data File: \\Avogadro\Organics\S6.I\141027A.B\S6B9961.d
Report Date: 28-Oct-2014 12:11

Spectrum Analytical, Inc. RI Division

Data file : \\Avogadro\Organics\S6.I\141027A.B\S6B9961.d
Lab Smp Id: SSTD0256N Client Smp ID: SSTD0256N
Inj Date : 27-OCT-2014 15:27
Operator : CLM SRC: CLM Inst ID: S6.i
Smp Info : SSTD0256N,SSTD0256N
Misc Info : 2,3
Comment :
Method : \\Avogadro\Organics\S6.I\141027A.B\S6_8270C_N.m
Meth Date : 28-Oct-2014 12:10 cmosher Quant Type: ISTD
Cal Date : 26-SEP-2014 18:47 Cal File: S6B9504.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: allnew.sub
Target Version: 4.14
Processing Host: TARGET111

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
$ 109 1,4-Dioxane-d8	96	1.134	1.134	(0.295)	48110	25.0000	28
108 1,4-Dioxane	58	1.145	1.145	(0.298)	26878	25.0000	25
1 N-Nitrosodimethylamine	74	1.345	1.345	(0.350)	76473	25.0000	26
143 Tetramethyllead	253	1.339	1.339	(0.349)	33489	25.0000	30 (QM)
2 Pyridine	79	1.363	1.363	(0.355)	135022	25.0000	25 (QM)
$ 3 2-Fluorophenol	112	2.720	2.720	(0.708)	126903	25.0000	26
→ 101 Benzaldehyde	77	3.460	3.460	(0.901)	99295	25.0000	30
7 Aniline	66	3.572	3.572	(0.930)	83490	25.0000	25
$ 5 Phenol-d5	99	3.654	3.654	(0.951)	172682	25.0000	26
6 Phenol	94	3.666	3.666	(0.954)	172459	25.0000	26
8 bis(2-Chloroethyl)Ether	63	3.637	3.637	(0.946)	102363	25.0000	31
10 2-Chlorophenol	128	3.695	3.695	(0.962)	137711	25.0000	26
11 1,3-Dichlorobenzene	146	3.784	3.784	(0.985)	151993	25.0000	26
* 12 1,4-Dichlorobenzene-d4	152	3.842	3.842	(1.000)	164609	40.0000	
13 1,4-Dichlorobenzene	146	3.854	3.854	(1.003)	156611	25.0000	26
117 2-Ethyl-1-hexanol	57	3.948	3.948	(1.028)	134544	25.0000	24
15 Benzyl Alcohol	108	4.019	4.019	(1.046)	92701	25.0000	25
16 1,2-Dichlorobenzene	146	3.983	3.983	(1.037)	143602	25.0000	26
18 2,2'-oxybis(1-Chloropropane)	45	4.119	4.119	(1.072)	111725	25.0000	24
17 2-Methylphenol	108	4.166	4.166	(1.084)	127084	25.0000	25

Data File: \\Avogadro\Organics\S6.I\141027A.B\S6B9961.d
Report Date: 28-Oct-2014 12:11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)	
	99 Acetophenone	105	4.213	4.213	(1.096)	229268	25.0000	26	
	19 N-Nitroso-di-n-propylamine	70	4.236	4.236	(1.102)	119799	25.0000	26	(Q)
	20 4-Methylphenol	108	4.312	4.312	(1.122)	131983	25.0000	26	
	21 Hexachloroethane	117	4.260	4.260	(1.109)	70896	25.0000	27	
$	22 Nitrobenzene-d5	82	4.336	4.336	(0.880)	181232	25.0000	27	
	23 Nitrobenzene	77	4.354	4.354	(0.883)	192434	25.0000	23	
	24 Isophorone	82	4.565	4.565	(0.926)	304574	25.0000	28	
	25 2-Nitrophenol	139	4.624	4.624	(0.938)	83997	25.0000	27	
	26 2,4-Dimethylphenol	107	4.730	4.730	(0.959)	176056	25.0000	27	
	144 Tetraethyllead	237	4.683	4.683	(1.219)	79757	25.0000	27	
	27 bis(2-Chloroethoxy)methane	93	4.765	4.765	(0.967)	169208	25.0000	26	
	28 Benzoic Acid	105	4.906	4.906	(0.995)	76664	25.0000	48	
	29 2,4-Dichlorophenol	162	4.871	4.871	(0.988)	128216	25.0000	27	
	30 1,2,4-Trichlorobenzene	180	4.888	4.888	(0.992)	143765	25.0000	26	
*	31 Naphthalene-d8	136	4.929	4.929	(1.000)	589712	40.0000		
	32 Naphthalene	128	4.947	4.947	(1.004)	388953	25.0000	27	
	115 alpha-Terpineol	59	4.982	4.982	(1.011)	116315	25.0000	26	
	33 4-Chloroaniline	127	5.029	5.029	(1.020)	149555	25.0000	24	
	34 Hexachlorobutadiene	225	5.053	5.053	(1.025)	107805	25.0000	28	
	102 Caprolactam	113	5.358	5.358	(1.087)	48881	25.0000	28	
	35 4-Chloro-3-Methylphenol	107	5.499	5.499	(1.116)	153031	25.0000	26	(Q)
	36 2-Methylnaphthalene	142	5.523	5.523	(1.120)	305875	25.0000	20	(M)M1 CLM 10/28
	114 1-Methylnaphthalene	142	5.599	5.599	(1.136)	270970	25.0000	27	
	38 Hexachlorocyclopentadiene	237	5.646	5.646	(0.886)	92319	25.0000	32	
	112 1,2,4,5-Tetrachlorobenzene	216	5.664	5.664	(0.888)	152977	25.0000	27	
	39 2,4,6-Trichlorophenol	196	5.793	5.793	(0.909)	114595	25.0000	29	
	40 2,4,5-Trichlorophenol	196	5.852	5.852	(0.918)	120411	25.0000	30	
$	41 2-Fluorobiphenyl	172	5.834	5.834	(0.915)	349090	25.0000	27	
	98 1,1'-Biphenyl	154	5.916	5.916	(0.928)	385594	25.0000	27	
	42 2-Chloronaphthalene	162	5.922	5.922	(0.929)	286575	25.0000	27	
	43 2-Nitroaniline	65	6.040	6.040	(0.947)	116807	25.0000	28	
	44 Dimethylphthalate	163	6.193	6.193	(0.971)	393283	25.0000	29	
	45 2,6-Dinitrotoluene	165	6.245	6.245	(0.980)	88183	25.0000	27	
	46 Acenaphthylene	152	6.257	6.257	(0.982)	467815	25.0000	27	
	47 3-Nitroaniline	138	6.386	6.386	(1.002)	90474	25.0000	27	
*	48 Acenaphthene-d10	164	6.375	6.375	(1.000)	396600	40.0000		
	49 Acenaphthene	153	6.398	6.398	(1.004)	313324	25.0000	27	
	50 2,4-Dinitrophenol	184	6.481	6.481	(1.017)	41960	25.0000	29	(Q)
	51 4-Nitrophenol	109	6.627	6.627	(1.040)	76806	25.0000	31	
	53 2,4-Dinitrotoluene	165	6.575	6.575	(1.031)	123720	25.0000	28	
	52 Dibenzofuran	168	6.545	6.545	(1.027)	423862	25.0000	27	
	110 2,3,4,6-Tetrachlorophenol	232	6.674	6.674	(1.047)	102948	25.0000	30	
	54 Diethylphthalate	149	6.768	6.768	(1.062)	393201	25.0000	29	
	56 4-Chlorophenyl-phenylether	204	6.833	6.833	(1.072)	193751	25.0000	26	
	55 Fluorene	166	6.821	6.821	(1.070)	370312	25.0000	26	
	57 4-Nitroaniline	138	6.892	6.892	(1.081)	84242	25.0000	29	
	58 4,6-Dinitro-2-methylphenol	198	6.909	6.909	(0.912)	77464	25.0000	27	
	59 N-Nitrosodiphenylamine	169	6.939	6.939	(0.916)	331863	25.0000	27	
	97 Azobenzene	77	6.962	6.962	(0.919)	503102	25.0000	29	
$	60 2,4,6-Tribromophenol	330	7.027	7.027	(0.927)	59336	25.0000	30	
	61 4-Bromophenyl-phenylether	248	7.227	7.227	(0.953)	125993	25.0000	28	
	62 Hexachlorobenzene	284	7.262	7.262	(0.958)	124267	25.0000	28	
	100 Atrazine	200	7.403	7.403	(0.977)	113443	25.0000	25	
	111 Pentachloronitrobenzene	237	7.444	7.444	(0.982)	72592	25.0000	30	

Data File: \\Avogadro\Organics\S6.I\141027A.B\S6B9961.d
Report Date: 28-Oct-2014 12:11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	63 Pentachlorophenol	266	7.456	7.456	(0.984)	56092	25.0000	34
*	64 Phenanthrene-d10	188	7.579	7.579	(1.000)	873917	40.0000	
	65 Phenanthrene	178	7.597	7.597	(1.002)	573132	25.0000	27
	66 Anthracene	178	7.638	7.638	(1.008)	584478	25.0000	27
	67 Carbazole	167	7.797	7.797	(1.029)	518400	25.0000	28
	68 Di-n-butylphthalate	149	8.090	8.090	(1.067)	692164	25.0000	28
	69 Fluoranthene	202	8.566	8.566	(1.130)	728223	25.0000	28
	70 Benzidine	184	8.701	8.701	(0.893)	264178	25.0000	28
	71 Pyrene	202	8.743	8.743	(0.897)	751596	25.0000	25
$	72 Terphenyl-d14	244	8.889	8.889	(0.912)	512698	25.0000	26
	73 Butylbenzylphthalate	149	9.307	9.307	(0.955)	353522	25.0000	28
	74 3,3'-Dichlorobenzidine	252	9.736	9.736	(0.999)	299108	25.0000	29
	75 Benzo(a)anthracene	228	9.736	9.736	(0.999)	830493	25.0000	26
	78 bis(2-Ethylhexyl)phthalate	149	9.794	9.794	(1.005)	500740	25.0000	26
*	76 Chrysene-d12	240	9.747	9.747	(1.000)	1120240	40.0000	
	77 Chrysene	228	9.765	9.765	(1.002)	703588	25.0000	26
	79 Di-n-octylphthalate	149	10.335	10.335	(0.935)	897252	25.0000	27
	80 Benzo(b)fluoranthene	252	10.658	10.658	(0.964)	813323	25.0000	27
	81 Benzo(k)fluoranthene	252	10.682	10.682	(0.966)	746792	25.0000	26
	82 Benzo(a)pyrene	252	10.987	10.987	(0.994)	720569	25.0000	27
*	83 Perylene-d12	264	11.058	11.058	(1.000)	998974	40.0000	
	84 Indeno(1,2,3-cd)pyrene	276	12.521	12.521	(1.132)	708607	25.0000	27
	85 Dibenzo(a,h)anthracene	278	12.568	12.568	(1.137)	699254	25.0000	28
	86 Benzo(g,h,i)perylene	276	12.979	12.979	(1.174)	693787	25.0000	28

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 8270D SIM, SVOA by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8270D SIM

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: S6
Instrument Type: GCMS-Semi

Description: HP7890A
Manufacturer: Agilent
Model: 7890A/5973
GC Column used: 30 m X 0.25 mm ID [0.25 um thickness] Rxi-5sil MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW01-14S-NWG-100914 (N1822-47CMS), MW01-14S-NWG-100914 (N1822-47CMSD), MW03-15I-NWG-092914 (N1822-04BMS) and MW03-15I-NWG-092914 (N1822-04BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

No manual integrations were performed on any sample or standard.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____10/30/2014_____

2L - FORM II SV-SIM1

WATER SEMIVOLATILE SIM DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

	EPA SAMPLE NO.	SDMC17 (BEP) #		TOT OUT
01	MB-79550	67		0
02	LCS-79550	65		0
03	LCSD-79550	62		0
04	MW02-10S-NWG-101014	69		0
05	FD02-101014	66		0
06	MB-79516	60		0
07	LCS-79516	63		0
08	RB02-100814	65		0
09	MW02-09S-NWG-100814	65		0
10	MW01-14S-NWG-100914	68		0
11	MW01-14S-NWG-100914	62		0
12	MW01-14S-NWG-100914	61		0
13	MB-79362	54		0
14	LCS-79362	55		0
15	MW03-02S-NWG-092914	66		0
16	MW03-15I-NWG-092914	67		0
17	MW03-15I-NWG-092914	61		0
18	MW03-15I-NWG-092914	60		0
19	MW03-04S-NWG-093014	61		0
20	RB01-100114	60		0

QC LIMITS

SDMC17 (BEP) = Benzo(e)pyrene-d12 (48-162)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

som14.10.02.1616

2L - FORM II SV-SIM1

WATER SEMIVOLATILE SIM DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

	EPA SAMPLE NO.	SDMC17 (BEP) #		TOT OUT
21	MW03-05S-NWG-100114	59		0
22	MW02-08SA-NWG-100114	60		0
23	MW02-05S-NWG-100214	64		0
24	MW01-10S-NWG-100214	64		0
25	MW01-12S-NWG-100214	58		0
26	MW02-03S-NWG-100314	60		0
27	MB-79479	49		0
28	LCS-79479	51		0
29	LCSD-79479	55		0
30	MW02-4SA-NWG-100614	51		0
31	MW02-11S-NWG-100814	49		0

	QC LIMITS
SDMC17 (BEP) = Benzo(e)pyrene-d12	(48-162)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

som14.10.02.1616

8E - FORM VIII SV-SIM1

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016J Date Analyzed: 10/23/2014

Lab File ID (Standard): S6B9890.D Time Analyzed: 9:34

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	30012		3.881		79502		4.963		45733		6.404	
	UPPER LIMIT	60024		4.381		159004		5.463		91466		6.904	
	LOWER LIMIT	15006		3.381		39751		4.463		22867		5.904	
	EPA SAMPLE NO.												
01	MB-79550	28956		3.881		76998		4.963		44522		6.403	
02	LCS-79550	30700		3.881		84247		4.963		48586		6.404	
03	LCSD-79550	31813		3.881		84237		4.963		49159		6.404	
04	MW02-10S-NWG-101014					76397		4.963					
05	FD02-101014					76731		4.963					
06	MB-79516	31740		3.881		88747		4.963		49822		6.403	
07	LCS-79516	31746		3.881		84626		4.963		48976		6.403	
08	RB02-100814					83323		4.963					
09	MW02-09S-NWG-100814					81052		4.963					
10	MW01-14S-NWG-100914					89413		4.963					
11	MW01-14S-NWG-100914					82826		4.963					
12	MW01-14S-NWG-100914					87799		4.963					

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8E - FORM VIII SV-SIM1

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016J Date Analyzed: 10/23/2014

Lab File ID (Standard): S6B9890.D Time Analyzed: 9:34

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	30012		3.881		79502		4.963		45733		6.404	
	UPPER LIMIT	60024		4.381		159004		5.463		91466		6.904	
	LOWER LIMIT	15006		3.381		39751		4.463		22867		5.904	
	EPA SAMPLE NO.												
13	MB-79362	32093		3.881		87539		4.963		49723		6.404	
14	LCS-79362	32562		3.881		85960		4.963		50965		6.404	
15	MW03-02S-NWG-092914					85357		4.963					
16	MW03-15I-NWG-092914					87779		4.963					
17	MW03-15I-NWG-092914					81582		4.963					
18	MW03-15I-NWG-092914					86444		4.963					
19	MW03-04S-NWG-093014					86132		4.963					
20	RB01-100114					88036		4.963					
21	MW03-05S-NWG-100114					86876		4.963					
22	MW02-08SA-NWG-100114					85977		4.963					

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8E - FORM VIII SV-SIM1

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016J Date Analyzed: 10/23/2014

Lab File ID (Standard): S6B9890.D Time Analyzed: 9:34

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	30012		3.881		79502		4.963		45733		6.404	
	UPPER LIMIT	60024		4.381		159004		5.463		91466		6.904	
	LOWER LIMIT	15006		3.381		39751		4.463		22867		5.904	
	EPA SAMPLE NO.												
23	MW02-05S-NWG-100214					89000		4.963					
24	MW01-10S-NWG-100214					85622		4.963					
25	MW01-12S-NWG-100214					88412		4.963					
26	MW02-03S-NWG-100314					98554		4.963					

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8E - FORM VIII SV-SIM1

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016K Date Analyzed: 10/24/2014

Lab File ID (Standard): S6B9919.D Time Analyzed: 9:58

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	26444		3.881		69766		4.963		41295		6.403	
	UPPER LIMIT	52888		4.381		139532		5.463		82590		6.903	
	LOWER LIMIT	13222		3.381		34883		4.463		20648		5.903	
	EPA SAMPLE NO.												
01	MB-79479	31100		3.881		86676		4.963		51082		6.404	
02	LCS-79479	33059		3.882		91008		4.963		53609		6.404	
03	LCSD-79479	33979		3.881		93232		4.963		53684		6.403	
04	MW02-4SA-NWG-100614					88220		4.963					
05	MW02-11S-NWG-100814					78356		4.963					

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8F - FORM VIII SV-SIM2

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

EPA Sample No.(SSTD0.4##) SSTD0016J Date Analyzed: 10/23/2014

Lab File ID (Standard): S6B9890.D Time Analyzed: 9:34

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	149858		7.613		131249		9.771		110104		11.099	
	UPPER LIMIT	299716		8.113		262498		10.271		220208		11.599	
	LOWER LIMIT	74929		7.113		65625		9.271		55052		10.599	
	EPA SAMPLE NO.												
01	MB-79550	152131		7.613		134994		9.799		117043		11.161	
02	LCS-79550	160008		7.613		142391		9.778		122840		11.113	
03	LCSD-79550	161591		7.613		147660		9.778		128472		11.106	
04	MW02-10S-NWG-101014									124856		11.106	
05	FD02-101014									125384		11.099	
06	MB-79516	163459		7.612		146366		9.778		129060		11.106	
07	LCS-79516	166600		7.613		145595		9.778		127654		11.106	
08	RB02-100814									120267		11.106	
09	MW02-09S-NWG-100814									123208		11.106	
10	MW01-14S-NWG-100914									137169		11.106	
11	MW01-14S-NWG-100914									124899		11.106	
12	MW01-14S-NWG-100914									125738		11.106	

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8F - FORM VIII SV-SIM2

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

EPA Sample No.(SSTD0.4##) SSTD0016J Date Analyzed: 10/23/2014

Lab File ID (Standard): S6B9890.D Time Analyzed: 9:34

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	149858		7.613		131249		9.771		110104		11.099	
	UPPER LIMIT	299716		8.113		262498		10.271		220208		11.599	
	LOWER LIMIT	74929		7.113		65625		9.271		55052		10.599	
	EPA SAMPLE NO.												
13	MB-79362	172956		7.613		154497		9.778		133512		11.106	
14	LCS-79362	175177		7.613		159933		9.771		139590		11.106	
15	MW03-02S-NWG-092914									125566		11.106	
16	MW03-15I-NWG-092914									130336		11.099	
17	MW03-15I-NWG-092914									125706		11.099	
18	MW03-15I-NWG-092914									136144		11.099	
19	MW03-04S-NWG-093014									129085		11.099	
20	RB01-100114									130875		11.106	
21	MW03-05S-NWG-100114									134498		11.099	
22	MW02-08SA-NWG-100114									131492		11.099	

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8F - FORM VIII SV-SIM2

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

EPA Sample No.(SSTD0.4##) SSTD0016J Date Analyzed: 10/23/2014

Lab File ID (Standard): S6B9890.D Time Analyzed: 9:34

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	149858		7.613		131249		9.771		110104		11.099	
	UPPER LIMIT	299716		8.113		262498		10.271		220208		11.599	
	LOWER LIMIT	74929		7.113		65625		9.271		55052		10.599	
	EPA SAMPLE NO.												
23	MW02-05S-NWG-100214									130722		11.106	
24	MW01-10S-NWG-100214									135069		11.099	
25	MW01-12S-NWG-100214									135466		11.099	
26	MW02-03S-NWG-100314									151201		11.099	

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8F - FORM VIII SV-SIM2

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

EPA Sample No.(SSTD0.4##) SSTD0016K Date Analyzed: 10/24/2014

Lab File ID (Standard): S6B9919.D Time Analyzed: 9:58

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	141998		7.613		128882		9.799		108582		11.154	
	UPPER LIMIT	283996		8.113		257764		10.299		217164		11.654	
	LOWER LIMIT	70999		7.113		64441		9.299		54291		10.654	
	EPA SAMPLE NO.												
01	MB-79479	174537		7.613		158388		9.785		139630		11.134	
02	LCS-79479	183002		7.613		168099		9.778		144815		11.106	
03	LCSD-79479	182239		7.612		164090		9.778		142767		11.113	
04	MW02-4SA-NWG-100614									140369		11.106	
05	MW02-11S-NWG-100814									120761		11.106	

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

4D - FORM IV SV-SIM

SEMIVOLATILE SIM METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79362

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9904.D Lab Sample ID: MB-79362

Instrument ID: S6 Date Extracted: 10/06/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/23/2014

Time Analyzed: 14:50

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79362	LCS-79362	S6B9905.D	10/23/2014
02	MW03-02S-NWG-092914	N1822-02B	S6B9906.D	10/23/2014
03	MW03-15I-NWG-092914	N1822-04B	S6B9907.D	10/23/2014
04	MW03-15I-NWG-092914	N1822-04BMS	S6B9908.D	10/23/2014
05	MW03-15I-NWG-092914	N1822-04BMSD	S6B9909.D	10/23/2014
06	MW03-04S-NWG-093014	N1822-07B	S6B9910.D	10/23/2014
07	RB01-100114	N1822-14C	S6B9911.D	10/23/2014
08	MW03-05S-NWG-100114	N1822-16C	S6B9912.D	10/23/2014
09	MW02-08SA-NWG-100114	N1822-20C	S6B9913.D	10/23/2014
10	MW02-05S-NWG-100214	N1822-23C	S6B9914.D	10/23/2014
11	MW01-10S-NWG-100214	N1822-27C	S6B9915.D	10/23/2014
12	MW01-12S-NWG-100214	N1822-29C	S6B9916.D	10/23/2014
13	MW02-03S-NWG-100314	N1822-32C	S6B9917.D	10/23/2014

COMMENTS:

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79362

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79362

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9904.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/06/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79362

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79362 LCS Lot No.:

Date Extracted: 10/06/2014 Date Analyzed (1): 10/23/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.4600	58		47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

3E - FORM III SIM1

WATER SEMIVOLATILE SIM MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

COMPOUND	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	MS CONCENTRATION (µg/L)	MS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.6466	66		47-105

COMPOUND	SPIKE ADDED (µg/L)	MSD CONCENTRATION (µg/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	2.5000	1.5825	63		4		0-40	47-105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

4D - FORM IV SV-SIM

SEMIVOLATILE SIM METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79479

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9920.D Lab Sample ID: MB-79479

Instrument ID: S6 Date Extracted: 10/11/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/24/2014

Time Analyzed: 10:25

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79479	LCS-79479	S6B9921.D	10/24/2014
02	LCSD-79479	LCSD-79479	S6B9922.D	10/24/2014
03	MW02-4SA-NWG-100614	N1822-35B	S6B9923.D	10/24/2014

COMMENTS:

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79479

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79479

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9920.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/24/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

3 - FORM III

WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79479

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79479 LCS Lot No.:

Date Extracted: 10/11/2014 Date Analyzed (1): 10/24/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.3912	56		47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79479

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79479 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	2.5000	1.4689	59		5		40	47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

4D - FORM IV SV-SIM

SEMIVOLATILE SIM METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79516

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9896.D Lab Sample ID: MB-79516

Instrument ID: S6 Date Extracted: 10/15/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/23/2014

Time Analyzed: 12:10

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79516	LCS-79516	S6B9897.D	10/23/2014
02	RB02-100814	N1822-40C	S6B9898.D	10/23/2014
03	MW02-09S-NWG-100814	N1822-42C	S6B9899.D	10/23/2014
04	MW01-14S-NWG-100914	N1822-47C	S6B9901.D	10/23/2014
05	MW01-14S-NWG-100914	N1822-47CMS	S6B9902.D	10/23/2014
06	MW01-14S-NWG-100914	N1822-47CMSD	S6B9903.D	10/23/2014
07	MW02-11S-NWG-100814	N1822-44C	S6B9924.D	10/24/2014

COMMENTS:

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79516

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79516

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9896.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/15/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79516

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79516 LCS Lot No.:

Date Extracted: 10/15/2014 Date Analyzed (1): 10/23/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.6938	68		47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

3E - FORM III SIM1

WATER SEMIVOLATILE SIM MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW01-14S-NWG-100914

COMPOUND	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	MS CONCENTRATION (µg/L)	MS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.7244	69		47-105

COMPOUND	SPIKE ADDED (µg/L)	MSD CONCENTRATION (µg/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	2.5000	1.6419	66		5		0-40	47-105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

4D - FORM IV SV-SIM

SEMIVOLATILE SIM METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79550

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9891.D Lab Sample ID: MB-79550

Instrument ID: S6 Date Extracted: 10/17/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/23/2014

Time Analyzed: 10:29

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79550	LCS-79550	S6B9892.D	10/23/2014
02	LCSD-79550	LCSD-79550	S6B9893.D	10/23/2014
03	MW02-10S-NWG-101014	N1822-50C	S6B9894.D	10/23/2014
04	FD02-101014	N1822-52C	S6B9895.D	10/23/2014

COMMENTS:

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79550

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79550

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6B9891.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/17/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/23/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

3 - FORM III

WATER LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79550

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79550 LCS Lot No.:

Date Extracted: 10/17/2014 Date Analyzed (1): 10/23/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.7590	70		47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79550

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79550 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	2.5000	1.6284	65		7		40	47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

5B - FORM V SV
SEMIVOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.
DFTPP6T

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9621.D DFTPP Injection Date: 10/08/2014

Instrument ID: S6 DFTPP Injection Time: 16:56

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.0
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	10.0 - 80.0% of mass 198	47.9
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 60.0% of mass 198	25.5
365	Greater than 1.0% of mass 198	3.6
441	Present, but less than mass 443	13.7
442	50.0 - 100% of mass 198	75.2
443	15.0 - 24.0% of mass 442	14.3 (19.0)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0016T	SSTD0016T	S6B9622.D	10/08/2014	17:14
02	SSTD0106T	SSTD0106T	S6B9623.D	10/08/2014	17:34
03	SSTD0.16T	SSTD0.16T	S6B9624.D	10/08/2014	17:54
04	SSTD0.56T	SSTD0.56T	S6B9625.D	10/08/2014	18:14
05	SSTD0056T	SSTD0056T	S6B9626.D	10/08/2014	18:34
06	SICV0016T	SICV0016T	S6B9627.D	10/08/2014	18:54

6H - FORM VI SV-SIM

SEMIVOLATILE ORGANICS SIM INITIAL CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date(s): 10/08/2014 10/08/2014

Calibration Time(s): 17:14 18:34

LAB FILE ID: RRF0.1 = S6B9624.D RRF0.5 = S6B9625.D

RRF001 = S6B9622.D RRF005 = S6B9626.D RRF010 = S6B9623.D

COMPOUND	RRF0.1	RRF0.5	RRF001	RRF005	RRF010	$\overline{RRF}$	%RSD
Naphthalene	1.375	1.275	1.272	1.239	1.209	1.274	4.9
Benzo(e)pyrene-d12	1.007	0.905	0.890	0.941	0.955	0.940	4.9

7H - FORM VII SV-SIM

SEMIVOLATILE SIM CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/08/2014 Time: 18:54

Lab File ID: S6B9627.D Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SICV0016T Init. Calib. Time(s): 17:14 18:34

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF001	MIN RRF	%D	MAX %D
Naphthalene	1.274	1.242	0.010	-2.5	20.0
Benzo(e)pyrene-d12	0.940	0.869	0.010	-7.5	20.0

5B - FORM V SV
SEMIVOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.
DFTPP6J

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9889.D DFTPP Injection Date: 10/23/2014

Instrument ID: S6 DFTPP Injection Time: 9:22

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	50.5
68	Less than 2.0% of mass 69	0.1 (0.2)1
69	Mass 69 relative abundance	52.4
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	10.0 - 80.0% of mass 198	49.8
197	Less than 2.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 60.0% of mass 198	29.6
365	Greater than 1.0% of mass 198	3.8
441	Present, but less than mass 443	8.8
442	50.0 - 100% of mass 198	90.5
443	15.0 - 24.0% of mass 442	17.9 (19.7)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0016J	SSTD0016J	S6B9890.D	10/23/2014	9:34
02	MB-79550	MB-79550	S6B9891.D	10/23/2014	10:29
03	LCS-79550	LCS-79550	S6B9892.D	10/23/2014	10:49
04	LCSD-79550	LCSD-79550	S6B9893.D	10/23/2014	11:09
05	MW02-10S-NWG-101014	N1822-50C	S6B9894.D	10/23/2014	11:30
06	FD02-101014	N1822-52C	S6B9895.D	10/23/2014	11:50
07	MB-79516	MB-79516	S6B9896.D	10/23/2014	12:10
08	LCS-79516	LCS-79516	S6B9897.D	10/23/2014	12:30
09	RB02-100814	N1822-40C	S6B9898.D	10/23/2014	12:50
10	MW02-09S-NWG-100814	N1822-42C	S6B9899.D	10/23/2014	13:10
11	MW01-14S-NWG-100914	N1822-47C	S6B9901.D	10/23/2014	13:50
12	MW01-14S-NWG-100914	N1822-47CMS	S6B9902.D	10/23/2014	14:10
13	MW01-14S-NWG-100914	N1822-47CMSD	S6B9903.D	10/23/2014	14:30
14	MB-79362	MB-79362	S6B9904.D	10/23/2014	14:50
15	LCS-79362	LCS-79362	S6B9905.D	10/23/2014	15:10

5B - FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT

PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.

DFTPP6J

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9889.D DFTPP Injection Date: 10/23/2014

Instrument ID: S6 DFTPP Injection Time: 9:22

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	50.5
68	Less than 2.0% of mass 69	0.1 (0.2)1
69	Mass 69 relative abundance	52.4
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	10.0 - 80.0% of mass 198	49.8
197	Less than 2.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 60.0% of mass 198	29.6
365	Greater than 1.0% of mass 198	3.8
441	Present, but less than mass 443	8.8
442	50.0 - 100% of mass 198	90.5
443	15.0 - 24.0% of mass 442	17.9 (19.7)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
16	MW03-02S-NWG-092914	N1822-02B	S6B9906.D	10/23/2014	15:30
17	MW03-15I-NWG-092914	N1822-04B	S6B9907.D	10/23/2014	15:50
18	MW03-15I-NWG-092914	N1822-04BMS	S6B9908.D	10/23/2014	16:10
19	MW03-15I-NWG-092914	N1822-04BMSD	S6B9909.D	10/23/2014	16:30
20	MW03-04S-NWG-093014	N1822-07B	S6B9910.D	10/23/2014	16:50
21	RB01-100114	N1822-14C	S6B9911.D	10/23/2014	17:10
22	MW03-05S-NWG-100114	N1822-16C	S6B9912.D	10/23/2014	17:30
23	MW02-08SA-NWG-100114	N1822-20C	S6B9913.D	10/23/2014	17:50
24	MW02-05S-NWG-100214	N1822-23C	S6B9914.D	10/23/2014	18:10
25	MW01-10S-NWG-100214	N1822-27C	S6B9915.D	10/23/2014	18:31
26	MW01-12S-NWG-100214	N1822-29C	S6B9916.D	10/23/2014	18:51
27	MW02-03S-NWG-100314	N1822-32C	S6B9917.D	10/23/2014	19:10

7H - FORM VII SV-SIM

SEMIVOLATILE SIM CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/23/2014 Time: 9:34

Lab File ID: S6B9890.D Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016J Init. Calib. Time(s): 17:14 18:34

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF001	MIN RRF	%D	MAX %D
Naphthalene	1.274	1.254	0.010	-1.6	20.0
Benzo(e)pyrene-d12	0.940	0.911	0.010	-3.1	20.0

5B - FORM V SV
SEMIVOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.
DFTPP6K

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: S6B9918.D DFTPP Injection Date: 10/24/2014

Instrument ID: S6 DFTPP Injection Time: 9:29

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	55.6
68	Less than 2.0% of mass 69	0.4 (0.7)1
69	Mass 69 relative abundance	56.4
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	10.0 - 80.0% of mass 198	52.5
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.7
275	10.0 - 60.0% of mass 198	26.6
365	Greater than 1.0% of mass 198	3.8
441	Present, but less than mass 443	5.3
442	50.0 - 100% of mass 198	76.3
443	15.0 - 24.0% of mass 442	15.0 (19.7)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0016K	SSTD0016K	S6B9919.D	10/24/2014	9:58
02	MB-79479	MB-79479	S6B9920.D	10/24/2014	10:25
03	LCS-79479	LCS-79479	S6B9921.D	10/24/2014	10:45
04	LCSD-79479	LCSD-79479	S6B9922.D	10/24/2014	11:05
05	MW02-4SA-NWG-100614	N1822-35B	S6B9923.D	10/24/2014	11:25
06	MW02-11S-NWG-100814	N1822-44C	S6B9924.D	10/24/2014	11:45

7H - FORM VII SV-SIM

SEMIVOLATILE SIM CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: S6 Calibration Date: 10/24/2014 Time: 9:58

Lab File ID: S6B9919.D Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016K Init. Calib. Time(s): 17:14 18:34

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF001	MIN RRF	%D	MAX %D
Naphthalene	1.274	1.284	0.010	0.8	20.0
Benzo(e)pyrene-d12	0.940	0.906	0.010	-3.5	20.0

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 8081B, Organochlorine Pesticides by GC-ECD

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8081B

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: E6
Instrument Type: GC-ECD
Description: HP6890
Manufacturer: Hewlett-Packard

Model: 6890
GC Column used: 30 m X 0.53 mm ID [0.50 um thickness] CLPPest capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW03-15I-NWG-092914 (N1822-04BMS) and MW03-15I-NWG-092914 (N1822-04BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

No sample in this SDG required analysis at dilution.

F. Samples:

The lower concentration between the primary and confirmatory GC column concentrations is reported due to the presence of interferences unless otherwise indicated. P flags are assigned to compounds when D% between the two columns are greater than 40%.

No other unusual occurrences were noted during sample analysis.

G. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

The following samples were manually integrated:

INDC1E6 Decachlorobiphenyl on front column , delta-BHC on rear column , Heptachlor on rear column due to M3

INDC3DF Decachlorobiphenyl on front column due to M3

PEMEA beta-BHC on rear column due to M3

TOXAPH3D6 Decachlorobiphenyl on front column , Toxaphene on front column , Toxaphene on rear column due to M3

TOXAPH3E6 Decachlorobiphenyl on front column , Toxaphene on front column due to M3

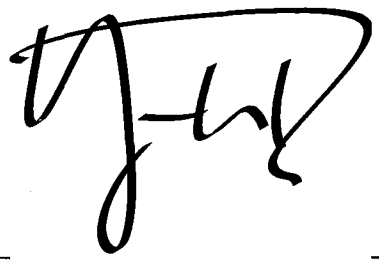
TOXAPH3EA Decachlorobiphenyl on front column , Toxaphene on front column due to M3

TOXAPH3EC Decachlorobiphenyl on front column , Tetrachloro-m-xylene on front column , Toxaphene on front column due to M3

TOXAPH4E6 Decachlorobiphenyl on front column , Toxaphene on front column due to M3

TOXAPH5E6 Decachlorobiphenyl on front column , Toxaphene on front column due to M3

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____10/30/2014_____

2N - FORM II PEST-1

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	MB-79313	80	81	83	80			0
02	LCS-79313	81	83	81	82			0
03	MW03-02S-NWG-092914	78	80	56	56			0
04	MW03-15I-NWG-092914	79	80	58	60			0
05	MW03-15I-NWG-092914MS	77	78	59	60			0
06	MW03-15I-NWG-092914MSD	79	81	58	58			0
07	FD01-093014	78	79	60	60			0
08	MW03-17S-NWG-093014	77	78	60	60			0
09	MB-79427	81		68				0
10	LCS-79427	82	82	63	64			0
11	LCSD-79427	79	78	59	59			0
12	RB01-100114	80	80	60	60			0
13	MW03-15S-NWG-100114	80	80	62	63			0
14	MW03-17I-NWG-100214	83	83	63	64			0
15	MW03-16S-NWG-100614	80	79	62	63			0

	QC LIMITS
TCX = Tetrachloro-m-xylene	(25-140)
DCB = Decachlorobiphenyl	(30-135)

Column to be used to flag recovery values

* Values outside of QC limits

D. Surrogate diluted out

som14.10.02.1616

SW846

4E - FORM IV PEST

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79313

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: E6B3394F.D / E6B3394R.D Lab Sample ID: MB-79313

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 10/01/2014

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

Date Analyzed (1): 10/14/2014 Date Analyzed (2): 10/14/2014

Time Analyzed (1): 16:59 Time Analyzed (2): 16:59

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-79313	LCS-79313	10/14/2014	10/14/2014
02	MW03-02S-NWG-092914	N1822-02B	10/20/2014	10/20/2014
03	MW03-15I-NWG-092914	N1822-04B	10/20/2014	10/20/2014
04	MW03-15I-NWG-092914MS	N1822-04BMS	10/20/2014	10/20/2014
05	MW03-15I-NWG-092914MSD	N1822-04BMSD	10/20/2014	10/20/2014
06	FD01-093014	N1822-09B	10/20/2014	10/20/2014
07	MW03-17S-NWG-093014	N1822-11B	10/20/2014	10/20/2014

COMMENTS:

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79313

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79313

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3394F.D/E6B3394R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/14/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

3L - FORM III PEST-3
WATER PESTICIDE LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79313

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79313 LCS Lot No.: A092276

Date Extracted: 10/01/2014 Date Analyzed (1): 10/14/2014

Instrument ID (1): E6 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
alpha-BHC	0.2000	0.1882	94		60-130
beta-BHC	0.2000	0.1841	92		65-125
delta-BHC	0.2000	0.2458	123		45-135
gamma-BHC (Lindane)	0.2000	0.1867	93		25-135
Heptachlor	0.2000	0.1775	89		40-130
Aldrin	0.2000	0.1867	93		25-140
Heptachlor epoxide	0.2000	0.1801	90		60-130
Endosulfan I	0.2000	0.1650	83		50-110
Dieldrin	0.4000	0.3787	95		60-130
4,4´-DDE	0.4000	0.3724	93		35-140
Endrin	0.4000	0.4209	105		55-135
Endosulfan II	0.4000	0.3809	95		30-130
4,4´-DDD	0.4000	0.3614	90		25-150
Endosulfan sulfate	0.4000	0.4243	106		55-135
4,4´-DDT	0.4000	0.3760	94		45-140
Methoxychlor	2.0000	1.9021	95		55-150
Endrin ketone	0.4000	0.4150	104		75-125
Endrin aldehyde	0.4000	0.4343	109		55-135
alpha-Chlordane	0.2000	0.1855	93		65-125
gamma-Chlordane	0.2000	0.1896	95		60-125

Instrument ID (2): E6 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 10/14/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
alpha-BHC	0.2000	0.1855	93		60-130
beta-BHC	0.2000	0.1870	94		65-125
delta-BHC	0.2000	0.2382	119		45-135
gamma-BHC (Lindane)	0.2000	0.1877	94		25-135

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79313

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79313 LCS Lot No.: A092276

Date Extracted: 10/01/2014 Date Analyzed (1): 10/14/2014

Heptachlor	0.2000	0.1764	88	40-130
Aldrin	0.2000	0.1766	88	25-140
Heptachlor epoxide	0.2000	0.1809	90	60-130
Endosulfan I	0.2000	0.1761	88	50-110
Dieldrin	0.4000	0.3813	95	60-130
4,4'-DDE	0.4000	0.3668	92	35-140
Endrin	0.4000	0.4392	110	55-135
Endosulfan II	0.4000	0.3772	94	30-130
4,4'-DDD	0.4000	0.3614	90	25-150
Endosulfan sulfate	0.4000	0.4323	108	55-135
4,4'-DDT	0.4000	0.3644	91	45-140
Methoxychlor	2.0000	1.9441	97	55-150
Endrin ketone	0.4000	0.4164	104	75-125
Endrin aldehyde	0.4000	0.4494	112	55-135
alpha-Chlordane	0.2000	0.1873	94	65-125
gamma-Chlordane	0.2000	0.1822	91	60-125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 40 outside limits.

COMMENTS:

som14.10.02.1616

3G - FORM III PEST-1

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

Instrument ID: E6 GC Column : CLPPest ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
alpha-BHC	0.2000	0.0000	0.1782	89		60-130
beta-BHC	0.2000	0.0000	0.1580	79		65-125
delta-BHC	0.2000	0.0000	0.2256	113		45-135
gamma-BHC (Lindane)	0.2000	0.0000	0.1696	85		25-135
Heptachlor	0.2000	0.0000	0.1483	74		40-130
Aldrin	0.2000	0.0000	0.1643	82		25-140
Heptachlor epoxide	0.2000	0.0000	0.1535	77		60-130
Endosulfan I	0.2000	0.0000	0.1411	71		50-110
Dieldrin	0.4000	0.0000	0.3311	83		60-130
4,4´-DDE	0.4000	0.0000	0.3402	85		35-140
Endrin	0.4000	0.0000	0.3504	88		55-135
Endosulfan II	0.4000	0.0000	0.3061	77		30-130
4,4´-DDD	0.4000	0.0000	0.3322	83		25-150
Endosulfan sulfate	0.4000	0.0000	0.3366	84		55-135
4,4´-DDT	0.4000	0.0000	0.2618	65		45-140
Methoxychlor	2.0000	0.0000	1.2599	63		55-150
Endrin ketone	0.4000	0.0000	0.3253	81		75-125
Endrin aldehyde	0.4000	0.0000	0.3545	89		55-135
alpha-Chlordane	0.2000	0.0000	0.1576	79		65-125
gamma-Chlordane	0.2000	0.0000	0.1636	82		60-125

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
alpha-BHC	0.2000	0.1865	93		5		0-30	60-130
beta-BHC	0.2000	0.1644	82		4		0-30	65-125
delta-BHC	0.2000	0.2365	118		5		0-30	45-135
gamma-BHC (Lindane)	0.2000	0.1773	89		4		0-30	25-135
Heptachlor	0.2000	0.1539	77		4		0-30	40-130
Aldrin	0.2000	0.1704	85		4		0-30	25-140
Heptachlor epoxide	0.2000	0.1600	80		4		0-30	60-130
Endosulfan I	0.2000	0.1450	73		3		0-30	50-110
Dieldrin	0.4000	0.3368	84		2		0-30	60-130
4,4´-DDE	0.4000	0.3456	86		2		0-30	35-140
Endrin	0.4000	0.3624	91		3		0-30	55-135
Endosulfan II	0.4000	0.3099	77		1		0-30	30-130
4,4´-DDD	0.4000	0.3429	86		3		0-30	25-150
Endosulfan sulfate	0.4000	0.3482	87		3		0-30	55-135
4,4´-DDT	0.4000	0.2582	65		1		0-30	45-140
Methoxychlor	2.0000	1.2370	62		2		0-30	55-150
Endrin ketone	0.4000	0.3296	82		1		0-30	75-125
Endrin aldehyde	0.4000	0.3631	91		2		0-30	55-135
alpha-Chlordane	0.2000	0.1631	82		3		0-30	65-125
gamma-Chlordane	0.2000	0.1701	85		4		0-30	60-125

3G - FORM III PEST-1

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

Instrument ID: E6 GC Column : CLPPest ID: 0.53 (mm)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 0 out of 40 outside limits

COMMENTS:

3G - FORM III PEST-1

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

Instrument ID: E6 GC Column : CLPPestII ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
alpha-BHC	0.2000	0.0000	0.1773	89		60-130
beta-BHC	0.2000	0.0000	0.1768	88		65-125
delta-BHC	0.2000	0.0000	0.2433	122		45-135
gamma-BHC (Lindane)	0.2000	0.0000	0.1724	86		25-135
Heptachlor	0.2000	0.0000	0.1443	72		40-130
Aldrin	0.2000	0.0000	0.1592	80		25-140
Heptachlor epoxide	0.2000	0.0000	0.1625	81		60-130
Endosulfan I	0.2000	0.0000	0.1538	77		50-110
Dieldrin	0.4000	0.0000	0.2945	74		60-130
4,4´-DDE	0.4000	0.0000	0.3120	78		35-140
Endrin	0.4000	0.0000	0.3330	83		55-135
Endosulfan II	0.4000	0.0000	0.3195	80		30-130
4,4´-DDD	0.4000	0.0000	0.3364	84		25-150
Endosulfan sulfate	0.4000	0.0000	0.3311	83		55-135
4,4´-DDT	0.4000	0.0000	0.2421	61		45-140
Methoxychlor	2.0000	0.0000	1.2591	63		55-150
Endrin ketone	0.4000	0.0000	0.3069	77		75-125
Endrin aldehyde	0.4000	0.0000	0.3388	85		55-135
alpha-Chlordane	0.2000	0.0000	0.1595	80		65-125
gamma-Chlordane	0.2000	0.0000	0.1538	77		60-125

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
alpha-BHC	0.2000	0.1870	93		5		0-30	60-130
beta-BHC	0.2000	0.1842	92		4		0-30	65-125
delta-BHC	0.2000	0.2461	123		1		0-30	45-135
gamma-BHC (Lindane)	0.2000	0.1817	91		5		0-30	25-135
Heptachlor	0.2000	0.1504	75		4		0-30	40-130
Aldrin	0.2000	0.1663	83		4		0-30	25-140
Heptachlor epoxide	0.2000	0.1652	83		2		0-30	60-130
Endosulfan I	0.2000	0.1551	78		1		0-30	50-110
Dieldrin	0.4000	0.3095	77		5		0-30	60-130
4,4´-DDE	0.4000	0.3247	81		4		0-30	35-140
Endrin	0.4000	0.3372	84		1		0-30	55-135
Endosulfan II	0.4000	0.3256	81		2		0-30	30-130
4,4´-DDD	0.4000	0.3385	85		1		0-30	25-150
Endosulfan sulfate	0.4000	0.3426	86		3		0-30	55-135
4,4´-DDT	0.4000	0.2367	59		2		0-30	45-140
Methoxychlor	2.0000	1.2360	62		2		0-30	55-150
Endrin ketone	0.4000	0.3113	78		1		0-30	75-125
Endrin aldehyde	0.4000	0.3426	86		1		0-30	55-135
alpha-Chlordane	0.2000	0.1660	83		4		0-30	65-125
gamma-Chlordane	0.2000	0.1623	81		5		0-30	60-125

3G - FORM III PEST-1

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

Instrument ID: E6 GC Column : CLPPestII ID: 0.53 (mm)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 0 out of 40 outside limits

COMMENTS:

4E - FORM IV PEST

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79427

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: E6B3591F.D / Lab Sample ID: MB-79427

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 10/08/2014

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

Date Analyzed (1): 10/21/2014 Date Analyzed (2):

Time Analyzed (1): 0:34 Time Analyzed (2):

Instrument ID (1): E6 Instrument ID (2):

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): ID: (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-79427	LCS-79427	10/21/2014	10/21/2014
02	LCSD-79427	LCSD-79427	10/21/2014	10/21/2014
03	RB01-100114	N1822-14C	10/21/2014	10/21/2014
04	MW03-15S-NWG-100114	N1822-18C	10/21/2014	10/21/2014
05	MW03-17I-NWG-100214	N1822-25C	10/21/2014	10/21/2014
06	MW03-16S-NWG-100614	N1822-37B	10/21/2014	10/21/2014

COMMENTS:

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79427

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79427

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B3591F.D/E6B3591R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/21/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79427

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79427 LCS Lot No.:

Date Extracted: 10/08/2014 Date Analyzed (1): 10/21/2014

Instrument ID (1): E6 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC #	QC LIMITS
alpha-BHC	0.2000	0.2042	102	60-130
beta-BHC	0.2000	0.1770	89	65-125
delta-BHC	0.2000	0.2310	115	45-135
gamma-BHC (Lindane)	0.2000	0.1920	96	25-135
Heptachlor	0.2000	0.1729	86	40-130
Aldrin	0.2000	0.1888	94	25-140
Heptachlor epoxide	0.2000	0.1754	88	60-130
Endosulfan I	0.2000	0.1779	89	50-110
Dieldrin	0.4000	0.3815	95	60-130
4,4'-DDE	0.4000	0.3790	95	35-140
Endrin	0.4000	0.3870	97	55-135
Endosulfan II	0.4000	0.3707	93	30-130
4,4'-DDD	0.4000	0.3683	92	25-150
Endosulfan sulfate	0.4000	0.3873	97	55-135
4,4'-DDT	0.4000	0.3106	78	45-140
Methoxychlor	2.0000	1.4417	72	55-150
Endrin ketone	0.4000	0.3625	91	75-125
Endrin aldehyde	0.4000	0.3989	100	55-135
alpha-Chlordane	0.2000	0.1780	89	65-125
gamma-Chlordane	0.2000	0.1858	93	60-125

Instrument ID (2): E6 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 10/21/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC #	QC LIMITS
alpha-BHC	0.2000	0.2058	103	60-130
beta-BHC	0.2000	0.1997	100	65-125
delta-BHC	0.2000	0.2542	127	45-135
gamma-BHC (Lindane)	0.2000	0.2000	100	25-135

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79427

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79427 LCS Lot No.:

Date Extracted: 10/08/2014 Date Analyzed (1): 10/21/2014

Heptachlor	0.2000	0.1758	88	40-130
Aldrin	0.2000	0.1857	93	25-140
Heptachlor epoxide	0.2000	0.1813	91	60-130
Endosulfan I	0.2000	0.1931	97	50-110
Dieldrin	0.4000	0.3572	89	60-130
4,4'-DDE	0.4000	0.3586	90	35-140
Endrin	0.4000	0.3678	92	55-135
Endosulfan II	0.4000	0.3951	99	30-130
4,4'-DDD	0.4000	0.3679	92	25-150
Endosulfan sulfate	0.4000	0.3803	95	55-135
4,4'-DDT	0.4000	0.3037	76	45-140
Methoxychlor	2.0000	1.4277	71	55-150
Endrin ketone	0.4000	0.3437	86	75-125
Endrin aldehyde	0.4000	0.3715	93	55-135
alpha-Chlordane	0.2000	0.1824	91	65-125
gamma-Chlordane	0.2000	0.1753	88	60-125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 40 outside limits.

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79427

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79427 LCS Lot No.:

Date Extracted: 10/08/2014 Date Analyzed (1): 10/21/2014

Instrument ID (1): E6 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
alpha-BHC	0.2000	0.1986	99		60-130	3.0		30
beta-BHC	0.2000	0.1709	85		65-125	5.0		30
delta-BHC	0.2000	0.2246	112		45-135	3.0		30
gamma-BHC (Lindane)	0.2000	0.1858	93		25-135	3.0		30
Heptachlor	0.2000	0.1675	84		40-130	2.0		30
Aldrin	0.2000	0.1817	91		25-140	3.0		30
Heptachlor epoxide	0.2000	0.1688	84		60-130	5.0		30
Endosulfan I	0.2000	0.1718	86		50-110	3.0		30
Dieldrin	0.4000	0.3658	91		60-130	4.0		30
4,4'-DDE	0.4000	0.3656	91		35-140	4.0		30
Endrin	0.4000	0.3723	93		55-135	4.0		30
Endosulfan II	0.4000	0.3530	88		30-130	6.0		30
4,4'-DDD	0.4000	0.3497	87		25-150	6.0		30
Endosulfan sulfate	0.4000	0.3713	93		55-135	4.0		30
4,4'-DDT	0.4000	0.2996	75		45-140	4.0		30
Methoxychlor	2.0000	1.3993	70		55-150	3.0		30
Endrin ketone	0.4000	0.3448	86		75-125	6.0		30
Endrin aldehyde	0.4000	0.3851	96		55-135	4.0		30
alpha-Chlordane	0.2000	0.1711	86		65-125	3.0		30
gamma-Chlordane	0.2000	0.1790	89		60-125	4.0		30

Instrument ID (2): E6 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 10/21/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
alpha-BHC	0.2000	0.1985	99		60-130	4.0		30
beta-BHC	0.2000	0.1964	98		65-125	2.0		30
delta-BHC	0.2000	0.2559	128		45-135	1.0		30
gamma-BHC (Lindane)	0.2000	0.1939	97		25-135	3.0		30

COMMENTS:

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79427

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79427 LCS Lot No.:

Date Extracted: 10/08/2014 Date Analyzed (1): 10/21/2014

Heptachlor	0.2000	0.1717	86	40-130	2.0	30
Aldrin	0.2000	0.1796	90	25-140	3.0	30
Heptachlor epoxide	0.2000	0.1793	90	60-130	1.0	30
Endosulfan I	0.2000	0.1865	93	50-110	4.0	30
Dieldrin	0.4000	0.3454	86	60-130	3.0	30
4,4´-DDE	0.4000	0.3491	87	35-140	3.0	30
Endrin	0.4000	0.3557	89	55-135	3.0	30
Endosulfan II	0.4000	0.3786	95	30-130	4.0	30
4,4´-DDD	0.4000	0.3559	89	25-150	3.0	30
Endosulfan sulfate	0.4000	0.3604	90	55-135	5.0	30
4,4´-DDT	0.4000	0.2973	74	45-140	3.0	30
Methoxychlor	2.0000	1.3972	70	55-150	1.0	30
Endrin ketone	0.4000	0.3287	82	75-125	5.0	30
Endrin aldehyde	0.4000	0.3615	90	55-135	3.0	30
alpha-Chlordane	0.2000	0.1755	88	65-125	3.0	30
gamma-Chlordane	0.2000	0.1686	84	60-125	5.0	30

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 40 outside limits.

RPD: 0 out of 40 outside limits.

COMMENTS:

som14.10.02.1616

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 10/09/2014 10/09/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 9.543 DCB: 20.713

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	PEMD6	E6B3268F.D	10/9/2014	17:51	9.538	20.711
02	TOXAPH3D6	E6B3269F.D	10/9/2014	18:18	9.536	20.707
03	TC3D6	E6B3270F.D	10/9/2014	18:46	9.538	20.709
04	INDC1D6	E6B3271F.D	10/9/2014	19:13	9.540	20.713
05	INDC2D6	E6B3272F.D	10/9/2014	19:41	9.544	20.714
06	INDC3D6	E6B3273F.D	10/9/2014	20:08	9.542	20.713
07	INDC4D6	E6B3274F.D	10/9/2014	20:36	9.543	20.713
08	INDC5D6	E6B3275F.D	10/9/2014	21:03	9.544	20.714
09	INDC3DICV	E6B3276F.D	10/9/2014	21:31	9.543	20.713
10	TOXAPH3DG	E6B3389F.D	10/14/2014	14:41	9.551	20.709
11	PEMCG	E6B3390F.D	10/14/2014	15:08	9.553	20.710
12	INDC3DG	E6B3391F.D	10/14/2014	15:36	9.550	20.706
13	MB-79313	E6B3394F.D	10/14/2014	16:59	9.549	20.705
14	LCS-79313	E6B3395F.D	10/14/2014	17:27	9.548	20.705
15	PEMCH	E6B3408F.D	10/14/2014	23:23	9.551	20.709
16	INDC3DH	E6B3409F.D	10/14/2014	23:51	9.548	20.707
17	TOXAPH3DH	E6B3410F.D	10/15/2014	0:18	9.551	20.708

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 10/09/2014 10/09/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 10.865 DCB: 23.408

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	PEMD6	E6B3268R.D	10/9/2014	17:51	10.859	23.402
02	TOXAPH3D6	E6B3269R.D	10/9/2014	18:18	10.857	23.402
03	TC3D6	E6B3270R.D	10/9/2014	18:46	10.860	23.403
04	INDC1D6	E6B3271R.D	10/9/2014	19:13	10.862	23.406
05	INDC2D6	E6B3272R.D	10/9/2014	19:41	10.866	23.408
06	INDC3D6	E6B3273R.D	10/9/2014	20:08	10.864	23.407
07	INDC4D6	E6B3274R.D	10/9/2014	20:36	10.866	23.408
08	INDC5D6	E6B3275R.D	10/9/2014	21:03	10.866	23.409
09	INDC3DICV	E6B3276R.D	10/9/2014	21:31	10.865	23.408
10	TOXAPH3DG	E6B3389R.D	10/14/2014	14:41	10.874	23.408
11	PEMCG	E6B3390R.D	10/14/2014	15:08	10.876	23.408
12	INDC3DG	E6B3391R.D	10/14/2014	15:36	10.873	23.405
13	MB-79313	E6B3394R.D	10/14/2014	16:59	10.872	23.402
14	LCS-79313	E6B3395R.D	10/14/2014	17:27	10.871	23.402
15	PEMCH	E6B3408R.D	10/14/2014	23:23	10.874	23.405
16	INDC3DH	E6B3409R.D	10/14/2014	23:51	10.872	23.405
17	TOXAPH3DH	E6B3410R.D	10/15/2014	0:18	10.875	23.407

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	86638000	91188200	97305950	95535275	97201350	4.9
beta-BHC	151247600	158051700	160777450	148233025	146313188	4.1
delta-BHC	153540200	159958800	183544850	182955425	226807613	15.8
gamma-BHC (Lindane)	275668600	287670000	301591400	290811950	300304075	3.6
Heptachlor	297394200	285917100	288232650	271761575	268936800	4.2
Aldrin	264382600	268292000	278902800	272232775	278577300	2.3
Heptachlor epoxide	277997600	274728500	275166050	257013950	255713163	4.0
Endosulfan I	84265000	83390000	82642700	75922400	77580263	4.6
Dieldrin	250558400	257417300	261828225	238911413	237141225	4.4
4,4´-DDE	210196700	216135800	224214675	213524775	215502156	2.4
Endrin	58287100	58402000	58344000	52178963	52119050	6.1
Endosulfan II	207775300	208886450	205408350	190219750	206965494	3.8
4,4´-DDD	180805800	167082850	170413250	161817088	171208575	4.1
Endosulfan sulfate	157427200	165628800	165473925	147158863	147748706	5.8
4,4´-DDT	162463400	168726500	172755800	165237513	174589744	3.0
Methoxychlor	92271440	90568490	87395505	76359655	72508929	10.6
Endrin ketone	73058000	73657800	70912175	63197963	64252575	7.2
Endrin aldehyde	49872300	50497950	49873050	45929563	51908275	4.5
alpha-Chlordane	277256800	270754900	268304100	249354175	250179788	4.8
gamma-Chlordane	85239200	85825800	86619400	80673175	80423350	3.5
TCX (A)	307002600	300340200	295599050	273798775	265277275	6.2
DCB (A)	281439700	271543850	248115075	210724663	198724113	15.1

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	268464600	282625000	304942000	302734500	313812375	6.3
beta-BHC	134861200	141068100	147715550	140429925	142939750	3.3
delta-BHC	129912600	146986100	155826850	159596825	203481888	17.1
gamma-BHC (Lindane)	266817000	277256900	290853550	281964450	289557000	3.5
Heptachlor	254688200	252876700	250389800	234526600	232652438	4.3
Aldrin	260002600	268020700	282060150	272414800	277170175	3.1
Heptachlor epoxide	250299000	253356600	264866000	247419350	248605200	2.8
Endosulfan I	70787200	72049800	72517150	67803050	69031388	2.8
Dieldrin	215462800	219107100	218822225	201445100	198491538	4.7
4,4´-DDE	224124700	235551300	241958175	230209988	226274650	3.1
Endrin	43285500	42904350	42455300	37861350	37011400	7.4
Endosulfan II	187004200	200896700	207996900	189126450	200120444	4.5
4,4´-DDD	119990400	129347750	133159375	119277538	118906131	5.4
Endosulfan sulfate	140468500	148473800	150408925	135557650	138954063	4.5
4,4´-DDT	127701500	137086900	148557975	141087613	145822575	5.8
Methoxychlor	59700680	59159080	56195960	48749003	46407024	11.3
Endrin ketone	58885200	59681800	58065050	51599650	52572025	6.7
Endrin aldehyde	40907500	40923400	39824650	36868975	40892081	4.4
alpha-Chlordane	259896400	262240000	262904350	244676750	243771113	3.8
gamma-Chlordane	254882000	257578800	273703050	259793050	257032513	2.9
TCX (A)	83943600	82764200	82863750	76689100	73739650	5.6
DCB (A)	267170700	259155600	247524325	219383975	211314406	10.2

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

6Q - FORM VI PEST

TOXAPHENE INITIAL CALIBRATION (SINGLE POINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E6 Date(s) Analyzed: 10/09/2014 10/09/2014

GC Column: CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT (ng)	PEAK [1]	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Toxaphene	2	1	16.82	16.75	16.89	2080465
		2	17.33	17.26	17.40	2364608
		3	17.45	17.38	17.52	2227361
		4	18.13	18.06	18.20	2305595
		5				

[1] At least three peaks for each column are required for identification of multicomponent analytes.

6Q - FORM VI PEST

TOXAPHENE INITIAL CALIBRATION (SINGLE POINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E6 Date(s) Analyzed: 10/09/2014 10/09/2014

GC Column: CLPPestII ID: 0.53 (mm)

COMPOUND	AMOUNT (ng)	PEAK [1]	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Toxaphene	2	1	18.58	18.51	18.65	2393825
		2	19.08	19.01	19.15	2300546
		3	20.07	20.00	20.14	1796594
		4	20.17	20.10	20.24	1878919
		5				

[1] At least three peaks for each column are required for identification of multicomponent analytes.

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEMD6 Date Analyzed: 10/09/2014

Lab Sample ID (PEM): PEMD6 Time Analyzed: 17:51

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.909	10.864	10.964	0.009	0.010	-10.0
beta-BHC	11.883	11.838	11.938	0.009	0.010	-10.0
gamma-BHC (Lindane)	11.647	11.603	11.703	0.009	0.010	-10.0
Endrin	16.282	16.214	16.354	0.049	0.050	-2.0
4,4´-DDT	16.942	16.874	17.014	0.094	0.100	-6.0
Methoxychlor	17.867	17.801	17.941	0.236	0.250	-5.6
TCX	9.538	9.493	9.593	0.018	0.020	-10.0
DCB	20.711	20.613	20.813	0.020	0.020	0.0

4,4'-DDT %Breakdown (1): 9.5 Endrin %Breakdown (1): 11.8

Combined %Breakdown (1): 21.3

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEMD6 Date Analyzed: 10/09/2014

Lab Sample ID (PEM): PEMD6 Time Analyzed: 17:51

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.398	12.354	12.454	0.009	0.010	-10.0
beta-BHC	13.419	13.374	13.474	0.010	0.010	0.0
gamma-BHC (Lindane)	13.232	13.188	13.288	0.009	0.010	-10.0
Endrin	18.036	17.969	18.109	0.048	0.050	-4.0
4,4´-DDT	18.783	18.716	18.856	0.095	0.100	-5.0
Methoxychlor	20.052	19.987	20.127	0.236	0.250	-5.6
TCX	10.859	10.815	10.915	0.018	0.020	-10.0
DCB	23.402	23.308	23.508	0.017	0.020	-15.0

4,4'-DDT %Breakdown (1): 9.9 Endrin %Breakdown (1): 13.3

Combined %Breakdown (1): 23.2

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDG Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDG Time Analyzed: 13:18

EPA Sample No. (PEM##): PEMDG Date Analyzed: 10/14/2014

Lab Sample ID (PEM): PEMCG Time Analyzed: 15:08

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.921	10.864	10.964	0.009	0.010	-10.0
beta-BHC	11.897	11.838	11.938	0.010	0.010	0.0
gamma-BHC (Lindane)	11.661	11.603	11.703	0.009	0.010	-10.0
Endrin	16.286	16.214	16.354	0.055	0.050	10.0
4,4´-DDT	16.946	16.874	17.014	0.097	0.100	-3.0
Methoxychlor	17.869	17.801	17.941	0.250	0.250	0.0
TCX	9.553	9.493	9.593	0.018	0.020	-10.0
DCB	20.710	20.613	20.813	0.022	0.020	10.0

4,4'-DDT %Breakdown (1): 11.5 Endrin %Breakdown (1): 8.8

Combined %Breakdown (1): 20.3

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDG Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDG Time Analyzed: 13:18

EPA Sample No. (PEM##): PEMDG Date Analyzed: 10/14/2014

Lab Sample ID (PEM): PEMCG Time Analyzed: 15:08

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.413	12.354	12.454	0.009	0.010	-10.0
beta-BHC	13.434	13.374	13.474	0.010	0.010	0.0
gamma-BHC (Lindane)	13.247	13.188	13.288	0.009	0.010	-10.0
Endrin	18.045	17.969	18.109	0.056	0.050	12.0
4,4´-DDT	18.791	18.716	18.856	0.098	0.100	-2.0
Methoxychlor	20.058	19.987	20.127	0.261	0.250	4.4
TCX	10.876	10.815	10.915	0.019	0.020	-5.0
DCB	23.408	23.308	23.508	0.019	0.020	-5.0

4,4'-DDT %Breakdown (1): 13.3 Endrin %Breakdown (1): 10.3

Combined %Breakdown (1): 23.6

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDH Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDH Time Analyzed: 22:56

EPA Sample No. (PEM##): PEMDH Date Analyzed: 10/14/2014

Lab Sample ID (PEM): PEMCH Time Analyzed: 23:23

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.919	10.864	10.964	0.010	0.010	0.0
beta-BHC	11.898	11.838	11.938	0.010	0.010	0.0
gamma-BHC (Lindane)	11.659	11.603	11.703	0.009	0.010	-10.0
Endrin	16.284	16.214	16.354	0.053	0.050	6.0
4,4´-DDT	16.943	16.874	17.014	0.106	0.100	6.0
Methoxychlor	17.868	17.801	17.941	0.255	0.250	2.0
TCX	9.551	9.493	9.593	0.019	0.020	-5.0
DCB	20.709	20.613	20.813	0.023	0.020	15.0

4,4'-DDT %Breakdown (1): 8.3 Endrin %Breakdown (1): 14.7

Combined %Breakdown (1): 23.0

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDH Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDH Time Analyzed: 22:56

EPA Sample No. (PEM##): PEMDH Date Analyzed: 10/14/2014

Lab Sample ID (PEM): PEMCH Time Analyzed: 23:23

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.411	12.354	12.454	0.009	0.010	-10.0
beta-BHC	13.433	13.374	13.474	0.010	0.010	0.0
gamma-BHC (Lindane)	13.246	13.188	13.288	0.009	0.010	-10.0
Endrin	18.043	17.969	18.109	0.056	0.050	12.0
4,4´-DDT	18.788	18.716	18.856	0.102	0.100	2.0
Methoxychlor	20.057	19.987	20.127	0.258	0.250	3.2
TCX	10.874	10.815	10.915	0.019	0.020	-5.0
DCB	23.405	23.308	23.508	0.018	0.020	-10.0

4,4'-DDT %Breakdown (1): 8.1 Endrin %Breakdown (1): 14.8

Combined %Breakdown (1): 22.9

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDG Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDG Time Analyzed: 13:18

EPA Sample No. (INDC3##): INDC3DG Date Analyzed: 10/14/2014

Lab Sample ID (INDC3): INDC3DG Time Analyzed: 15:36

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.919	10.864	10.964	93573755	98878050	5.7
beta-BHC	11.893	11.838	11.938	152924593	156240400	2.2
delta-BHC	12.296	12.241	12.341	181361378	178702500	-1.5
gamma-BHC (Lindane)	11.658	11.603	11.703	291209205	306287250	5.2
Heptachlor	12.704	12.651	12.751	282448465	298499300	5.7
Aldrin	13.342	13.290	13.390	272477495	292572650	7.4
Heptachlor epoxide	14.586	14.517	14.657	268123853	284840750	6.2
Endosulfan I	15.362	15.294	15.434	80760073	85757700	6.2
Dieldrin	15.829	15.762	15.902	249171313	271755900	9.1
4,4´-DDE	15.268	15.200	15.340	215914821	229975500	6.5
Endrin	16.281	16.214	16.354	55866223	66573400	19.2
Endosulfan II	16.721	16.654	16.794	203851069	218303175	7.1
4,4´-DDD	16.418	16.350	16.490	170265513	173996025	2.2
Endosulfan sulfate	18.307	18.242	18.382	156687499	182545925	16.5
4,4´-DDT	16.941	16.874	17.014	168754591	179363600	6.3
Methoxychlor	17.866	17.801	17.941	83820804	90680305	8.2
Endrin ketone	18.847	18.783	18.923	69015703	74388500	7.8
Endrin aldehyde	17.501	17.435	17.575	49616228	53828925	8.5
alpha-Chlordane	15.104	15.035	15.175	263169953	281629200	7.0
gamma-Chlordane	14.845	14.776	14.916	83756185	90816950	8.4
TCX	9.550	9.493	9.593	288403580	305996100	6.1
DCB	20.706	20.613	20.813	242109480	259794150	7.3

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

no Samples

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDG Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDG Time Analyzed: 13:18

EPA Sample No. (INDC3##): INDC3DG Date Analyzed: 10/14/2014

Lab Sample ID (INDC3): INDC3DG Time Analyzed: 15:36

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.411	12.354	12.454	294515695	308935850	4.9
beta-BHC	13.430	13.374	13.474	141402905	149387650	5.6
delta-BHC	14.091	14.037	14.137	159160853	164195050	3.2
gamma-BHC (Lindane)	13.244	13.188	13.288	281289780	298744150	6.2
Heptachlor	14.228	14.173	14.273	245026748	253014800	3.3
Aldrin	14.931	14.878	14.978	271933685	293128000	7.8
Heptachlor epoxide	16.106	16.035	16.175	252909230	265484750	5.0
Endosulfan I	16.903	16.831	16.971	70437718	77117550	9.5
Dieldrin	17.438	17.367	17.507	210665753	231757025	10.0
4,4´-DDE	17.065	16.994	17.134	231623763	251060700	8.4
Endrin	18.040	17.969	18.109	40703580	50542650	24.2
Endosulfan II	18.446	18.374	18.514	197028939	206857875	5.0
4,4´-DDD	18.184	18.114	18.254	124136239	123841875	-0.2
Endosulfan sulfate	19.611	19.542	19.682	142772588	166250500	16.4
4,4´-DDT	18.786	18.716	18.856	140051313	144985675	3.5
Methoxychlor	20.055	19.987	20.127	54042349	59236440	9.6
Endrin ketone	20.658	20.589	20.729	56160745	60177700	7.2
Endrin aldehyde	19.084	19.014	19.154	39883321	44564700	11.7
alpha-Chlordane	16.770	16.699	16.839	254697723	276365500	8.5
gamma-Chlordane	16.481	16.410	16.550	260597883	276778150	6.2
TCX	10.873	10.815	10.915	80000060	85981250	7.5
DCB	23.405	23.308	23.508	240909801	248597200	3.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDH Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDH Time Analyzed: 22:56

EPA Sample No. (INDC3##): INDC3DH Date Analyzed: 10/14/2014

Lab Sample ID (INDC3): INDC3DH Time Analyzed: 23:51

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.917	10.864	10.964	93573755	87799350	-6.2
beta-BHC	11.894	11.838	11.938	152924593	139427600	-8.8
delta-BHC	12.296	12.241	12.341	181361378	157320950	-13.3
gamma-BHC (Lindane)	11.658	11.603	11.703	291209205	269153000	-7.6
Heptachlor	12.703	12.651	12.751	282448465	264274400	-6.4
Aldrin	13.342	13.290	13.390	272477495	254998550	-6.4
Heptachlor epoxide	14.586	14.517	14.657	268123853	252831650	-5.7
Endosulfan I	15.362	15.294	15.434	80760073	76055300	-5.8
Dieldrin	15.830	15.762	15.902	249171313	236331350	-5.2
4,4´-DDE	15.270	15.200	15.340	215914821	194658950	-9.8
Endrin	16.281	16.214	16.354	55866223	55732950	-0.2
Endosulfan II	16.722	16.654	16.794	203851069	198546875	-2.6
4,4´-DDD	16.419	16.350	16.490	170265513	149842625	-12.0
Endosulfan sulfate	18.308	18.242	18.382	156687499	157862525	0.7
4,4´-DDT	16.942	16.874	17.014	168754591	151645725	-10.1
Methoxychlor	17.867	17.801	17.941	83820804	78604060	-6.2
Endrin ketone	18.848	18.783	18.923	69015703	69184475	0.2
Endrin aldehyde	17.501	17.435	17.575	49616228	47374250	-4.5
alpha-Chlordane	15.104	15.035	15.175	263169953	246983750	-6.2
gamma-Chlordane	14.844	14.776	14.916	83756185	80557800	-3.8
TCX	9.548	9.493	9.593	288403580	273193750	-5.3
DCB	20.707	20.613	20.813	242109480	259135425	7.0

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

no samples

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/09/2014 10/09/2014

EPA Sample No. (PIBLK##): PIBLKDH Date Analyzed: 10/14/2014

Lab Sample ID (PIBLK): PIBLKDH Time Analyzed: 22:56

EPA Sample No. (INDC3##): INDC3DH Date Analyzed: 10/14/2014

Lab Sample ID (INDC3): INDC3DH Time Analyzed: 23:51

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.410	12.354	12.454	294515695	269709350	-8.4
beta-BHC	13.430	13.374	13.474	141402905	130424350	-7.8
delta-BHC	14.093	14.037	14.137	159160853	145636750	-8.5
gamma-BHC (Lindane)	13.243	13.188	13.288	281289780	261819100	-6.9
Heptachlor	14.228	14.173	14.273	245026748	217696200	-11.2
Aldrin	14.931	14.878	14.978	271933685	256181700	-5.8
Heptachlor epoxide	16.107	16.035	16.175	252909230	234948900	-7.1
Endosulfan I	16.903	16.831	16.971	70437718	68289350	-3.1
Dieldrin	17.438	17.367	17.507	210665753	204863700	-2.8
4,4´-DDE	17.066	16.994	17.134	231623763	216294550	-6.6
Endrin	18.041	17.969	18.109	40703580	42260800	3.8
Endosulfan II	18.446	18.374	18.514	197028939	190008550	-3.6
4,4´-DDD	18.185	18.114	18.254	124136239	108493725	-12.6
Endosulfan sulfate	19.611	19.542	19.682	142772588	143753250	0.7
4,4´-DDT	18.786	18.716	18.856	140051313	124299825	-11.2
Methoxychlor	20.056	19.987	20.127	54042349	51260435	-5.1
Endrin ketone	20.658	20.589	20.729	56160745	56893700	1.3
Endrin aldehyde	19.084	19.014	19.154	39883321	39011275	-2.2
alpha-Chlordane	16.771	16.699	16.839	254697723	241343400	-5.2
gamma-Chlordane	16.482	16.410	16.550	260597883	243370150	-6.6
TCX	10.872	10.815	10.915	80000060	75495700	-5.6
DCB	23.405	23.308	23.508	240909801	218823625	-9.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 10/15/2014 10/16/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 9.540 DCB: 20.704

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	PEME6	E6B3462F.D	10/15/2014	18:06	9.542	20.706
02	TOXAPH1E6	E6B3463F.D	10/15/2014	18:34	9.544	20.706
03	TOXAPH2E6	E6B3464F.D	10/15/2014	19:01	9.544	20.704
04	TOXAPH3E6	E6B3465F.D	10/15/2014	19:28	9.544	20.704
05	TOXAPH4E6	E6B3466F.D	10/15/2014	19:56	9.540	20.700
06	TOXAPH5E6	E6B3467F.D	10/15/2014	20:23	9.538	20.699
07	TC1E6	E6B3468F.D	10/15/2014	20:51	9.539	20.705
08	TC2E6	E6B3469F.D	10/15/2014	21:18	9.537	20.704
09	TC3E6	E6B3470F.D	10/15/2014	21:46	9.540	20.704
10	TC4E6	E6B3471F.D	10/15/2014	22:13	9.540	20.704
11	TC5E6	E6B3472F.D	10/15/2014	22:41	9.537	20.701
12	INDC1E6	E6B3473F.D	10/15/2014	23:08	9.541	20.706
13	INDC2E6	E6B3474F.D	10/15/2014	23:36	9.540	20.706
14	INDC3E6	E6B3475F.D	10/16/2014	0:03	9.540	20.703
15	INDC4E6	E6B3476F.D	10/16/2014	0:31	9.541	20.704
16	INDC5E6	E6B3477F.D	10/16/2014	0:58	9.540	20.703
17	INDC3EICV	E6B3478F.D	10/16/2014	1:26	9.539	20.704
18	PEMEH	E6B3571F.D	10/20/2014	15:25	9.541	20.713
19	INDC3EH	E6B3572F.D	10/20/2014	15:52	9.542	20.712
20	TOXAPH1EH	E6B3573F.D	10/20/2014	16:20	9.539	20.713
21	MW03-02S-NWG-092914	E6B3580F.D	10/20/2014	19:33	9.536	20.701
22	MW03-15I-NWG-092914	E6B3581F.D	10/20/2014	20:00	9.534	20.699
23	MW03-15I-NWG-092914MS	E6B3582F.D	10/20/2014	20:27	9.527	20.692
24	MW03-15I-NWG-092914MSD	E6B3583F.D	10/20/2014	20:55	9.525	20.692

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 10/15/2014 10/16/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 9.540 DCB: 20.704					
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
25	FD01-093014	E6B3585F.D	10/20/2014	21:50	9.524	20.690
26	MW03-17S-NWG-093014	E6B3586F.D	10/20/2014	22:17	9.524	20.691
27	PEMEI	E6B3588F.D	10/20/2014	23:12	9.522	20.691
28	INDC3EI	E6B3589F.D	10/20/2014	23:39	9.522	20.693
29	TOXAPH1EI	E6B3590F.D	10/21/2014	0:07	9.523	20.691
30	MB-79427	E6B3591F.D	10/21/2014	0:34	9.525	20.690
31	LCS-79427	E6B3592F.D	10/21/2014	1:01	9.522	20.691
32	LCSD-79427	E6B3593F.D	10/21/2014	1:29	9.524	20.691
33	RB01-100114	E6B3594F.D	10/21/2014	1:56	9.521	20.690
34	MW03-15S-NWG-100114	E6B3595F.D	10/21/2014	2:24	9.521	20.689
35	MW03-17I-NWG-100214	E6B3596F.D	10/21/2014	2:51	9.521	20.688
36	MW03-16S-NWG-100614	E6B3597F.D	10/21/2014	3:18	9.521	20.689
37	INDC3EJ	E6B3599F.D	10/21/2014	4:13	9.522	20.692
38	TOXAPH1EJ	E6B3600F.D	10/21/2014	4:41	9.523	20.694

	QC LIMITS
TCX = Tetrachloro-m-xylene	(± 0.05 MINUTES)
DCB = Decachlorobiphenyl	(± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 10/15/2014 10/16/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 10.866 DCB: 23.398					
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	PEME6	E6B3462R.D	10/15/2014	18:06	10.867	23.401
02	TOXAPH1E6	E6B3463R.D	10/15/2014	18:34	10.869	23.400
03	TOXAPH2E6	E6B3464R.D	10/15/2014	19:01	10.869	23.398
04	TOXAPH3E6	E6B3465R.D	10/15/2014	19:28	10.869	23.401
05	TOXAPH4E6	E6B3466R.D	10/15/2014	19:56	10.864	23.393
06	TOXAPH5E6	E6B3467R.D	10/15/2014	20:23	10.862	23.394
07	TC1E6	E6B3468R.D	10/15/2014	20:51	10.865	23.396
08	TC2E6	E6B3469R.D	10/15/2014	21:18	10.864	23.398
09	TC3E6	E6B3470R.D	10/15/2014	21:46	10.867	23.398
10	TC4E6	E6B3471R.D	10/15/2014	22:13	10.865	23.398
11	TC5E6	E6B3472R.D	10/15/2014	22:41	10.863	23.395
12	INDC1E6	E6B3473R.D	10/15/2014	23:08	10.867	23.399
13	INDC2E6	E6B3474R.D	10/15/2014	23:36	10.866	23.400
14	INDC3E6	E6B3475R.D	10/16/2014	0:03	10.866	23.398
15	INDC4E6	E6B3476R.D	10/16/2014	0:31	10.865	23.398
16	INDC5E6	E6B3477R.D	10/16/2014	0:58	10.866	23.397
17	INDC3EICV	E6B3478R.D	10/16/2014	1:26	10.865	23.398
18	PEMEH	E6B3571R.D	10/20/2014	15:25	10.868	23.408
19	INDC3EH	E6B3572R.D	10/20/2014	15:52	10.870	23.411
20	TOXAPH1EH	E6B3573R.D	10/20/2014	16:20	10.868	23.410
21	MW03-02S-NWG-092914	E6B3580R.D	10/20/2014	19:33	10.865	23.399
22	MW03-15I-NWG-092914	E6B3581R.D	10/20/2014	20:00	10.861	23.397
23	MW03-15I-NWG-092914MS	E6B3582R.D	10/20/2014	20:27	10.854	23.385
24	MW03-15I-NWG-092914MSD	E6B3583R.D	10/20/2014	20:55	10.853	23.386

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 10/15/2014 10/16/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 10.866 DCB: 23.398					
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
25	FD01-093014	E6B3585R.D	10/20/2014	21:50	10.850	23.383
26	MW03-17S-NWG-093014	E6B3586R.D	10/20/2014	22:17	10.852	23.385
27	PEMEI	E6B3588R.D	10/20/2014	23:12	10.850	23.384
28	INDC3EI	E6B3589R.D	10/20/2014	23:39	10.850	23.387
29	TOXAPH1EI	E6B3590R.D	10/21/2014	0:07	10.851	23.385
30	MB-79427	E6B3591R.D	10/21/2014	0:34	10.853	23.383
31	LCS-79427	E6B3592R.D	10/21/2014	1:01	10.850	23.384
32	LCSD-79427	E6B3593R.D	10/21/2014	1:29	10.852	23.385
33	RB01-100114	E6B3594R.D	10/21/2014	1:56	10.850	23.382
34	MW03-15S-NWG-100114	E6B3595R.D	10/21/2014	2:24	10.849	23.381
35	MW03-17I-NWG-100214	E6B3596R.D	10/21/2014	2:51	10.849	23.379
36	MW03-16S-NWG-100614	E6B3597R.D	10/21/2014	3:18	10.849	23.382
37	INDC3EJ	E6B3599R.D	10/21/2014	4:13	10.851	23.384
38	TOXAPH1EJ	E6B3600R.D	10/21/2014	4:41	10.851	23.388

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEME6 Date Analyzed: 10/15/2014

Lab Sample ID (PEM): PEME6 Time Analyzed: 18:06

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.911	10.859	10.959	0.009	0.010	-10.0
beta-BHC	11.886	11.836	11.936	0.008	0.010	-20.0
gamma-BHC (Lindane)	11.649	11.598	11.698	0.009	0.010	-10.0
Endrin	16.278	16.207	16.347	0.052	0.050	4.0
4,4´-DDT	16.939	16.870	17.010	0.098	0.100	-2.0
Methoxychlor	17.864	17.796	17.936	0.235	0.250	-6.0
TCX	9.542	9.490	9.590	0.017	0.020	-15.0
DCB	20.706	20.604	20.804	0.017	0.020	-15.0

4,4'-DDT %Breakdown (1): 6.3 Endrin %Breakdown (1): 3.5

Combined %Breakdown (1): 9.8

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEME6 Date Analyzed: 10/15/2014

Lab Sample ID (PEM): PEME6 Time Analyzed: 18:06

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.404	12.354	12.454	0.009	0.010	-10.0
beta-BHC	13.425	13.375	13.475	0.010	0.010	0.0
gamma-BHC (Lindane)	13.237	13.187	13.287	0.009	0.010	-10.0
Endrin	18.037	17.965	18.105	0.052	0.050	4.0
4,4´-DDT	18.784	18.713	18.853	0.100	0.100	0.0
Methoxychlor	20.053	19.983	20.123	0.255	0.250	2.0
TCX	10.867	10.816	10.916	0.018	0.020	-10.0
DCB	23.401	23.298	23.498	0.019	0.020	-5.0

4,4'-DDT %Breakdown (1): 9.8 Endrin %Breakdown (1): 8.7

Combined %Breakdown (1): 18.5

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEH Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEH Time Analyzed: 14:57

EPA Sample No. (PEM##): PEMEH Date Analyzed: 10/20/2014

Lab Sample ID (PEM): PEMEH Time Analyzed: 15:25

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.910	10.859	10.959	0.011	0.010	10.0
beta-BHC	11.891	11.836	11.936	0.009	0.010	-10.0
gamma-BHC (Lindane)	11.648	11.598	11.698	0.010	0.010	0.0
Endrin	16.283	16.207	16.347	0.055	0.050	10.0
4,4´-DDT	16.947	16.870	17.010	0.108	0.100	8.0
Methoxychlor	17.872	17.796	17.936	0.217	0.250	-13.2
TCX	9.541	9.490	9.590	0.021	0.020	5.0
DCB	20.713	20.604	20.804	0.019	0.020	-5.0

4,4'-DDT %Breakdown (1): 7.6 Endrin %Breakdown (1): 8.0

Combined %Breakdown (1): 15.6

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEH Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEH Time Analyzed: 14:57

EPA Sample No. (PEM##): PEMEH Date Analyzed: 10/20/2014

Lab Sample ID (PEM): PEMEH Time Analyzed: 15:25

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.405	12.354	12.454	0.009	0.010	-10.0
beta-BHC	13.432	13.375	13.475	0.008	0.010	-20.0
gamma-BHC (Lindane)	13.239	13.187	13.287	0.009	0.010	-10.0
Endrin	18.042	17.965	18.105	0.047	0.050	-6.0
4,4´-DDT	18.791	18.713	18.853	0.093	0.100	-7.0
Methoxychlor	20.058	19.983	20.123	0.198	0.250	-20.8
TCX	10.868	10.816	10.916	0.017	0.020	-15.0
DCB	23.408	23.298	23.498	0.018	0.020	-10.0

4,4'-DDT %Breakdown (1): 7.4 Endrin %Breakdown (1): 7.7

Combined %Breakdown (1): 15.1

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEI Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEI Time Analyzed: 22:45

EPA Sample No. (PEM##): PEMEI Date Analyzed: 10/20/2014

Lab Sample ID (PEM): PEMEI Time Analyzed: 23:12

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.892	10.859	10.959	0.011	0.010	10.0
beta-BHC	11.869	11.836	11.936	0.010	0.010	0.0
gamma-BHC (Lindane)	11.630	11.598	11.698	0.010	0.010	0.0
Endrin	16.263	16.207	16.347	0.056	0.050	12.0
4,4´-DDT	16.923	16.870	17.010	0.106	0.100	6.0
Methoxychlor	17.849	17.796	17.936	0.218	0.250	-12.8
TCX	9.522	9.490	9.590	0.021	0.020	5.0
DCB	20.691	20.604	20.804	0.018	0.020	-10.0

4,4'-DDT %Breakdown (1): 0.0 Endrin %Breakdown (1): 0.0

Combined %Breakdown (1): 0.0

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEI Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEI Time Analyzed: 22:45

EPA Sample No. (PEM##): PEMEI Date Analyzed: 10/20/2014

Lab Sample ID (PEM): PEMEI Time Analyzed: 23:12

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.389	12.354	12.454	0.011	0.010	10.0
beta-BHC	13.410	13.375	13.475	0.010	0.010	0.0
gamma-BHC (Lindane)	13.223	13.187	13.287	0.011	0.010	10.0
Endrin	18.024	17.965	18.105	0.051	0.050	2.0
4,4´-DDT	18.770	18.713	18.853	0.103	0.100	3.0
Methoxychlor	20.040	19.983	20.123	0.210	0.250	-16.0
TCX	10.850	10.816	10.916	0.021	0.020	5.0
DCB	23.384	23.298	23.498	0.017	0.020	-15.0

4,4'-DDT %Breakdown (1): 5.6 Endrin %Breakdown (1): 11.2

Combined %Breakdown (1): 16.8

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	83888200	87781000	99142300	100429625	102473013	8.8
beta-BHC	163873000	162100400	164311250	158164125	136431613	7.5
delta-BHC	131899200	155166400	187336750	199761775	218212325	19.5
gamma-BHC (Lindane)	275502200	281071400	308613150	309872800	318169225	6.4
Heptachlor	299020600	301224800	310602900	301643200	283559475	3.3
Aldrin	261319200	266453700	291521850	292688200	298053850	6.0
Heptachlor epoxide	283078800	270001100	285684350	277248200	271593188	2.5
Endosulfan I	86068200	83842500	88096400	85058950	83165000	2.3
Dieldrin	248515200	244995300	264348800	255467113	252312763	2.9
4,4´-DDE	198735800	202524550	225742875	224580275	226498206	6.4
Endrin	58634400	58906550	62187975	59130488	58170894	2.7
Endosulfan II	203015600	198642300	215970800	213995313	216345506	3.9
4,4´-DDD	142020400	165438100	175369850	181726338	174700531	9.3
Endosulfan sulfate	143263900	141386200	161200625	156291363	158629594	6.0
4,4´-DDT	146275400	152217250	175182200	181499125	180228694	9.9
Methoxychlor	90228000	86988190	89920675	83239650	73787308	8.0
Endrin ketone	68142600	65058800	70970175	66412263	66599069	3.3
Endrin aldehyde	49776900	47905900	51950350	50488513	54433588	4.8
alpha-Chlordane	297463600	269857800	282133100	272127900	268235525	4.4
gamma-Chlordane	86049000	82167700	88038200	85616775	86457213	2.5
TCX (A)	308216400	296919300	304842150	287715900	278596188	4.1
DCB (A)	272624600	247928250	250815025	226725838	203283244	10.9

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	272721600	285982900	316178000	323034525	339386425	8.9
beta-BHC	154378800	144124100	151091350	143507150	148726925	3.1
delta-BHC	137078800	132590200	161361150	172653975	213495250	19.9
gamma-BHC (Lindane)	274411400	273628500	303931500	297771500	309474588	5.8
Heptachlor	302728200	272027000	262370700	244835775	235623738	9.9
Aldrin	262744600	273191600	289750800	291829525	298774775	5.2
Heptachlor epoxide	256818200	259097900	266886850	264776100	267350950	1.8
Endosulfan I	70219200	69451500	74514900	72717125	74069925	3.1
Dieldrin	223730400	220467500	231992075	223065975	221697431	2.0
4,4´-DDE	244537000	236960050	251151300	244429675	243709894	2.1
Endrin	47770900	45846450	48116625	45115800	43902944	3.9
Endosulfan II	198127000	193223100	203782575	206332738	206776325	2.9
4,4´-DDD	141840200	126183150	135428900	129291925	128447094	4.8
Endosulfan sulfate	134696800	132896400	148629300	148245013	153323125	6.4
4,4´-DDT	126637400	129528000	142551525	149765575	150463094	8.0
Methoxychlor	60145560	59888420	59415580	55748350	52295911	5.9
Endrin ketone	56357800	55692250	58971275	56052038	56840094	2.3
Endrin aldehyde	42382600	41342300	43796475	42300013	45874813	4.1
alpha-Chlordane	269197000	254918400	270779950	259339650	260362288	2.6
gamma-Chlordane	297085000	276846100	283530500	277864100	277512788	3.0
TCX (A)	83895600	81189000	84280150	79302725	77726800	3.5
DCB (A)	274644300	259835850	252164975	238993200	228512081	7.2

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEA Date Analyzed: 10/16/2014

Lab Sample ID (PIBLK): PIBLKEA Time Analyzed: 1:53

EPA Sample No. (INDC3##): INDC3EICV Date Analyzed: 10/16/2014

Lab Sample ID (INDC3): INDC3EICV Time Analyzed: 1:26

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.908	10.859	10.959	94742828	102284350	8.0
beta-BHC	11.885	11.836	11.936	156976078	145106650	-7.6
delta-BHC	12.292	12.241	12.341	178475290	162119350	-9.2
gamma-BHC (Lindane)	11.647	11.598	11.698	298645755	311283050	4.2
Heptachlor	12.694	12.644	12.744	299210195	303674350	1.5
Aldrin	13.332	13.283	13.383	282007360	294855750	4.6
Heptachlor epoxide	14.579	14.510	14.650	277521128	293660950	5.8
Endosulfan I	15.357	15.287	15.427	85246210	91277200	7.1
Dieldrin	15.824	15.755	15.895	253127835	268032250	5.9
4,4´-DDE	15.268	15.197	15.337	215616341	231043525	7.2
Endrin	16.277	16.207	16.347	59406061	61637775	3.8
Endosulfan II	16.720	16.650	16.790	209593904	219529700	4.7
4,4´-DDD	16.419	16.348	16.488	167851044	165641400	-1.3
Endosulfan sulfate	18.304	18.234	18.374	152154336	158945900	4.5
4,4´-DDT	16.940	16.870	17.010	167080534	178918625	7.1
Methoxychlor	17.867	17.796	17.936	84832765	90212470	6.3
Endrin ketone	18.843	18.774	18.914	67436581	71206400	5.6
Endrin aldehyde	17.498	17.428	17.568	50911050	52618400	3.4
alpha-Chlordane	15.099	15.029	15.169	277963585	289748500	4.2
gamma-Chlordane	14.839	14.770	14.910	85665778	89665350	4.7
TCX	9.539	9.490	9.590	295257988	310603300	5.2
DCB	20.704	20.604	20.804	240275391	248403800	3.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEA Date Analyzed: 10/16/2014

Lab Sample ID (PIBLK): PIBLKEA Time Analyzed: 1:53

EPA Sample No. (INDC3##): INDC3EICV Date Analyzed: 10/16/2014

Lab Sample ID (INDC3): INDC3EICV Time Analyzed: 1:26

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.403	12.354	12.454	307460690	331556900	7.8
beta-BHC	13.424	13.375	13.475	148365665	187699400	26.5
delta-BHC	14.089	14.038	14.138	163435875	163732300	0.2
gamma-BHC (Lindane)	13.236	13.187	13.287	291843498	318579300	9.2
Heptachlor	14.220	14.171	14.271	263517083	292372000	10.9
Aldrin	14.924	14.875	14.975	283258260	302572450	6.8
Heptachlor epoxide	16.102	16.032	16.172	262986000	281823950	7.2
Endosulfan I	16.898	16.828	16.968	72194530	77503450	7.4
Dieldrin	17.433	17.364	17.504	224190676	246560825	10.0
4,4´-DDE	17.063	16.993	17.133	244157584	271145175	11.1
Endrin	18.035	17.965	18.105	46150544	47944400	3.9
Endosulfan II	18.442	18.372	18.512	201648348	226923950	12.5
4,4´-DDD	18.183	18.113	18.253	132238254	146018350	10.4
Endosulfan sulfate	19.608	19.538	19.678	143558128	159103100	10.8
4,4´-DDT	18.784	18.713	18.853	139789119	157042650	12.3
Methoxychlor	20.053	19.983	20.123	57498764	63158755	9.8
Endrin ketone	20.654	20.584	20.724	56782691	60541325	6.6
Endrin aldehyde	19.080	19.010	19.150	43139240	44753775	3.7
alpha-Chlordane	16.765	16.695	16.835	262919458	281076450	6.9
gamma-Chlordane	16.477	16.407	16.547	282567698	301629350	6.7
TCX	10.865	10.816	10.916	81278855	85597550	5.3
DCB	23.398	23.298	23.498	250830081	280335125	11.8

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

no (+)

no samples

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEH Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEH Time Analyzed: 14:57

EPA Sample No. (INDC3##): INDC3EH Date Analyzed: 10/20/2014

Lab Sample ID (INDC3): INDC3EH Time Analyzed: 15:52

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.912	10.859	10.959	94742828	98611700	4.1
beta-BHC	11.892	11.836	11.936	156976078	134233050	-14.5
delta-BHC	12.300	12.241	12.341	178475290	153429750	-14.0
gamma-BHC (Lindane)	11.650	11.598	11.698	298645755	300076350	0.5
Heptachlor	12.698	12.644	12.744	299210195	279480750	-6.6
Aldrin	13.338	13.283	13.383	282007360	297405650	5.5
Heptachlor epoxide	14.587	14.510	14.650	277521128	275080100	-0.9
Endosulfan I	15.363	15.287	15.427	85246210	90934000	6.7
Dieldrin	15.832	15.755	15.895	253127835	250504325	-1.0
4,4´-DDE	15.279	15.197	15.337	215616341	205962350	-4.5
Endrin	16.283	16.207	16.347	59406061	61656875	3.8
Endosulfan II	16.729	16.650	16.790	209593904	216800700	3.4
4,4´-DDD	16.428	16.348	16.488	167851044	140377100	-16.4
Endosulfan sulfate	18.311	18.234	18.374	152154336	139513025	-8.3
4,4´-DDT	16.948	16.870	17.010	167080534	161405425	-3.4
Methoxychlor	17.874	17.796	17.936	84832765	69642970	-17.9
Endrin ketone	18.851	18.774	18.914	67436581	63758025	-5.5
Endrin aldehyde	17.504	17.428	17.568	50911050	48189025	-5.3
alpha-Chlordane	15.105	15.029	15.169	277963585	273451850	-1.6
gamma-Chlordane	14.846	14.770	14.910	85665778	85198150	-0.5
TCX	9.542	9.490	9.590	295257988	313769200	6.3
DCB	20.712	20.604	20.804	240275391	229744325	-4.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEH Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEH Time Analyzed: 14:57

EPA Sample No. (INDC3##): INDC3EH Date Analyzed: 10/20/2014

Lab Sample ID (INDC3): INDC3EH Time Analyzed: 15:52

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.407	12.354	12.454	307460690	293300150	-4.6
beta-BHC	13.432	13.375	13.475	148365665	149011850	0.4
delta-BHC	14.097	14.038	14.138	163435875	122595300	-25.0
gamma-BHC (Lindane)	13.241	13.187	13.287	291843498	266734700	-8.6
Heptachlor	14.225	14.171	14.271	263517083	255841550	-2.9
Aldrin	14.930	14.875	14.975	283258260	300187250	6.0
Heptachlor epoxide	16.107	16.032	16.172	262986000	260794500	-0.8
Endosulfan I	16.905	16.828	16.968	72194530	69072150	-4.3
Dieldrin	17.438	17.364	17.504	224190676	197670725	-11.8
4,4´-DDE	17.073	16.993	17.133	244157584	214441300	-12.2
Endrin	18.041	17.965	18.105	46150544	42037375	-8.9
Endosulfan II	18.451	18.372	18.512	201648348	211585750	4.9
4,4´-DDD	18.192	18.113	18.253	132238254	110252700	-16.6
Endosulfan sulfate	19.616	19.538	19.678	143558128	130352150	-9.2
4,4´-DDT	18.791	18.713	18.853	139789119	125863725	-10.0
Methoxychlor	20.059	19.983	20.123	57498764	46391495	-19.3
Endrin ketone	20.661	20.584	20.724	56782691	46157300	-18.7
Endrin aldehyde	19.086	19.010	19.150	43139240	35272400	-18.2
alpha-Chlordane	16.772	16.695	16.835	262919458	263612650	0.3
gamma-Chlordane	16.483	16.407	16.547	282567698	284541650	0.7
TCX	10.870	10.816	10.916	81278855	70427250	-13.4
DCB	23.411	23.298	23.498	250830081	252284525	0.6

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

no (4)

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEI Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEI Time Analyzed: 22:45

EPA Sample No. (INDC3##): INDC3EI Date Analyzed: 10/20/2014

Lab Sample ID (INDC3): INDC3EI Time Analyzed: 23:39

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.892	10.859	10.959	94742828	107765050	13.7
beta-BHC	11.868	11.836	11.936	156976078	156257100	-0.5
delta-BHC	12.273	12.241	12.341	178475290	200930600	12.6
gamma-BHC (Lindane)	11.631	11.598	11.698	298645755	324725100	8.7
Heptachlor	12.678	12.644	12.744	299210195	296241850	-1.0
Aldrin	13.318	13.283	13.383	282007360	303629600	7.7
Heptachlor epoxide	14.567	14.510	14.650	277521128	279010350	0.5
Endosulfan I	15.343	15.287	15.427	85246210	88381750	3.7
Dieldrin	15.812	15.755	15.895	253127835	254226275	0.4
4,4´-DDE	15.249	15.197	15.337	215616341	220742675	2.4
Endrin	16.263	16.207	16.347	59406061	63042075	6.1
Endosulfan II	16.708	16.650	16.790	209593904	213489650	1.9
4,4´-DDD	16.399	16.348	16.488	167851044	153028350	-8.8
Endosulfan sulfate	18.292	18.234	18.374	152154336	155508025	2.2
4,4´-DDT	16.923	16.870	17.010	167080534	166205300	-0.5
Methoxychlor	17.849	17.796	17.936	84832765	71989445	-15.1
Endrin ketone	18.831	18.774	18.914	67436581	68282725	1.3
Endrin aldehyde	17.485	17.428	17.568	50911050	51800600	1.7
alpha-Chlordane	15.084	15.029	15.169	277963585	278457500	0.2
gamma-Chlordane	14.825	14.770	14.910	85665778	91036850	6.3
TCX	9.522	9.490	9.590	295257988	328771150	11.4
DCB	20.693	20.604	20.804	240275391	209814775	-12.7

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEI Date Analyzed: 10/20/2014

Lab Sample ID (PIBLK): PIBLKEI Time Analyzed: 22:45

EPA Sample No. (INDC3##): INDC3EI Date Analyzed: 10/20/2014

Lab Sample ID (INDC3): INDC3EI Time Analyzed: 23:39

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.390	12.354	12.454	307460690	347366350	13.0
beta-BHC	13.411	13.375	13.475	148365665	176942050	19.3
delta-BHC	14.074	14.038	14.138	163435875	191637300	17.3
gamma-BHC (Lindane)	13.223	13.187	13.287	291843498	323740900	10.9
Heptachlor	14.207	14.171	14.271	263517083	266260700	1.0
Aldrin	14.912	14.875	14.975	283258260	307396750	8.5
Heptachlor epoxide	16.090	16.032	16.172	262986000	273635700	4.0
Endosulfan I	16.887	16.828	16.968	72194530	76123950	5.4
Dieldrin	17.422	17.364	17.504	224190676	222221475	-0.9
4,4´-DDE	17.050	16.993	17.133	244157584	252146200	3.3
Endrin	18.024	17.965	18.105	46150544	46016775	-0.3
Endosulfan II	18.433	18.372	18.512	201648348	215609125	6.9
4,4´-DDD	18.169	18.113	18.253	132238254	124583075	-5.8
Endosulfan sulfate	19.598	19.538	19.678	143558128	143484175	-0.1
4,4´-DDT	18.771	18.713	18.853	139789119	139978000	0.1
Methoxychlor	20.042	19.983	20.123	57498764	49298705	-14.3
Endrin ketone	20.644	20.584	20.724	56782691	53637375	-5.5
Endrin aldehyde	19.068	19.010	19.150	43139240	40482075	-6.2
alpha-Chlordane	16.754	16.695	16.835	262919458	271798650	3.4
gamma-Chlordane	16.465	16.407	16.547	282567698	291801900	3.3
TCX	10.850	10.816	10.916	81278855	88089350	8.4
DCB	23.387	23.298	23.498	250830081	217617900	-13.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEJ Date Analyzed: 10/21/2014

Lab Sample ID (PIBLK): PIBLKEJ Time Analyzed: 3:46

EPA Sample No. (INDC3##): INDC3EJ Date Analyzed: 10/21/2014

Lab Sample ID (INDC3): INDC3EJ Time Analyzed: 4:13

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.892	10.859	10.959	94742828	111892700	18.1
beta-BHC	11.868	11.836	11.936	156976078	165236500	5.3
delta-BHC	12.273	12.241	12.341	178475290	203326400	13.9
gamma-BHC (Lindane)	11.631	11.598	11.698	298645755	338202200	13.2
Heptachlor	12.678	12.644	12.744	299210195	310798850	3.9
Aldrin	13.317	13.283	13.383	282007360	318550600	13.0
Heptachlor epoxide	14.567	14.510	14.650	277521128	298090750	7.4
Endosulfan I	15.344	15.287	15.427	85246210	95884900	12.5
Dieldrin	15.812	15.755	15.895	253127835	274266550	8.4
4,4´-DDE	15.250	15.197	15.337	215616341	239488300	11.1
Endrin	16.264	16.207	16.347	59406061	67710550	14.0
Endosulfan II	16.709	16.650	16.790	209593904	231834700	10.6
4,4´-DDD	16.401	16.348	16.488	167851044	167306575	-0.3
Endosulfan sulfate	18.292	18.234	18.374	152154336	171930800	13.0
4,4´-DDT	16.924	16.870	17.010	167080534	183062525	9.6
Methoxychlor	17.850	17.796	17.936	84832765	79693415	-6.1
Endrin ketone	18.831	18.774	18.914	67436581	75280075	11.6
Endrin aldehyde	17.484	17.428	17.568	50911050	55816200	9.6
alpha-Chlordane	15.084	15.029	15.169	277963585	297922250	7.2
gamma-Chlordane	14.825	14.770	14.910	85665778	97004100	13.2
TCX	9.522	9.490	9.590	295257988	339513250	15.0
DCB	20.692	20.604	20.804	240275391	238858325	-0.6

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/15/2014 10/16/2014

EPA Sample No. (PIBLK##): PIBLKEJ Date Analyzed: 10/21/2014

Lab Sample ID (PIBLK): PIBLKEJ Time Analyzed: 3:46

EPA Sample No. (INDC3##): INDC3EJ Date Analyzed: 10/21/2014

Lab Sample ID (INDC3): INDC3EJ Time Analyzed: 4:13

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.389	12.354	12.454	307460690	354902300	15.4
beta-BHC	13.410	13.375	13.475	148365665	168993850	13.9
delta-BHC	14.073	14.038	14.138	163435875	191076950	16.9
gamma-BHC (Lindane)	13.222	13.187	13.287	291843498	336446600	15.3
Heptachlor	14.206	14.171	14.271	263517083	271674250	3.1
Aldrin	14.912	14.875	14.975	283258260	322996300	14.0
Heptachlor epoxide	16.091	16.032	16.172	262986000	295000750	12.2
Endosulfan I	16.887	16.828	16.968	72194530	81542250	12.9
Dieldrin	17.422	17.364	17.504	224190676	242017200	8.0
4,4´-DDE	17.052	16.993	17.133	244157584	274209175	12.3
Endrin	18.024	17.965	18.105	46150544	49037350	6.3
Endosulfan II	18.432	18.372	18.512	201648348	233936100	16.0
4,4´-DDD	18.169	18.113	18.253	132238254	135308425	2.3
Endosulfan sulfate	19.597	19.538	19.678	143558128	156068775	8.7
4,4´-DDT	18.771	18.713	18.853	139789119	157514950	12.7
Methoxychlor	20.042	19.983	20.123	57498764	52804285	-8.2
Endrin ketone	20.643	20.584	20.724	56782691	59056850	4.0
Endrin aldehyde	19.069	19.010	19.150	43139240	43087900	-0.1
alpha-Chlordane	16.754	16.695	16.835	262919458	292726950	11.3
gamma-Chlordane	16.465	16.407	16.547	282567698	317075200	12.2
TCX	10.851	10.816	10.916	81278855	89868050	10.6
DCB	23.384	23.298	23.498	250830081	242912875	-3.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 8082A, PCB by GC-ECD

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8082A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: E2
Instrument Type: GC-ECD
Description: HP5890 II +
Manufacturer: Hewlett-Packard

Model: 5890
GC Column used: 30 m X 0.53 mm ID [0.50 um thickness] CLPPest capillary column.
GC Column used: 30 m X 0.53 mm ID [0.42 um thickness] CLPPestII capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits with the following exceptions. Please note that the acceptance criteria allow one surrogate recovery outside of the QC limits per fraction.

RB01-100114 (N1822-14C), recovery is below criteria for Decachlorobiphenyl on front column at 36% with criteria of (40-135).

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW03-15I-NWG-092914 (N1822-04BMS) and MW03-15I-NWG-092914 (N1822-04BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

No sample in this SDG required analysis at dilution.

F. Samples:

The lower concentration between the primary and confirmatory GC column concentrations is reported due to the presence of interferences unless otherwise indicated. P flags are assigned to compounds when D% between the two columns are greater than 40%.

No other unusual occurrences were noted during sample analysis.

G. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

The following samples were manually integrated:

AR12423JV Decachlorobiphenyl on front column due to M3

AR12423JW Decachlorobiphenyl on front column due to M3

AR12426J2 Aroclor-1242 on front column due to M3

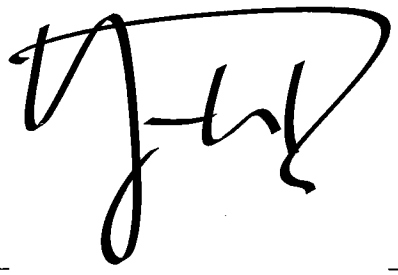
AR12482J2 Aroclor-1248 on front column due to M3

AR16603JV Decachlorobiphenyl on front column due to M3

AR16603JW Decachlorobiphenyl on front column , Decachlorobiphenyl on rear column due to M3

LCS-79428 Decachlorobiphenyl on front column due to M3

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____  _____

Date:_____10/30/2014_____

2Q - FORM II ARO-1

WATER AROCLOR SURROGATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	MB-79314	95	110	102	102			0
02	LCS-79314	97	112	80	103			0
03	MW03-02S-NWG-092914	100	113	92	95			0
04	MW03-15I-NWG-092914	96	111	92	95			0
05	MW03-15I-NWG-092914	93	109	94	96			0
06	MW03-15I-NWG-092914	100	117	97	104			0
07	FD01-093014	94	112	97	100			0
08	MW03-17S-NWG-093014	93	111	98	102			0
09	MB-79428	97	115	106	106			0
10	LCSD-79428	96	113	110	103			0
11	LCS-79428	99	117	114	107			0
12	RB01-100114	64	73	36 *	41			1
13	MW03-15S-NWG-100114	70	80	54	56			0
14	MW03-17I-NWG-100214	68	78	67	51			0
15	MW03-16S-NWG-100614	78	91	56	58			0

	QC LIMITS
TCX = Tetrachloro-m-xylene	(34-137)
DCB = Decachlorobiphenyl	(40-135)

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

som14.10.02.1616

SW846

4F - FORM IV ARO

AROCLOR METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79314

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: E2N3097F.D / E2N3097R.D Lab Sample ID: MB-79314

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 10/01/2014

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

Acid Cleanup: (Y/N Y

Date Analyzed (1): 10/14/2014 Date Analyzed (2): 10/14/2014

Time Analyzed (1): 11:39 Time Analyzed (2): 11:39

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-79314	LCS-79314	10/14/2014	10/14/2014
02	MW03-02S-NWG-092914	N1822-02B	10/20/2014	10/20/2014
03	MW03-15I-NWG-092914	N1822-04B	10/20/2014	10/20/2014
04	MW03-15I-NWG-092914	N1822-04BMS	10/20/2014	10/20/2014
05	MW03-15I-NWG-092914	N1822-04BMSD	10/20/2014	10/20/2014
06	FD01-093014	N1822-09B	10/20/2014	10/20/2014
07	MW03-17S-NWG-093014	N1822-11B	10/20/2014	10/20/2014

COMMENTS:

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79314

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79314

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3097F.D/E2N3097R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 10/01/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/14/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

3N - FORM III ARO-3

WATER AROCLOR LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79314

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79314 LCS Lot No.: a094177

Date Extracted: 10/01/2014 Date Analyzed (1): 10/14/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	4.3652	109		25-145
Aroclor-1260	4.0000	4.3361	108		30-145

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 10/14/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	4.5745	114		25-145
Aroclor-1260	4.0000	4.4760	112		30-145

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

3J - FORM III ARO-1

WATER AROCLOR MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

Instrument ID: E2 GC Column : CLPPest ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
AR1016	4.0000	0.0000	4.1482	104		25-145
AR1260	4.0000	0.0000	3.8868	97		30-145

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
AR1016	4.0000	4.8882	122		16		0-30	25-145
AR1260	4.0000	4.0989	102		5		0-30	30-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

3J - FORM III ARO-1

WATER AROCLOR MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix Spike - EPA Sample No.: MW03-15I-NWG-092914

Instrument ID: E2 GC Column : CLPPestII ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
AR1016	4.0000	0.0000	4.4750	112		25-145
AR1260	4.0000	0.0000	4.1305	103		30-145

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
AR1016	4.0000	4.8901	122		9		0-30	25-145
AR1260	4.0000	4.4486	111		7		0-30	30-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

4F - FORM IV ARO

AROCLOR METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79428

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab File ID: E2N3496F.D / E2N3496R.D Lab Sample ID: MB-79428

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 10/08/2014

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

Acid Cleanup: (Y/N Y

Date Analyzed (1): 10/28/2014 Date Analyzed (2): 10/28/2014

Time Analyzed (1): 16:09 Time Analyzed (2): 16:09

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCSD-79428	LCSD-79428	10/28/2014	10/28/2014
02	LCS-79428	LCS-79428	10/28/2014	10/28/2014
03	RB01-100114	N1822-14C	10/28/2014	10/28/2014
04	MW03-15S-NWG-100114	N1822-18C	10/28/2014	10/28/2014
05	MW03-17I-NWG-100214	N1822-25C	10/28/2014	10/28/2014
06	MW03-16S-NWG-100614	N1822-37B	10/28/2014	10/28/2014

COMMENTS:

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79428

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79428

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N3496F.D/E2N3496R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 10/08/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/28/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

3N - FORM III ARO-3
WATER AROCLOR LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79428

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCS-79428 LCS Lot No.: a094177

Date Extracted: 10/08/2014 Date Analyzed (1): 10/28/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	3.6161	90		25-145
Aroclor-1260	4.0000	3.6146	90		30-145

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 10/28/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	4.2760	107		25-145
Aroclor-1260	4.0000	4.2729	107		30-145

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

3N - FORM III ARO-3
WATER AROCLOR LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79428

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Lab Sample ID: LCSD-79428 LCS Lot No.: a094177

Date Extracted: 10/08/2014 Date Analyzed (1): 10/28/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
Aroclor-1016	4.0000	3.7239	93		25-145	3.0		30
Aroclor-1260	4.0000	3.5616	89		30-145	1.0		30

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 10/28/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
Aroclor-1016	4.0000	4.2894	107		25-145	0		30
Aroclor-1260	4.0000	4.1591	104		30-145	3.0		30

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

RPD: 0 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 09/30/2014 10/01/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.075 DCB: 9.372

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
28	AR16605J2	E2N2844F.D	10/1/2014	0:19	3.075	9.372
29	AR16603JICV	E2N2850F.D	10/1/2014	1:47	3.075	9.372
30	AR16603JX	E2N3093F.D	10/14/2014	10:40	3.078	9.367
31	MB-79314	E2N3097F.D	10/14/2014	11:39	3.079	9.366
32	LCS-79314	E2N3098F.D	10/14/2014	11:53	3.078	9.366
33	AR16603JY	E2N3106F.D	10/14/2014	14:15	3.077	9.367
34	AR16603JB	E2N3141F.D	10/20/2014	9:33	3.075	9.368
35	MW03-02S-NWG-092914	E2N3153F.D	10/20/2014	16:49	3.077	9.368
36	MW03-15I-NWG-092914	E2N3154F.D	10/20/2014	17:03	3.077	9.368
37	MW03-15I-NWG-092914	E2N3155F.D	10/20/2014	17:18	3.076	9.368
38	MW03-15I-NWG-092914	E2N3156F.D	10/20/2014	17:33	3.075	9.368
39	FD01-093014	E2N3158F.D	10/20/2014	18:02	3.076	9.367
40	MW03-17S-NWG-093014	E2N3159F.D	10/20/2014	18:17	3.076	9.368
41	AR16603JC	E2N3161F.D	10/20/2014	18:47	3.075	9.368
42	AR16603JU	E2N3476F.D	10/28/2014	11:26	3.074	9.371
43	MB-79428	E2N3496F.D	10/28/2014	16:09	3.071	9.367
44	LCSD-79428	E2N3498F.D	10/28/2014	17:18	3.069	9.369
45	LCS-79428	E2N3499F.D	10/28/2014	17:33	3.071	9.370
46	RB01-100114	E2N3500F.D	10/28/2014	17:47	3.071	9.365
47	MW03-15S-NWG-100114	E2N3501F.D	10/28/2014	18:02	3.071	9.365
48	MW03-17I-NWG-100214	E2N3502F.D	10/28/2014	18:17	3.071	9.366
49	MW03-16S-NWG-100614	E2N3503F.D	10/28/2014	18:31	3.071	9.364

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 09/30/2014 10/01/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 3.075 DCB: 9.372					
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
50	AR16603JV	E2N3505F.D	10/28/2014	19:01	3.070	9.370

	QC LIMITS
TCX = Tetrachloro-m-xylene	(± 0.05 MINUTES)
DCB = Decachlorobiphenyl	(± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 09/30/2014 10/01/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.791 DCB: 10.404

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR12213J2	E2N2817R.D	9/30/2014	17:43	3.791	10.404
02	AR12323J2	E2N2818R.D	9/30/2014	17:58	3.792	10.404
03	AR12421J2	E2N2819R.D	9/30/2014	18:12	3.793	10.406
04	AR12426J2	E2N2820R.D	9/30/2014	18:27	3.792	10.405
05	AR12422J2	E2N2821R.D	9/30/2014	18:41	3.791	10.406
06	AR12423J2	E2N2822R.D	9/30/2014	18:56	3.791	10.404
07	AR12424J2	E2N2823R.D	9/30/2014	19:11	3.791	10.405
08	AR12425J2	E2N2824R.D	9/30/2014	19:25	3.791	10.404
09	AR12481J2	E2N2825R.D	9/30/2014	19:40	3.792	10.406
10	AR12486J2	E2N2826R.D	9/30/2014	19:55	3.792	10.407
11	AR12482J2	E2N2827R.D	9/30/2014	20:10	3.791	10.405
12	AR12483J2	E2N2828R.D	9/30/2014	20:24	3.791	10.404
13	AR12484J2	E2N2829R.D	9/30/2014	20:39	3.791	10.405
14	AR12485J2	E2N2830R.D	9/30/2014	20:54	3.791	10.404
15	AR12541J2	E2N2831R.D	9/30/2014	21:08	3.792	10.405
16	AR12546J2	E2N2832R.D	9/30/2014	21:23	3.792	10.406
17	AR12542J2	E2N2833R.D	9/30/2014	21:38	3.791	10.405
18	AR12543J2	E2N2834R.D	9/30/2014	21:52	3.791	10.405
19	AR12544J2	E2N2835R.D	9/30/2014	22:07	3.791	10.404
20	AR12545J2	E2N2836R.D	9/30/2014	22:22	3.791	10.403
21	AR12623J2	E2N2837R.D	9/30/2014	22:36	3.791	10.404
22	AR12683J2	E2N2838R.D	9/30/2014	22:51	3.792	10.404
23	AR16601J2	E2N2839R.D	9/30/2014	23:06	3.791	10.405
24	AR16606J2	E2N2840R.D	9/30/2014	23:20	3.791	10.404
25	AR16602J2	E2N2841R.D	9/30/2014	23:35	3.792	10.405
26	AR16603J2	E2N2842R.D	9/30/2014	23:50	3.791	10.404
27	AR16604J2	E2N2843R.D	10/1/2014	0:04	3.792	10.404

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 09/30/2014 10/01/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 3.791 DCB: 10.404					
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
28	AR16605J2	E2N2844R.D	10/1/2014	0:19	3.791	10.403
29	AR16603JICV	E2N2850R.D	10/1/2014	1:47	3.791	10.404
30	AR16603JX	E2N3093R.D	10/14/2014	10:40	3.788	10.393
31	MB-79314	E2N3097R.D	10/14/2014	11:39	3.788	10.393
32	LCS-79314	E2N3098R.D	10/14/2014	11:53	3.787	10.393
33	AR16603JY	E2N3106R.D	10/14/2014	14:15	3.788	10.393
34	AR16603JB	E2N3141R.D	10/20/2014	9:33	3.787	10.395
35	MW03-02S-NWG-092914	E2N3153R.D	10/20/2014	16:49	3.784	10.394
36	MW03-15I-NWG-092914	E2N3154R.D	10/20/2014	17:03	3.785	10.395
37	MW03-15I-NWG-092914	E2N3155R.D	10/20/2014	17:18	3.785	10.395
38	MW03-15I-NWG-092914	E2N3156R.D	10/20/2014	17:33	3.784	10.395
39	FD01-093014	E2N3158R.D	10/20/2014	18:02	3.785	10.394
40	MW03-17S-NWG-093014	E2N3159R.D	10/20/2014	18:17	3.785	10.394
41	AR16603JC	E2N3161R.D	10/20/2014	18:47	3.785	10.395
42	AR16603JU	E2N3476R.D	10/28/2014	11:26	3.782	10.394
43	MB-79428	E2N3496R.D	10/28/2014	16:09	3.781	10.392
44	LCSD-79428	E2N3498R.D	10/28/2014	17:18	3.782	10.393
45	LCS-79428	E2N3499R.D	10/28/2014	17:33	3.782	10.392
46	RB01-100114	E2N3500R.D	10/28/2014	17:47	3.781	10.391
47	MW03-15S-NWG-100114	E2N3501R.D	10/28/2014	18:02	3.780	10.390
48	MW03-17I-NWG-100214	E2N3502R.D	10/28/2014	18:17	3.781	10.391
49	MW03-16S-NWG-100614	E2N3503R.D	10/28/2014	18:31	3.781	10.389

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 09/30/2014 10/01/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 3.791 DCB: 10.404					
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
50	AR16603JV	E2N3505R.D	10/28/2014	19:01	3.779	10.393

	QC LIMITS
TCX = Tetrachloro-m-xylene	(± 0.05 MINUTES)
DCB = Decachlorobiphenyl	(± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

6P - FORM VI ARO-2

AROCLOR INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E2 Date(s) Analyzed: 09/30/2014 10/01/2014

GC Column: CLPPest ID: 0.53 (mm)

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9 16.0

COMPOUND	PEAK [1]	CALIBRATION FACTORS (CFs)									% RSD
		CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	
AR1016	1	19140	17935	19238	15991	15389	20440				11.0
	2	27680	26095	28070	24243	23517	30180				9.4
	3	10400	10165	10955	9330	9068	6840				15.4
AR1260	1	32130	30195	29928	24954	23888	35740				15.1
	2	36350	34865	37108	31589	30361	40300				10.5
	3	28020	27050	28703	24488	23499	30840				10.1
AR1242	1	10810	10615	12095	9838	9397	11280				9.1
	2	6950	6675	7618	6325	6308	7580				8.5
	3	5950	5810	6425	5676	5706	5740				4.8
AR1248	1	4530	4135	4003	4359	3980	4420				5.4
	2	19390	18925	17373	16234	14500	20900				13.0
	3	7920	8555	8395	7546	6676	8520				9.2
AR1254	1	13660	13540	14158	12774	11972	14300				6.6
	2	28120	27550	28760	25000	22729	29840				9.8
	3	20270	19815	23228	20268	18544	22280				8.3
DCB (A)	1	13849800	13488600	14537600	12420500	10536800					12.0
TCX (A)	e	624400	620100	669350	563650	561538					7.5

[1] At least three peaks for each column are required for identification of Aroclors.

6P - FORM VI ARO-2

AROCLOR INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E2 Date(s) Analyzed: 09/30/2014 10/01/2014

GC Column: CLPPestII ID: 0.53 (mm)

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9 16.0

COMPOUND	PEAK [1]	CALIBRATION FACTORS (CFs)									
		CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	% RSD
AR1016	1	7170	7045	7720	6815	6954	7280				4.4
	2	12590	11975	13188	11469	11316	13220				6.8
	3	6540	6230	6633	6344	6210	7220				5.8
AR1260	1	25800	23970	25773	22165	21623	27060				8.9
	2	31820	30920	34300	29655	29300	32980				6.1
	3	23440	22370	24243	21153	20884	25000				7.3
AR1242	1	19520	19515	23735	19890	19701	20040				8.1
	2	6680	7000	9178	7183	6628	9600				17.1
	3	7000	7725	10360	8100	7669	8840				14.3
AR1248	1	11650	11130	13695	12865	11841	12100				7.6
	2	16540	15745	17443	16474	15079	16800				5.1
	3	9380	8305	10340	9746	9094	12500				14.6
AR1254	1	15050	15720	16830	16036	15233	16400				4.3
	2	26370	26990	29220	26735	24786	27920				5.5
	3	18520	20395	22485	21094	19884	20140				6.5
DCB (A)	1	391600	381450	398775	338913	326838					8.8
TCX (A)	e	369600	381900	439400	391200	416525					7.0

[1] At least three peaks for each column are required for identification of Aroclors.

6Q - FORM VI ARO-3

AROCLOR INITIAL CALIBRATION (SINGLE POINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E2 Date(s) Analyzed: 09/30/2014 09/30/2014

GC Column: CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT (ng)	PEAK [1]	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	0.4	1	2.92	2.85	2.99	1700
		2	3.48	3.41	3.55	4455
		3	4.11	4.04	4.18	1190
		4				
		5				
Aroclor-1232	0.4	1	3.30	3.23	3.37	4570
		2	4.03	3.96	4.10	8230
		3	4.32	4.25	4.39	3943
		4				
		5				

[1] At least three peaks for each column are required for identification of multicomponent analytes.

6Q - FORM VI ARO-3

AROCLOR INITIAL CALIBRATION (SINGLE POINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

Instrument ID: E2 Date(s) Analyzed: 09/30/2014 09/30/2014

GC Column: CLPPestII ID: 0.53 (mm)

COMPOUND	AMOUNT (ng)	PEAK [1]	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1221	0.4	1	3.66	3.59	3.73	1263
		2	4.49	4.42	4.56	2948
		3	5.30	5.23	5.37	1215
		4				
		5				
Aroclor-1232	0.4	1	3.99	3.92	4.06	803
		2	4.26	4.19	4.33	2928
		3	4.50	4.43	4.57	2225
		4				
		5				

[1] At least three peaks for each column are required for identification of multicomponent analytes.

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JICV Date Analyzed: 10/01/2014

Lab Sample ID: AR16603JICV Time Analyzed: 1:47

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.027	3.957	4.097	18022.1875	18355	1.8
	2	4.721	4.651	4.791	26630.72917	26752.5	0.5
	3	5.280	5.209	5.349	9459.583333	10250	8.4
AR1260	1	7.153	7.082	7.222	29472.39583	28857.5	-2.1
	2	7.701	7.631	7.771	35095.41667	35557.5	1.3
	3	8.027	7.956	8.096	27099.79167	27797.5	2.6
TCX		3.075	3.025	3.125	607807.5	629500	3.6
DCB		9.372	9.272	9.472	12966660	13648850	5.3

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JICV Date Analyzed: 10/01/2014

Lab Sample ID: AR16603JICV Time Analyzed: 1:47

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.597	4.527	4.667	7164.0625	7415	3.5
	2	5.314	5.245	5.385	12292.8125	12640	2.8
	3	5.726	5.656	5.796	6529.375	6360	-2.6
AR1260	1	8.111	8.042	8.182	24398.4375	24857.5	1.9
	2	8.587	8.517	8.657	31495.83333	32752.5	4.0
	3	8.900	8.831	8.971	22848.125	23185	1.5
TCX		3.791	3.741	3.841	399725	415100	3.8
DCB		10.404	10.304	10.504	367515	383750	4.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 09/30/2014 10/01/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.075 DCB: 9.372

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR12213J2	E2N2817F.D	9/30/2014	17:43	3.073	9.370
02	AR12323J2	E2N2818F.D	9/30/2014	17:58	3.075	9.371
03	AR12421J2	E2N2819F.D	9/30/2014	18:12	3.074	9.372
04	AR12426J2	E2N2820F.D	9/30/2014	18:27	3.074	9.372
05	AR12422J2	E2N2821F.D	9/30/2014	18:41	3.074	9.372
06	AR12423J2	E2N2822F.D	9/30/2014	18:56	3.074	9.371
07	AR12424J2	E2N2823F.D	9/30/2014	19:11	3.074	9.371
08	AR12425J2	E2N2824F.D	9/30/2014	19:25	3.073	9.370
09	AR12481J2	E2N2825F.D	9/30/2014	19:40	3.074	9.372
10	AR12486J2	E2N2826F.D	9/30/2014	19:55	3.073	9.371
11	AR12482J2	E2N2827F.D	9/30/2014	20:10	3.075	9.372
12	AR12483J2	E2N2828F.D	9/30/2014	20:24	3.074	9.371
13	AR12484J2	E2N2829F.D	9/30/2014	20:39	3.075	9.372
14	AR12485J2	E2N2830F.D	9/30/2014	20:54	3.075	9.371
15	AR12541J2	E2N2831F.D	9/30/2014	21:08	3.074	9.372
16	AR12546J2	E2N2832F.D	9/30/2014	21:23	3.075	9.373
17	AR12542J2	E2N2833F.D	9/30/2014	21:38	3.074	9.372
18	AR12543J2	E2N2834F.D	9/30/2014	21:52	3.075	9.372
19	AR12544J2	E2N2835F.D	9/30/2014	22:07	3.074	9.372
20	AR12545J2	E2N2836F.D	9/30/2014	22:22	3.074	9.371
21	AR12623J2	E2N2837F.D	9/30/2014	22:36	3.074	9.372
22	AR12683J2	E2N2838F.D	9/30/2014	22:51	3.075	9.371
23	AR16601J2	E2N2839F.D	9/30/2014	23:06	3.075	9.372
24	AR16606J2	E2N2840F.D	9/30/2014	23:20	3.074	9.372
25	AR16602J2	E2N2841F.D	9/30/2014	23:35	3.075	9.372
26	AR16603J2	E2N2842F.D	9/30/2014	23:50	3.074	9.372
27	AR16604J2	E2N2843F.D	10/1/2014	0:04	3.076	9.372

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JX Date Analyzed: 10/14/2014

Lab Sample ID: AR16603JX Time Analyzed: 10:40

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.029	3.957	4.097	18022.1875	17472.5	-3.1
	2	4.722	4.651	4.791	26630.72917	25102.5	-5.7
	3	5.278	5.209	5.349	9459.583333	10342.5	9.3
AR1260	1	7.147	7.082	7.222	29472.39583	25857.5	-12.3
	2	7.697	7.631	7.771	35095.41667	33207.5	-5.4
	3	8.022	7.956	8.096	27099.79167	27212.5	0.4
TCX		3.078	3.025	3.125	607807.5	588500	-3.2
DCB		9.367	9.272	9.472	12966660	13966850	7.7

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JX Date Analyzed: 10/14/2014

Lab Sample ID: AR16603JX Time Analyzed: 10:40

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.593	4.527	4.667	7164.0625	7017.5	-2.0
	2	5.309	5.245	5.385	12292.8125	12397.5	0.9
	3	5.720	5.656	5.796	6529.375	6907.5	5.8
AR1260	1	8.105	8.042	8.182	24398.4375	24367.5	-0.1
	2	8.580	8.517	8.657	31495.83333	30925	-1.8
	3	8.893	8.831	8.971	22848.125	22347.5	-2.2
TCX		3.788	3.741	3.841	399725	385450	-3.6
DCB		10.393	10.304	10.504	367515	376125	2.3

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JY Date Analyzed: 10/14/2014

Lab Sample ID: AR16603JY Time Analyzed: 14:15

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.028	3.957	4.097	18022.1875	16492.5	-8.5
	2	4.722	4.651	4.791	26630.72917	24732.5	-7.1
	3	5.279	5.209	5.349	9459.583333	9770	3.3
AR1260	1	7.146	7.082	7.222	29472.39583	26305	-10.7
	2	7.696	7.631	7.771	35095.41667	34377.5	-2.0
	3	8.020	7.956	8.096	27099.79167	26210	-3.3
TCX		3.077	3.025	3.125	607807.5	556350	-8.5
DCB		9.367	9.272	9.472	12966660	13015075	0.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JY Date Analyzed: 10/14/2014

Lab Sample ID: AR16603JY Time Analyzed: 14:15

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.593	4.527	4.667	7164.0625	7217.5	0.7
	2	5.309	5.245	5.385	12292.8125	12537.5	2.0
	3	5.721	5.656	5.796	6529.375	6982.5	6.9
AR1260	1	8.105	8.042	8.182	24398.4375	24482.5	0.3
	2	8.580	8.517	8.657	31495.83333	31897.5	1.3
	3	8.893	8.831	8.971	22848.125	22780	-0.3
TCX		3.788	3.741	3.841	399725	389950	-2.4
DCB		10.393	10.304	10.504	367515	378375	3.0

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JB Date Analyzed: 10/20/2014

Lab Sample ID: AR16603JB Time Analyzed: 9:33

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.026	3.957	4.097	18022.1875	18120	0.5
	2	4.720	4.651	4.791	26630.72917	24317.5	-8.7
	3	5.277	5.209	5.349	9459.583333	10627.5	12.3
AR1260	1	7.148	7.082	7.222	29472.39583	25840	-12.3
	2	7.697	7.631	7.771	35095.41667	29120	-17.0
	3	8.022	7.956	8.096	27099.79167	25785	-4.9
TCX		3.075	3.025	3.125	607807.5	608350	0.1
DCB		9.368	9.272	9.472	12966660	13505700	4.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JB Date Analyzed: 10/20/2014

Lab Sample ID: AR16603JB Time Analyzed: 9:33

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.592	4.527	4.667	7164.0625	6700	-6.5
	2	5.308	5.245	5.385	12292.8125	11990	-2.5
	3	5.720	5.656	5.796	6529.375	6410	-1.8
AR1260	1	8.106	8.042	8.182	24398.4375	22752.5	-6.7
	2	8.581	8.517	8.657	31495.83333	27302.5	-13.3
	3	8.894	8.831	8.971	22848.125	20615	-9.8
TCX		3.787	3.741	3.841	399725	366750	-8.2
DCB		10.395	10.304	10.504	367515	337625	-8.1

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JC Date Analyzed: 10/20/2014

Lab Sample ID: AR16603JC Time Analyzed: 18:47

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.027	3.957	4.097	18022.1875	16562.5	-8.1
	2	4.720	4.651	4.791	26630.72917	24122.5	-9.4
	3	5.278	5.209	5.349	9459.583333	9657.5	2.1
AR1260	1	7.147	7.082	7.222	29472.39583	25782.5	-12.5
	2	7.696	7.631	7.771	35095.41667	33625	-4.2
	3	8.022	7.956	8.096	27099.79167	25630	-5.4
TCX		3.075	3.025	3.125	607807.5	558600	-8.1
DCB		9.368	9.272	9.472	12966660	12600425	-2.8

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JC Date Analyzed: 10/20/2014

Lab Sample ID: AR16603JC Time Analyzed: 18:47

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.590	4.527	4.667	7164.0625	7187.5	0.3
	2	5.307	5.245	5.385	12292.8125	12242.5	-0.4
	3	5.718	5.656	5.796	6529.375	6610	1.2
AR1260	1	8.105	8.042	8.182	24398.4375	23577.5	-3.4
	2	8.581	8.517	8.657	31495.83333	30120	-4.4
	3	8.894	8.831	8.971	22848.125	21677.5	-5.1
TCX		3.785	3.741	3.841	399725	381950	-4.4
DCB		10.395	10.304	10.504	367515	362150	-1.5

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JU Date Analyzed: 10/28/2014

Lab Sample ID: AR16603JU Time Analyzed: 11:26

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.026	3.957	4.097	18022.1875	18157.5	0.8
	2	4.724	4.651	4.791	26630.72917	25677.5	-3.6
	3	5.282	5.209	5.349	9459.583333	10190	7.7
AR1260	1	7.160	7.082	7.222	29472.39583	25420	-13.7
	2	7.713	7.631	7.771	35095.41667	34735	-1.0
	3	8.031	7.956	8.096	27099.79167	25892.5	-4.5
TCX		3.074	3.025	3.125	607807.5	621650	2.3
DCB		9.371	9.272	9.472	12966660	15944325	23.0

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JU Date Analyzed: 10/28/2014

Lab Sample ID: AR16603JU Time Analyzed: 11:26

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.587	4.527	4.667	7164.0625	8107.5	13.2
	2	5.304	5.245	5.385	12292.8125	13775	12.1
	3	5.716	5.656	5.796	6529.375	6590	0.9
AR1260	1	8.110	8.042	8.182	24398.4375	25067.5	2.7
	2	8.586	8.517	8.657	31495.83333	34030	8.0
	3	8.897	8.831	8.971	22848.125	24702.5	8.1
TCX		3.782	3.741	3.841	399725	429400	7.4
DCB		10.394	10.304	10.504	367515	424125	15.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JV Date Analyzed: 10/28/2014

Lab Sample ID: AR16603JV Time Analyzed: 19:01

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.022	3.957	4.097	18022.1875	17962.5	-0.3
	2	4.720	4.651	4.791	26630.72917	21795	-18.2
	3	5.279	5.209	5.349	9459.583333	10097.5	6.7
AR1260	1	7.164	7.082	7.222	29472.39583	24167.5	-18.0
	2	7.718	7.631	7.771	35095.41667	34120	-2.8
	3	8.034	7.956	8.096	27099.79167	25712.5	-5.1
TCX		3.070	3.025	3.125	607807.5	629250	3.5
DCB		9.370	9.272	9.472	12966660	16730900	29.0

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N1822 Mod. Ref No.: SDG No.: SN1822

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 09/30/2014 10/01/2014

EPA Sample No. (AR####3##): AR16603JV Date Analyzed: 10/28/2014

Lab Sample ID: AR16603JV Time Analyzed: 19:01

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.585	4.527	4.667	7164.0625	8212.5	14.6
	2	5.302	5.245	5.385	12292.8125	14172.5	15.3
	3	5.714	5.656	5.796	6529.375	6997.5	7.2
AR1260	1	8.112	8.042	8.182	24398.4375	25705	5.4
	2	8.588	8.517	8.657	31495.83333	34242.5	8.7
	3	8.898	8.831	8.971	22848.125	24990	9.4
TCX		3.779	3.741	3.841	399725	441200	10.4
DCB		10.393	10.304	10.504	367515	428500	16.6

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 8015D TPH, Total Petroleum Hydrocarbons (TPH) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D TPH

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: F1
Instrument Type: GC-FID
Description: HP6890
Manufacturer: Hewlett-Packard

Model: 6890
GC Column used: 30 m X 0.32 mm ID [0.25 um thickness] Rtx-5MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW01-14S-NWG-100914 (N1822-47CMS), MW01-14S-NWG-100914 (N1822-47CMSD), MW03-15I-NWG-092914 (N1822-04BMS) and MW03-15I-NWG-092914 (N1822-04BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

No sample in this SDG required analysis at dilution.

F. Samples:

No other unusual occurrences were noted during sample analysis.

G. Manual Integration

No sample in this SDG were performed with manual integration.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____10/30/2014_____

CLIENT: Tetra Tech, Inc.
Work Order: N1822
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_W

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79359** SampType: **MBLK** TestCode: **TPH_W** Prep Date: **10/06/14 8:13** Run ID: **F1_141021A**
Client ID: **MB-79359** Batch ID: **79359** Units: **mg/L** Analysis Date: **10/21/14 15:09** SeqNo: **2173007**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	0.20 ^	0.20									
Surrogate: ortho-Terphenyl	0.06933		0.025	0.1000	0	69.3	50	150	0			

Sample ID: **MB-79475** SampType: **MBLK** TestCode: **TPH_W** Prep Date: **10/10/14 14:10** Run ID: **F1_141021A**
Client ID: **MB-79475** Batch ID: **79475** Units: **mg/L** Analysis Date: **10/21/14 10:56** SeqNo: **2172945**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	0.20 ^	0.20									
Surrogate: ortho-Terphenyl	0.07410		0.025	0.1000	0	74.1	50	150	0			

Sample ID: **MB-79558** SampType: **MBLK** TestCode: **TPH_W** Prep Date: **10/17/14 14:44** Run ID: **F1_141020A**
Client ID: **MB-79558** Batch ID: **79558** Units: **mg/L** Analysis Date: **10/20/14 16:12** SeqNo: **2172914**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	0.20 ^	0.20									
Surrogate: ortho-Terphenyl	0.09708		0.025	0.1000	0	97.1	50	150	0			

Sample ID: **LCS-79359** SampType: **LCS** TestCode: **TPH_W** Prep Date: **10/06/14 8:13** Run ID: **F1_141024A**
Client ID: **LCS-79359** Batch ID: **79359** Units: **mg/L** Analysis Date: **10/24/14 16:34** SeqNo: **2173297**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.641	0.20 ^	0.20	5.000	0	92.8	60	140	0			
Surrogate: ortho-Terphenyl	0.09197		0.025	0.1000	0	92.0	50	150	0			

Sample ID: **LCS-79475** SampType: **LCS** TestCode: **TPH_W** Prep Date: **10/10/14 14:10** Run ID: **F1_141021A**
Client ID: **LCS-79475** Batch ID: **79475** Units: **mg/L** Analysis Date: **10/21/14 11:17** SeqNo: **2172946**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	3.462	0.20 ^	0.20	5.000	0	69.2	60	140	0			
Surrogate: ortho-Terphenyl	0.06843		0.025	0.1000	0	68.4	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
m14.10.24.0936 J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1822
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_W

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **LCS-79558**	SampType: **LCS**	TestCode: **TPH_W**	Prep Date: **10/17/14 14:44**	Run ID: **F1_141020A**
Client ID: **LCS-79558**	Batch ID: **79558**	Units: **mg/L**	Analysis Date: **10/20/14 16:33**	SeqNo: **2172916**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	3.999	0.20 ^	0.20	5.000	0	80.0	60	140	0			
Surrogate: ortho-Terphenyl	0.07974		0.025	0.1000	0	79.7	50	150	0			

Sample ID: **LCSD-79558**	SampType: **LCSD**	TestCode: **TPH_W**	Prep Date: **10/17/14 14:44**	Run ID: **F1_141020A**
Client ID: **LCSD-79558**	Batch ID: **79558**	Units: **mg/L**	Analysis Date: **10/20/14 16:54**	SeqNo: **2172917**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.243	0.20 ^	0.20	5.000	0	84.9	60	140	3.999	5.93	20	
Surrogate: ortho-Terphenyl	0.08501		0.025	0.1000	0	85.0	50	150	0			

Sample ID: **N1822-04BMS**	SampType: **MS**	TestCode: **TPH_W**	Prep Date: **10/06/14 8:13**	Run ID: **F1_141022A**
Client ID: **MW03-15I-NWG-0929**	Batch ID: **79359**	Units: **mg/L**	Analysis Date: **10/22/14 15:28**	SeqNo: **2173053**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	3.284	0.20 ^	0.20	5.000	0.08558	64.0	50	150	0			
Surrogate: ortho-Terphenyl	0.07057		0.025	0.1000	0	70.6	50	150	0			

Sample ID: **N1822-47CMS**	SampType: **MS**	TestCode: **TPH_W**	Prep Date: **10/10/14 14:10**	Run ID: **F1_141021A**
Client ID: **MW01-14S-NWG-100**	Batch ID: **79475**	Units: **mg/L**	Analysis Date: **10/21/14 13:44**	SeqNo: **2172953**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	3.592	0.20 ^	0.20	5.000	0.1124	69.6	50	150	0			
Surrogate: ortho-Terphenyl	0.07229		0.025	0.1000	0	72.3	50	150	0			

Sample ID: **N1822-04BMSD**	SampType: **MSD**	TestCode: **TPH_W**	Prep Date: **10/06/14 8:13**	Run ID: **F1_141024A**
Client ID: **MW03-15I-NWG-0929**	Batch ID: **79359**	Units: **mg/L**	Analysis Date: **10/24/14 16:55**	SeqNo: **2173298**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	3.718	0.20 ^	0.20	5.000	0.08558	72.6	50	150	3.284	12.4	30	
Surrogate: ortho-Terphenyl	0.07402		0.025	0.1000	0	74.0	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank; J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

N1822

CLIENT: Tetra Tech, Inc.
Work Order: N1822
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_W

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **N1822-47CMSD** SampType: **MSD** TestCode: **TPH_W** Prep Date: **10/10/14 14:10** Run ID: **F1_141022A**
Client ID: **MW01-14S-NWG-100** Batch ID: **79475** Units: **mg/L** Analysis Date: **10/22/14 14:47** SeqNo: **2173051**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.260	0.20 ^	0.20	5.000	0.1124	83.0	50	150	3.592	17	30	
Surrogate: ortho-Terphenyl	0.08258		0.025	0.1000	0	82.6	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Spectrum Analytical, Inc. RI Division: TPH/EPH Run Logbook

Date	Lab ID	Client	Method	Filename	Dilution	yes/no	Comments	Analyst

Injection Log

AQ : TPH-ACF
OT : TPHO717

Directory: O:\F1.I\140717A.B

INJ'S MAINT: Y/ES

ICAL 12167

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	98	F1j3030.d	1.			17 Jul 2014 10:17
2	96	F1j3031.d	1.			17 Jul 2014 10:38
3	100	F1j3032.d	1.	IBLK FC0140717A	TPH	17 Jul 2014 11:01
4	1	F1j3033.d	1.	FSTD0051A B	TPH ICAL L1 5 PPM	17 Jul 2014 11:22
5	2	F1j3034.d	1.	FSTD0201A C	TPH ICAL L2 20 PPM	17 Jul 2014 11:43
6	3	F1j3035.d	1.	FSTD0501A D	TPH ICAL L3 50 PPM	17 Jul 2014 12:03
7	4	F1j3036.d	1.	FSTD0801A E	TPH ICAL L4 80 PPM	17 Jul 2014 12:24
8	5	F1j3037.d	1.	FSTD1001A F	TPH ICAL L5 100...	17 Jul 2014 12:44
9	6	F1j3038.d	1.	FSTD1201A G	TPH ICAL L6 120...	17 Jul 2014 13:04
10	7	F1j3039.d	1.	FSTD1501A H	TPH ICAL L7 150...	17 Jul 2014 13:24
11	8	F1j3040.d	1.	FSTD2001A I	TPH ICAL L8 200...	17 Jul 2014 13:45
12	9	F1j3041.d	1.	FICV0501A J	TPH ICV 50 PPM	17 Jul 2014 14:06
13	10	F1j3042.d	1.	FICV50001A X PR	TPH DIESEL 5000...	17 Jul 2014 14:26
14	1	F1j3043.d	1.	FSTD1001B	TPH CCAL 100 PPM	17 Jul 2014 14:47
15	100	F1j3044.d	1.	IBLK FC0140717A	TPH	17 Jul 2014 15:07
16	10	F1j3045.d	1.	FICV50001A FC0140717S	TPH DIESEL 5000...	17 Jul 2014 15:28
17	2	F1j3046.d	1.	MB-78028,,78028	DRO	17 Jul 2014 15:49
18	3	F1j3047.d	1.	N1085-05A,,78028	DRO	17 Jul 2014 16:09
19	4	F1j3048.d	1.	N1085-06A,,78028	DRO	17 Jul 2014 16:30
20	5	F1j3049.d	1.	N1085-07A,,78028	DRO	17 Jul 2014 16:51
21	6	F1j3050.d	1.	N1085-08A,,78028	DRO	17 Jul 2014 17:12
22	1	F1j3051.d	1.	FSTD1001C	TPH CCAL 100 PPM	17 Jul 2014 17:32
23	100	F1j3052.d	1.	IBLK	TPH	17 Jul 2014 17:53

7/23/14

7/18/14

Reviewed by _____

Injection Log

AQ: TPH-AGF
GT: TPHG717

Directory: O:\F1.I\141020A.B

INLET MAINT: Y/ES

ICAL 12167

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	96	F1j3620.d	1.			20 Oct 2014 11:05
2	1	F1j3621.d	1.	FSTD1001E ✓ FGWH07172	TPH CCAL L5 100...	20 Oct 2014 11:23
3	95	F1j3622.d	1.	RT CHECK ✓	TPH	20 Oct 2014 11:44
4	100	F1j3623.d	1.	IBLK ✓	TPH	20 Oct 2014 12:04
5	2	F1j3624.d	1.	MB-79513,,79513 ✓	TPH	20 Oct 2014 12:25
6	3	F1j3625.d	1.	LCS-79513,,79513 ✓	TPH	20 Oct 2014 12:44
7	4	F1j3626.d	1.	N1914-01A,,79513 ✓	TPH	20 Oct 2014 13:04
8	5	F1j3627.d	1.	N1914-06A,,79513 ✓	TPH	20 Oct 2014 13:25
9	6	F1j3628.d	1.	N1914-06AMS,,79513 ✓ TPHV RR	TPH	20 Oct 2014 13:46
10	7	F1j3629.d	1.	N1914-06AMSD,,79513 ✓	TPH	20 Oct 2014 14:07
11	8	F1j3630.d	1.	N1914-10A,,79513 ✓	TPH	20 Oct 2014 14:28
12	9	F1j3631.d	1.	N1914-14A,,79513 ✓	TPH	20 Oct 2014 14:49
13	10	F1j3632.d	1.	N1914-18A,,79513 ✓	TPH	20 Oct 2014 15:10
14	1	F1j3633.d	1.	FSTD1001F ✓	TPH CCAL L5 100...	20 Oct 2014 15:30
15	100	F1j3634.d	1.	IBLK ✓	TPH	20 Oct 2014 15:51
16	31	F1j3635.d	1.	MB-79558,,79558 ✓	TPH	20 Oct 2014 16:12
17	32	F1j3636.d	1.	LCS-79558,,79558 ✓	TPH	20 Oct 2014 16:33
18	33	F1j3637.d	1.	LCSD-79558,,79558 ✓	TPH	20 Oct 2014 16:54
19	34	F1j3638.d	1.	N1822-50C,,79558 ✓	TPH	20 Oct 2014 17:15
20	35	F1j3639.d	1.	N1822-52C,,79558 ✓	TPH	20 Oct 2014 17:36
21	36	F1j3640.d	1.	N1907-40B,,79558 ✓	TPH	20 Oct 2014 17:56
22	37	F1j3641.d	1.	N1910-01A,,79558 ✓ N1910-01ARE	TPH see H102208 C	20 Oct 2014 18:17
23	38	F1j3642.d	1.	N1910-03A,,79558 ✓ N1910-03ARE	TPH	20 Oct 2014 18:38
24	39	F1j3643.d	1.	N1915-01BRE,,79558 ✓	TPH	20 Oct 2014 18:59
25	40	F1j3644.d	1.	N1915-02BRE,,79558 ✓	TPH	20 Oct 2014 19:19
26	41	F1j3645.d	1.	N1915-03BRE,,79558 ✓	TPH	20 Oct 2014 19:40
27	1	F1j3646.d	1.	FSTD1001G ✓	TPH CCAL L5 100...	20 Oct 2014 20:01
28	100	F1j3647.d	1.	IBLK ✓	TPH	20 Oct 2014 20:21
29	11	F1j3648.d	1.	N1914-22A,,79513 ✓	TPH	20 Oct 2014 20:42
30	12	F1j3649.d	1.	MB-79553,,79553 ✓	TPH	20 Oct 2014 21:02
31	13	F1j3650.d	1.	LCS-79553,,79553 ✓	TPH	20 Oct 2014 21:23
32	14	F1j3651.d	1.	N1914-26A,,79553 ✓	TPH	20 Oct 2014 21:43
33	15	F1j3652.d	1.	N1914-27A,,79553 ✓	TPH	20 Oct 2014 22:04
34	16	F1j3653.d	1.	N1914-28A,,79553 ✓	TPH	20 Oct 2014 22:24
35	17	F1j3654.d	1.	N1914-28AMS,,79553 ✓	TPH	20 Oct 2014 22:45
36	18	F1j3655.d	1.	N1914-28AMSD,,79553 ✓	TPH	20 Oct 2014 23:05
37	19	F1j3656.d	1.	N1914-33A,,79553 ✓	TPH	20 Oct 2014 23:26
38	20	F1j3657.d	1.	N1914-37A,,79553 ✓	TPH	20 Oct 2014 23:46
39	1	F1j3658.d	1.	FSTD1001H ✓	TPH CCAL L5 100...	21 Oct 2014 00:06
40	100	F1j3659.d	1.	IBLK	TPH	21 Oct 2014 00:27
41	21	F1j3660.d	1.	N1914-32A,,79553 ↓18 5FV ✓	TPH	21 Oct 2014 00:47
42	22	F1j3661.d	1.	N1914-36A,,79553 ↓16 5FV ✓	TPH	21 Oct 2014 01:08
43	23	F1j3662.d	1.	N1914-40A,,79553 ↓17 5FV ✓	TPH	21 Oct 2014 01:28
44	24	F1j3663.d	1.	N1914-04A,,79513 ✓	TPH	21 Oct 2014 01:49
45	25	F1j3664.d	1.	N1914-05A,,79513 ↓23	TPH	21 Oct 2014 02:09
46	26	F1j3665.d	1.	N1914-09A,,79513 ↓29 re-extract	TPH	21 Oct 2014 02:29
47	27	F1j3666.d	1.	N1914-13A,,79513 ↓43	TPH	21 Oct 2014 02:50
48	28	F1j3667.d	1.	N1914-17A,,79513 ↓31	TPH	21 Oct 2014 03:10
49	29	F1j3668.d	1.	N1914-21A,,79513 ✓	TPH	21 Oct 2014 03:31
50	2	F1j3669.d	1.	MB-79513,,79513 ✓ NA	TPH	21 Oct 2014 03:51
51	1	F1j3670.d	1.	FSTD1001I ✓	TPH CCAL L5 100...	21 Oct 2014 04:12
52	100	F1j3671.d	1.	IBLK ✓	TPH	21 Oct 2014 04:32

10/9/14

~~Re-extract all of batch~~ WM 10/21/14

TM 10/24/14

AQ : TPH-AGF
QT : TPH0717Z

Injection Log

Directory: O:\F1.I\141021A.B

INLET MAINT : YES

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	99	F1j3680.d	1.	ICAL 12167		21 Oct 2014 09:36
2	99	F1j3681.d	1.			21 Oct 2014 09:42
3	99	F1j3682.d	1.			21 Oct 2014 09:45
4	96	F1j3683.d	1.			21 Oct 2014 09:54
5	1	F1j3684.d	1.	FSTD1001J FW140717E	TPH CCAL L5 100...	21 Oct 2014 10:14
6	100	F1j3685.d	1.	IBLK	TPH	21 Oct 2014 10:35
7	42	F1j3686.d	1.	MB-79475,,79475	TPH	21 Oct 2014 10:56
8	43	F1j3687.d	1.	LCS-79475,,79475	TPH	21 Oct 2014 11:17
9	44	F1j3688.d	1.	N1822-35B,,79475	TPH	21 Oct 2014 11:38
10	45	F1j3689.d	1.	N1822-37B,,79475	TPH	21 Oct 2014 11:59
11	46	F1j3690.d	1.	N1822-40C,,79475	TPH	21 Oct 2014 12:20
12	47	F1j3691.d	1.	N1822-42C,,79475	TPH	21 Oct 2014 12:41
13	48	F1j3692.d	1.	N1822-44C,,79475	TPH	21 Oct 2014 13:02
14	49	F1j3693.d	1.	N1822-47C,,79475	TPH	21 Oct 2014 13:23
15	50	F1j3694.d	1.	N1822-47CMS,,79475	TPH	21 Oct 2014 13:44
16	51	F1j3695.d	1.	N1822-47CMSD,,79475	TPH	21 Oct 2014 14:05
17	1	F1j3696.d	1.	FSTD1001K	TPH CCAL L5 100...	21 Oct 2014 14:26
18	100	F1j3697.d	1.	IBLK	TPH	21 Oct 2014 14:47
19	52	F1j3698.d	1.	MB-79539,,79539	TPH	21 Oct 2014 15:09
20	53	F1j3699.d	1.	LCS-79539,,79539	TPH	21 Oct 2014 15:30
21	54	F1j3700.d	1.	N1822-02B,,79539	TPH	21 Oct 2014 15:51
22	55	F1j3701.d	1.	N1822-04B,,79539	TPH	21 Oct 2014 16:11
23	56	F1j3702.d	1.	N1822-04BMS,,79539	TPH	21 Oct 2014 16:32
24	57	F1j3703.d	1.	N1822-04BMSD,,79539	TPH	21 Oct 2014 16:54
25	58	F1j3704.d	1.	N1822-07B,,79539	TPH	21 Oct 2014 17:15
26	59	F1j3705.d	1.	N1822-09B,,79539	TPH	21 Oct 2014 17:36
27	60	F1j3706.d	1.	N1822-11B,,79539	TPH	21 Oct 2014 17:57
28	61	F1j3707.d	1.	N1822-14C,,79539	TPH	21 Oct 2014 18:18
29	1	F1j3708.d	1.	FSTD1001L	TPH CCAL L5 100...	21 Oct 2014 18:39
30	100	F1j3709.d	1.	IBLK	TPH	21 Oct 2014 19:00
31	62	F1j3710.d	1.	N1822-16C,,79539	TPH	21 Oct 2014 19:21
32	63	F1j3711.d	1.	N1822-18C,,79539	TPH	21 Oct 2014 19:41
33	64	F1j3712.d	1.	N1822-20C,,79539	TPH	21 Oct 2014 20:02
34	65	F1j3713.d	1.	N1822-23C,,79539	TPH	21 Oct 2014 20:23
35	66	F1j3714.d	1.	N1822-25C,,79539	TPH	21 Oct 2014 20:44
36	67	F1j3715.d	1.	N1822-27C,,79539	TPH	21 Oct 2014 21:05
37	68	F1j3716.d	1.	N1822-29C,,79539	TPH	21 Oct 2014 21:26
38	69	F1j3717.d	1.	N1822-32C,,79539	TPH	21 Oct 2014 21:47
39	1	F1j3718.d	1.	FSTD1001M	TPH CCAL L5 100...	21 Oct 2014 22:07
40	100	F1j3719.d	1.	IBLK	TPH	21 Oct 2014 22:28

10/27/14

TPH V RR

35 35 RR

795 79359

RR RR

GM 10/24/14

GM 10/24/14

N1822

Date	Lab ID	Client	Method	Filename	Dilution	yes/no	Comments	Analyst

AQ : TPH_AGF
QT : TPH07172

Injection Log

Directory: O:\F1.I\141022A.B

INJECT MAINS : NONE

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	99	F1j3720.d	1.	ICAL 12167		22 Oct 2014 08:40
2	99	F1j3721.d	1.			22 Oct 2014 08:44
3	96	F1j3722.d	1.			22 Oct 2014 08:51
4	1	F1j3723.d	1.	FSTD1001N ✓ FW140717Z	TPH CCAL L5 100...	22 Oct 2014 09:38
5	100	F1j3724.d	1.	IBLK	TPH	22 Oct 2014 09:58
6	2	F1j3725.d	1.	MB-79598,,79598 ✓	TPH	22 Oct 2014 10:18
7	3	F1j3726.d	1.	LCS-79598,,79598 ✓	TPH	22 Oct 2014 10:39
8	4	F1j3727.d	1.	LCSD-79598,,79598 ✓	TPH	22 Oct 2014 11:00
9	5	F1j3728.d	1.	N1947-01A,,79598 ✓	TPH	22 Oct 2014 11:20
10	6	F1j3729.d	1.	N1947-02A,,79598 ✓	TPH	22 Oct 2014 11:41
11	7	F1j3730.d	1.	MB-79593,,79593 ✓	TPH	22 Oct 2014 12:02
12	8	F1j3731.d	1.	LCS-79593,,79593 ✓ JRR	TPH	22 Oct 2014 12:22
13	9	F1j3732.d	1.	LCSD-79593,,79593 ✓	TPH	22 Oct 2014 12:43
14	10	F1j3733.d	1.	N1914-31B,,79593 ✓	TPH	22 Oct 2014 13:04
15	11	F1j3734.d	1.	~~N1914-42B,~~,79593 ✓ N1931-42B	TPH	22 Oct 2014 13:24
16	1	F1j3735.d	1.	FSTD1001O ✓	TPH CCAL L5 100...	22 Oct 2014 13:45
17	100	F1j3736.d	1.	IBLK ✓	TPH	22 Oct 2014 14:06
18	8	F1j3737.d	1.	LCS-79593,,79593 ✓	TPH	22 Oct 2014 14:26
19	51	F1j3738.d	1.	N1822-47CMSD,,79475 ✓	TPH	22 Oct 2014 14:47
20	12	F1j3739.d	1.	N1914-06MS,,79513 ✓	TPH	22 Oct 2014 15:08
21	13	F1j3740.d	1.	N1822-04BMS,,79539 ✓	TPH	22 Oct 2014 15:28
22	1	F1j3741.d	1.	FSTD1001P ✓	TPH CCAL L5 100...	22 Oct 2014 15:49
23	100	F1j3742.d	1.	IBLK ✓	TPH	22 Oct 2014 16:09

see 141022B.B

MH 10/24/14

TOB 10/24/14

MH 10/24/14

MH

Reviewed by _____

N1822

Date

Analyst

Injection Log

Directory: O:\F1.I\141024A.B

AS: TPH-MCF

GT: TPH07172

INLET MAINT: YES

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	99	F1j3750.d	1.	ICAL 12167		24 Oct 2014 10:27
2	99	F1j3751.d	1.			24 Oct 2014 10:30
3	96	F1j3752.d	1.			24 Oct 2014 10:39
4	1	F1j3753.d	1.	FSTD1001Q ✓ FC014071772	TPH CCAL L5 100...	24 Oct 2014 10:59
5	100	F1j3754.d	1.	IBLK	TPH	24 Oct 2014 11:23
6	2	F1j3755.d	1.	MB-79624,,79624	TPH	24 Oct 2014 11:44
7	3	F1j3756.d	1.	LCS-79624,,79624	TPH	24 Oct 2014 12:05
8	4	F1j3757.d	1.	LCSD-79624,,79624	TPH	24 Oct 2014 12:26
9	5	F1j3758.d	1.	N1907-16A,,79624	TPH	24 Oct 2014 12:47
10	6	F1j3759.d	1.	N1907-20A,,79624	TPH	24 Oct 2014 13:08
11	7	F1j3760.d	1.	N1907-22A,,79624	TPH	24 Oct 2014 13:28
12	8	F1j3761.d	1.	N1907-25A,,79624	TPH	24 Oct 2014 13:49
13	9	F1j3762.d	1.	N1907-26A,,79624	TPH	24 Oct 2014 14:10
14	10	F1j3763.d	1.	N1907-33A,,79624	TPH	24 Oct 2014 14:30
15	11	F1j3764.d	1.	N1907-34A,,79624	TPH	24 Oct 2014 14:51
16	1	F1j3765.d	1.	FSTD1001R	TPH CCAL L5 100...	24 Oct 2014 15:11
17	100	F1j3766.d	1.	IBLK	TPH	24 Oct 2014 15:32
18	12	F1j3767.d	1.	N1907-38A,,79624	TPH	24 Oct 2014 15:53
19	13	F1j3768.d	1.	N1907-04A,,79624	TPH	24 Oct 2014 16:13
20	23	F1j3769.d	1.	LCS-79359,,79359	TPH	24 Oct 2014 16:34
21	25	F1j3770.d	1.	N1822-04BMSD,,79359	TPH	24 Oct 2014 16:55
22	14	F1j3771.d	1.	N1907-05A,,79624	TPH	24 Oct 2014 17:16
23	15	F1j3772.d	1.	N1907-08A,,79624	TPH	24 Oct 2014 17:37
24	16	F1j3773.d	1.	N1907-09A,,79624	TPH	24 Oct 2014 17:57
25	17	F1j3774.d	1.	N1907-12A,,79624	TPH	24 Oct 2014 18:18
26	2	F1j3775.d	1.	MB-79624,,79624 DA	TPH	24 Oct 2014 18:39
27	2	F1j3776.d	1.	MB-79624,,79624 DA	TPH	24 Oct 2014 19:00
28	1	F1j3777.d	1.	FSTD1001S	TPH CCAL L5 100...	24 Oct 2014 19:21
29	100	F1j3778.d	1.	IBLK	TPH	24 Oct 2014 19:42
30	18	F1j3779.d	1.	N1907-13A,,79624	TPH	24 Oct 2014 20:03
31	19	F1j3780.d	1.	N1907-17A,,79624	TPH	24 Oct 2014 20:23
32	20	F1j3781.d	1.	N1907-29A,,79624	TPH	24 Oct 2014 20:44
33	21	F1j3782.d	1.	N1907-30A,,79624	TPH	24 Oct 2014 21:05
34	22	F1j3783.d	1.	N1907-37A,,79624	TPH	24 Oct 2014 21:26
35	2	F1j3784.d	1.	MB-79624,,79624 DA	TPH	24 Oct 2014 21:46
36	1	F1j3785.d	1.	FSTD1001T	TPH CCAL L5 100...	24 Oct 2014 22:07
37	100	F1j3786.d	1.	IBLK	TPH	24 Oct 2014 22:28

CW 10/27/14

CW 10/27/14

Response Factor Report FID1

Method Path : O:\F1.I\QMETHODS\
Method File : TPH0717.M
Title : TPH, ETPH, DRO, Fuel ID, ORO
Last Update : Thu Jul 17 14:13:45 2014
Response Via : Initial Calibration

Calibration Files
5 =F1J3033.D 20 =F1J3034.D 50 =F1J3035.D
80 =F1J3036.D 100 =F1J3037.D 120 =F1J3038.D

		Compound	5	20	50	80	100	120	Avg		%RSD
1)	S	1-Chlorooctadeca							0.000		-1.00
2)	S	ortho-Terphenyl	2.830	3.103	2.910	3.255	3.307	3.086	3.084	E5	5.33
3)	H	DRO C10 to C28	2.842	2.831	2.599	3.089	3.059	2.824	2.875	E5	5.59
4)	H	TPH C9 to C36	2.898	2.856	2.622	3.123	3.088	2.856	2.907	E5	5.59
5)	H	Gasoline							0.000		-1.00
6)	H	Jet Fuel							0.000		-1.00
7)	H	Motor Oil/Other							0.000		-1.00
8)	H	Number 2 Fuel							0.000		-1.00
9)	H	Number 4 Fuel							0.000		-1.00
10)	H	Number 6 Fuel							0.000		-1.00
11)	I	5a-Androstane	----------ISTD----------								
12)	S	1-Chlorooctadeca							0.000		-1.00
13)	S	ortho-Terphenyl	0.939	1.011	1.065	1.097	1.063	1.071	1.050		4.86
14)	T	C9 Nonane	0.797	0.784	0.809	0.898	0.822	0.834	0.834		4.68
15)	TD	C10 Decane	0.815	0.807	0.837	0.927	0.853	0.863	0.861		4.85
16)	TD	C12 Dodecane	0.854	0.843	0.879	0.963	0.893	0.902	0.899		4.56
17)	TD	C14 Tetradecane	0.890	0.873	0.913	0.992	0.928	0.932	0.931		4.21
18)	TD	C16 Hexadecane	0.951	0.914	0.946	1.027	0.967	0.966	0.968		3.55
19)	TD	C18 Octadecane	0.940	0.919	0.950	1.033	0.979	0.970	0.972		3.69
20)	TD	C20 Eicosane	0.971	0.945	0.978	1.066	1.015	1.002	1.002		3.77
21)	TD	C22 Docosane	0.977	0.968	0.987	1.081	1.031	1.019	1.016		3.72
22)	TD	C24 Tetracosane	0.997	0.974	0.995	1.092	1.042	1.033	1.028		3.68
23)	TD	C26 Hexacosane	1.011	0.987	1.010	1.110	1.060	1.053	1.045		3.81
24)	TD	C28 Octacosane	1.024	0.993	1.016	1.119	1.067	1.062	1.054		3.85
25)	T	C30 Triacontane	1.017	1.006	1.033	1.138	1.083	1.080	1.069		4.26
26)	T	C32 Dotriaconta	0.986	0.987	1.021	1.123	1.066	1.065	1.051		4.63
27)	T	C36 Hexatriacon	1.229	1.028	1.057	1.162	1.095	1.096	1.113		5.57
28)	H	DRO C10 to C28	0.943	0.922	0.951	1.041	0.984	0.980	0.978		3.91
29)	H	TPH C8 to C40 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
30)	H	TPH C9 to C36 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
31)		----------							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3633.D
Lab Smp Id: FSTD1001F Client Smp ID: FSTD1001F
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 15:30 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 20 16:36:05 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	317.256 E3	-2.9	102	0.00
3	H	DRO C10 to C28	287.452	292.700 E3	-1.8	101	0.00
4	H	TPH C9 to C40	290.717	288.566 E3	0.7	101	0.00
11	I	5a-Androstane	1.000	1.000	0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074	-2.3	102	0.00
14		C9 Nonane	0.834	0.748	10.3	102	0.00
15		C10 Decane	0.861	0.801	7.0	102	0.00
16		C12 Dodecane	0.899	0.892	0.8	103	0.00
17		C14 Tetradecane	0.931	0.965	-3.7	103	0.00
18		C16 Hexadecane	0.968	1.017	-5.1	103	0.00
19		C18 Octadecane	0.972	1.022	-5.1	102	0.00
20		C20 Eicosane	1.002	1.048	-4.6	102	0.00
21		C22 Docosane	1.016	1.049	-3.2	100	0.00
22		C24 Tetracosane	1.028	1.044	-1.6	100	0.00
23		C26 Hexacosane	1.045	1.043	0.2	100	0.00
24		C28 Octacosane	1.054	1.031	2.2	100	0.00
25		C30 Triacontane	1.069	1.028	3.8	100	0.00
26		C32 Dotriacontane	1.051	0.996	5.2	100	0.00
27		C36 Hexatriacontane	1.113	0.997	10.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.991	-1.3	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.977	1.2	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.977	1.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3646.D
Lab Smp Id: FSTD1001G Client Smp ID: FSTD1001G
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 20:01 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 21 09:05:41 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	326.840 E3	-6.0	106	0.00
3	H	DRO C10 to C28	287.452	302.026 E3	-5.1	105	0.00
4	H	TPH C9 to C40	290.717	298.887 E3	-2.8	105	0.00
11	I	5a-Androstane	1.000	1.000	0.0	105	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.071	-2.0	106	0.00
14		C9 Nonane	0.834	0.738	11.5	104	0.00
15		C10 Decane	0.861	0.790	8.2	104	0.00
16		C12 Dodecane	0.899	0.881	2.0	105	0.00
17		C14 Tetradecane	0.931	0.951	-2.1	105	0.00
18		C16 Hexadecane	0.968	1.002	-3.5	105	0.00
19		C18 Octadecane	0.972	1.018	-4.7	105	0.00
20		C20 Eicosane	1.002	1.047	-4.5	105	0.00
21		C22 Docosane	1.016	1.054	-3.7	104	0.00
22		C24 Tetracosane	1.028	1.052	-2.3	104	0.00
23		C26 Hexacosane	1.045	1.054	-0.9	104	0.00
24		C28 Octacosane	1.054	1.045	0.9	105	0.00
25		C30 Triacontane	1.069	1.045	2.2	105	0.00
26		C32 Dotriacontane	1.051	1.014	3.5	105	0.00
27		C36 Hexatriacontane	1.113	1.018	8.5	105	-0.01
28	H	DRO C10 to C28 ISTD	0.978	0.989	-1.1	105	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.979	1.0	105	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.979	1.0	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141021A.B\F1J3684.D
Lab Smp Id: FSTD1001J Client Smp ID: FSTD1001J
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 21 Oct 2014 10:14 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 21 10:34:26 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	288.090	E3	6.6	100	0.00
3	H	DRO C10 to C28	287.452	271.484	E3	5.6	100	0.00
4	H	TPH C9 to C40	290.717	274.150	E3	5.7	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.058		-0.8	100	0.00
14		C9 Nonane	0.834	0.745		10.7	100	0.00
15		C10 Decane	0.861	0.778		9.6	100	0.00
16		C12 Dodecane	0.899	0.845		6.0	100	0.00
17		C14 Tetradecane	0.931	0.915		1.7	100	0.00
18		C16 Hexadecane	0.968	0.974		-0.6	100	0.00
19		C18 Octadecane	0.972	1.002		-3.1	100	0.00
20		C20 Eicosane	1.002	1.051		-4.9	100	0.00
21		C22 Docosane	1.016	1.075		-5.8	100	0.00
22		C24 Tetracosane	1.028	1.088		-5.8	100	0.00
23		C26 Hexacosane	1.045	1.117		-6.9	100	0.00
24		C28 Octacosane	1.054	1.125		-6.7	100	0.00
25		C30 Triacontane	1.069	1.138		-6.5	100	0.00
26		C32 Dotriacontane	1.051	1.113		-5.9	100	0.00
27		C36 Hexatriacontane	1.113	1.129		-1.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.997		-1.9	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.007		-1.8	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.007		-1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141021A.B\F1J3696.D
Lab Smp Id: FSTD1001K Client Smp ID: FSTD1001K
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 21 Oct 2014 14:26 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 21 15:09:57 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	256.226 E3	16.9	89	0.00
3	H	DRO C10 to C28	287.452	244.145 E3	15.1	90	0.00
4	H	TPH C9 to C40	290.717	248.406 E3	14.6	91	0.00
11	I	5a-Androstane	1.000	1.000	0.0	89	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.054	-0.4	89	0.00
14		C9 Nonane	0.834	0.777	6.8	93	0.00
15		C10 Decane	0.861	0.804	6.6	92	0.00
16		C12 Dodecane	0.899	0.854	5.0	90	0.00
17		C14 Tetradecane	0.931	0.910	2.3	89	0.00
18		C16 Hexadecane	0.968	0.967	0.1	89	0.00
19		C18 Octadecane	0.972	0.993	-2.2	88	0.00
20		C20 Eicosane	1.002	1.047	-4.5	89	0.00
21		C22 Docosane	1.016	1.080	-6.3	90	0.00
22		C24 Tetracosane	1.028	1.100	-7.0	90	0.00
23		C26 Hexacosane	1.045	1.138	-8.9	91	0.00
24		C28 Octacosane	1.054	1.152	-9.3	91	0.00
25		C30 Triacontane	1.069	1.170	-9.4	92	0.00
26		C32 Dotriacontane	1.051	1.149	-9.3	92	0.00
27		C36 Hexatriacontane	1.113	1.168	-4.9	92	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.005	-2.8	90	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.022	-3.3	91	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.022	-3.3	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141021A.B\F1J3708.D
Lab Smp Id: FSTD1001L Client Smp ID: FSTD1001L
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 21 Oct 2014 18:39 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 08:34:39 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	293.729 E3	4.8	102	0.00
3	H	DRO C10 to C28	287.452	277.138 E3	3.6	102	0.00
4	H	TPH C9 to C40	290.717	280.031 E3	3.7	102	0.00
11	I	5a-Androstane	1.000	1.000	0.0	102	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.054	-0.4	102	0.00
14		C9 Nonane	0.834	0.742	11.0	102	0.00
15		C10 Decane	0.861	0.771	10.5	101	0.00
16		C12 Dodecane	0.899	0.833	7.3	101	0.00
17		C14 Tetradecane	0.931	0.906	2.7	101	0.00
18		C16 Hexadecane	0.968	0.968	0.0	102	0.00
19		C18 Octadecane	0.972	0.997	-2.6	102	0.00
20		C20 Eicosane	1.002	1.050	-4.8	102	0.00
21		C22 Docosane	1.016	1.078	-6.1	103	0.00
22		C24 Tetracosane	1.028	1.091	-6.1	103	0.00
23		C26 Hexacosane	1.045	1.122	-7.4	103	0.00
24		C28 Octacosane	1.054	1.129	-7.1	103	0.00
25		C30 Triacontane	1.069	1.141	-6.7	103	0.00
26		C32 Dotriacontane	1.051	1.115	-6.1	102	0.00
27		C36 Hexatriacontane	1.113	1.127	-1.3	102	-0.01
28	H	DRO C10 to C28 ISTD	0.978	0.995	-1.7	102	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.005	-1.6	102	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.005	-1.6	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141021A.B\F1J3718.D
Lab Smp Id: FSTD1001M Client Smp ID: FSTD1001M
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 21 Oct 2014 22:07 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 08:37:18 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	262.149 E3	15.0	91	0.00
3	H	DRO C10 to C28	287.452	248.550 E3	13.5	92	0.00
4	H	TPH C9 to C40	290.717	252.584 E3	13.1	92	0.00
11	I	5a-Androstane	1.000	1.000	0.0	92	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.050	0.0	91	0.00
14		C9 Nonane	0.834	0.757	9.2	93	0.00
15		C10 Decane	0.861	0.785	8.8	93	0.00
16		C12 Dodecane	0.899	0.842	6.3	91	0.00
17		C14 Tetradecane	0.931	0.902	3.1	90	0.00
18		C16 Hexadecane	0.968	0.962	0.6	91	0.00
19		C18 Octadecane	0.972	0.988	-1.6	90	0.00
20		C20 Eicosane	1.002	1.041	-3.9	91	0.00
21		C22 Docosane	1.016	1.073	-5.6	91	0.00
22		C24 Tetracosane	1.028	1.092	-6.2	92	0.00
23		C26 Hexacosane	1.045	1.130	-8.1	93	0.00
24		C28 Octacosane	1.054	1.143	-8.4	93	0.00
25		C30 Triacontane	1.069	1.160	-8.5	93	-0.01
26		C32 Dotriacontane	1.051	1.138	-8.3	94	-0.01
27		C36 Hexatriacontane	1.113	1.155	-3.8	94	-0.02
28	H	DRO C10 to C28 ISTD	0.978	0.996	-1.8	92	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.012	-2.3	92	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.012	-2.3	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3735.D
Lab Smp Id: FSTD10010 Client Smp ID: FSTD10010
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 13:45 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 14:02:35 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	301.046	E3	2.4	101	0.00
3	H	DRO C10 to C28	287.452	286.371	E3	0.4	101	0.00
4	H	TPH C9 to C40	290.717	292.647	E3	-0.7	101	0.00
11	I	5a-Androstane	1.000	1.000		0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.057		-0.7	101	0.00
14		C9 Nonane	0.834	0.782		6.2	100	0.00
15		C10 Decane	0.861	0.804		6.6	100	0.00
16		C12 Dodecane	0.899	0.857		4.7	100	0.00
17		C14 Tetradecane	0.931	0.914		1.8	101	0.00
18		C16 Hexadecane	0.968	0.971		-0.3	101	0.00
19		C18 Octadecane	0.972	0.995		-2.4	101	0.00
20		C20 Eicosane	1.002	1.047		-4.5	102	0.00
21		C22 Docosane	1.016	1.074		-5.7	102	0.00
22		C24 Tetracosane	1.028	1.094		-6.4	102	0.00
23		C26 Hexacosane	1.045	1.138		-8.9	102	0.00
24		C28 Octacosane	1.054	1.157		-9.8	102	0.00
25		C30 Triacontane	1.069	1.181		-10.5	102	0.00
26		C32 Dotriacontane	1.051	1.165		-10.8	102	0.00
27		C36 Hexatriacontane	1.113	1.200		-7.8	102	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.005		-2.8	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.027		-3.8	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.027		-3.8	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3741.D
Lab Smp Id: FSTD1001P Client Smp ID: FSTD1001P
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 15:49 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 16:06:49 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	323.981 E3	-5.0	109	0.00
3	H	DRO C10 to C28	287.452	309.010 E3	-7.5	109	0.00
4	H	TPH C9 to C40	290.717	316.753 E3	-9.0	110	0.00
11	I	5a-Androstane	1.000	1.000	0.0	109	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.059	-0.9	109	0.00
14		C9 Nonane	0.834	0.791	5.2	109	0.00
15		C10 Decane	0.861	0.812	5.7	109	0.00
16		C12 Dodecane	0.899	0.860	4.3	108	0.00
17		C14 Tetradecane	0.931	0.916	1.6	108	0.00
18		C16 Hexadecane	0.968	0.975	-0.7	108	0.00
19		C18 Octadecane	0.972	0.997	-2.6	109	0.00
20		C20 Eicosane	1.002	1.047	-4.5	109	0.00
21		C22 Docosane	1.016	1.081	-6.4	110	0.00
22		C24 Tetracosane	1.028	1.100	-7.0	110	0.00
23		C26 Hexacosane	1.045	1.147	-9.8	110	0.00
24		C28 Octacosane	1.054	1.169	-10.9	111	0.00
25		C30 Triacontane	1.069	1.196	-11.9	111	0.00
26		C32 Dotriacontane	1.051	1.184	-12.7	111	0.00
27		C36 Hexatriacontane	1.113	1.225	-10.1	112	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.011	-3.4	109	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.036	-4.8	110	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.036	-4.8	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141024A.B\F1J3765.D
Lab Smp Id: FSTD1001R Client Smp ID: FSTD1001R
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 24 Oct 2014 15:11 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 24 15:32:37 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	309.817 E3	-0.5	95	0.00
3	H	DRO C10 to C28	287.452	291.028 E3	-1.2	95	0.00
4	H	TPH C9 to C40	290.717	295.220 E3	-1.5	95	0.00
11	I	5a-Androstane	1.000	1.000	0.0	94	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074	-2.3	95	0.00
14		C9 Nonane	0.834	0.830	0.5	104	0.00
15		C10 Decane	0.861	0.853	0.9	104	0.00
16		C12 Dodecane	0.899	0.910	-1.2	102	0.00
17		C14 Tetradecane	0.931	0.956	-2.7	99	0.00
18		C16 Hexadecane	0.968	1.000	-3.3	96	0.00
19		C18 Octadecane	0.972	1.003	-3.2	94	0.00
20		C20 Eicosane	1.002	1.041	-3.9	93	0.00
21		C22 Docosane	1.016	1.055	-3.8	92	0.00
22		C24 Tetracosane	1.028	1.059	-3.0	92	0.00
23		C26 Hexacosane	1.045	1.100	-5.3	92	0.00
24		C28 Octacosane	1.054	1.115	-5.8	92	0.00
25		C30 Triacontane	1.069	1.135	-6.2	92	0.00
26		C32 Dotriacontane	1.051	1.119	-6.5	93	0.00
27		C36 Hexatriacontane	1.113	1.155	-3.8	94	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.009	-3.2	95	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.024	-3.5	95	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.024	-3.5	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141024A.B\F1J3777.D
Lab Smp Id: FSTD1001S Client Smp ID: FSTD1001S
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 24 Oct 2014 19:21 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 27 08:29:33 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	330.642 E3	-7.2	102	0.00
3	H	DRO C10 to C28	287.452	308.288 E3	-7.2	101	0.00
4	H	TPH C9 to C40	290.717	311.948 E3	-7.3	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.075	-2.4	102	0.00
14		C9 Nonane	0.834	0.830	0.5	111	0.00
15		C10 Decane	0.861	0.851	1.2	110	0.00
16		C12 Dodecane	0.899	0.910	-1.2	109	0.00
17		C14 Tetradecane	0.931	0.958	-2.9	106	0.00
18		C16 Hexadecane	0.968	0.997	-3.0	102	0.00
19		C18 Octadecane	0.972	1.001	-3.0	100	0.00
20		C20 Eicosane	1.002	1.036	-3.4	99	0.00
21		C22 Docosane	1.016	1.042	-2.6	97	0.00
22		C24 Tetracosane	1.028	1.048	-1.9	97	0.00
23		C26 Hexacosane	1.045	1.084	-3.7	96	0.00
24		C28 Octacosane	1.054	1.097	-4.1	96	0.00
25		C30 Triacontane	1.069	1.116	-4.4	97	0.00
26		C32 Dotriacontane	1.051	1.099	-4.6	97	0.00
27		C36 Hexatriacontane	1.113	1.132	-1.7	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.002	-2.5	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.014	-2.5	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.014	-2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 8015D GRO, Gasoline Range Organic (GRO) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D GRO

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: V4
Instrument Type: GC-FID/PID

Description: HP5890 A
Manufacturer: Hewlett-Packard
Model: 5890
GC Column used: 30 m X 0.53 mm ID [um thickness] RTX-502.2 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW01-14S-NWG-100914 (N1822-47BMS), MW01-14S-NWG-100914 (N1822-47BMSD), MW03-15I-NWG-092914 (N1822-04AMS) and MW03-15I-NWG-092914 (N1822-04AMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

NA--Supervisor needs to explain why no internal standards were detected during the generation of this narrative.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____10/30/2014_____

CLIENT: Tetra Tech, Inc.
Work Order: N1822
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79408**	SampType: **MBLK**	TestCode: **GRO_W**	Prep Date: **10/08/14 8:09**	Run ID: **V4_141008A**
Client ID: **MB-79408**	Batch ID: **79408**	Units: **ug/L**	Analysis Date: **10/08/14 11:17**	SeqNo: **2164469**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	20.71		5.0	20.00	0	104	87	112	0			

Sample ID: **MB-79465**	SampType: **MBLK**	TestCode: **GRO_W**	Prep Date: **10/10/14 8:33**	Run ID: **V4_141010A**
Client ID: **MB-79465**	Batch ID: **79465**	Units: **ug/L**	Analysis Date: **10/10/14 10:32**	SeqNo: **2165900**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	19.10		5.0	20.00	0	95.5	87	112	0			

Sample ID: **MB-79493**	SampType: **MBLK**	TestCode: **GRO_W**	Prep Date: **10/14/14 8:26**	Run ID: **V4_141014A**
Client ID: **MB-79493**	Batch ID: **79493**	Units: **ug/L**	Analysis Date: **10/14/14 11:51**	SeqNo: **2168177**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	19.29		5.0	20.00	0	96.4	87	112	0			

Sample ID: **MB-79616**	SampType: **MBLK**	TestCode: **GRO_W**	Prep Date: **10/21/14 7:55**	Run ID: **V4_141021A**
Client ID: **MB-79616**	Batch ID: **79616**	Units: **ug/L**	Analysis Date: **10/21/14 10:28**	SeqNo: **2169956**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	19.67		5.0	20.00	0	98.3	87	112	0			

Sample ID: **LCS-79408**	SampType: **LCS**	TestCode: **GRO_W**	Prep Date: **10/08/14 8:09**	Run ID: **V4_141008A**
Client ID: **LCS-79408**	Batch ID: **79408**	Units: **ug/L**	Analysis Date: **10/08/14 9:48**	SeqNo: **2164466**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	420.7	100 ^	100	500.0	0	84.1	80	120	0			
Surrogate: Bromofluorobenzene	21.65		5.0	20.00	0	108	87	112	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank; J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1822
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **LCS-79465**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **10/10/14 8:33**			Run ID: **V4_141010A**				
Client ID: **LCS-79465**	Batch ID: **79465**	Units: **ug/L**			Analysis Date: **10/10/14 10:06**			SeqNo: **2165899**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	506.0	100 ^	100	500.0	0	101	80	120	0			
Surrogate: Bromofluorobenzene	18.72		5.0	20.00	0	93.6	87	112	0			

Sample ID: **LCS-79493**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **10/14/14 8:26**			Run ID: **V4_141014A**				
Client ID: **LCS-79493**	Batch ID: **79493**	Units: **ug/L**			Analysis Date: **10/14/14 11:12**			SeqNo: **2168176**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	528.5	100 ^	100	500.0	0	106	80	120	0			
Surrogate: Bromofluorobenzene	18.07		5.0	20.00	0	90.4	87	112	0			

Sample ID: **LCS-79616**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **10/21/14 7:55**			Run ID: **V4_141021A**				
Client ID: **LCS-79616**	Batch ID: **79616**	Units: **ug/L**			Analysis Date: **10/21/14 9:19**			SeqNo: **2169953**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	519.9	100 ^	100	500.0	0	104	80	120	0			
Surrogate: Bromofluorobenzene	19.16		5.0	20.00	0	95.8	87	112	0			

Sample ID: **N1822-04AMS**	SampType: **MS**	TestCode: **GRO_W**			Prep Date: **10/08/14 8:09**			Run ID: **V4_141008A**				
Client ID: **MW03-15I-NWG-0929**	Batch ID: **79408**	Units: **ug/L**			Analysis Date: **10/08/14 17:01**			SeqNo: **2164490**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	533.9	100 ^	100	500.0	0	107	60	140	0			
Surrogate: Bromofluorobenzene	19.80		5.0	20.00	0	99.0	87	112	0			

Sample ID: **N1822-47BMS**	SampType: **MS**	TestCode: **GRO_W**			Prep Date: **10/14/14 8:26**			Run ID: **V4_141014A**				
Client ID: **MW01-14S-NWG-100**	Batch ID: **79493**	Units: **ug/L**			Analysis Date: **10/14/14 12:17**			SeqNo: **2168178**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	505.0	100 ^	100	500.0	0	101	60	140	0			
Surrogate: Bromofluorobenzene	18.18		5.0	20.00	0	90.9	87	112	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1822
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: N1822-04AMSD	SampType: MSD	TestCode: GRO_W	Prep Date: 10/08/14 8:09	Run ID: V4_141008A
Client ID: MW03-15I-NWG-0929	Batch ID: 79408	Units: ug/L	Analysis Date: 10/08/14 17:28	SeqNo: 2164491

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	485.0	100 ^	100	500.0	0	97.0	60	140	533.9	9.59	20	
Surrogate: Bromofluorobenzene	18.40		5.0	20.00	0	92.0	87	112	0			

Sample ID: N1822-47BMSD	SampType: MSD	TestCode: GRO_W	Prep Date: 10/14/14 8:26	Run ID: V4_141014A
Client ID: MW01-14S-NWG-100	Batch ID: 79493	Units: ug/L	Analysis Date: 10/14/14 12:39	SeqNo: 2168179

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	471.1	100 ^	100	500.0	0	94.2	60	140	505.0	6.95	20	
Surrogate: Bromofluorobenzene	18.51		5.0	20.00	0	92.5	87	112	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO
CAL ID: SS-VW141006A
ANALYST: WL
INITIAL CAL: 10/6/14
IS/SS ID: STP-VW141006B
LCS-VW141006C
DATE: 10/8/14
COMMENTS:
Reviewed by: 10.9.14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141006.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	V4d07830.d	1.	5ML,VSTD2.54A,VSTD2.54A	OK	06 Oct 2014 10:27
2	4	V4d07831.d	1.	5ML,VSTD0054A,VSTD0054A	OK	06 Oct 2014 10:58
3	5	V4d07832.d	1.	5ML,VSTD0204A,VSTD0204A	OK	06 Oct 2014 11:25
4	6	V4d07833.d	1.	5ML,VSTD0504A,VSTD0504A	OK	06 Oct 2014 11:50
5	7	V4d07834.d	1.	5ML,VSTD1004A,VSTD1004A	OK	06 Oct 2014 12:13
6	8	V4d07835.d	1.	5ML,VSTD2004A,VSTD2004A	OK	06 Oct 2014 12:52
7	9	V4d07836.d	1.	5ML,VICV0504A,VICV0504A	OK	06 Oct 2014 13:19

WL 10/8/14

Logbook ID 90.0065-03/13

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO CAL ID: SS-VW141006A ANALYST: WL

INITIAL CAL: 10/6/14 IS/SS ID: STD-VW141006B LCS-VW141006C DATE: 10/8/14

COMMENTS: Reviewed by: 10914

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141008.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	V4d07840.d	1.	5ML,VSTD0504B,VSTD0504B	OK	08 Oct 2014 09:20
2	2	V4d07841.d	1.	5ML,LCS-79408,LCS-79408,79408	OK	08 Oct 2014 09:48
3	3	V4d07842.d	1.	5ML,LCS-79407,LCS-79407,79407	OK	08 Oct 2014 10:10
4	4	V4d07843.d	1.	5ML,MB-79407,MB-79407,79407	OK	08 Oct 2014 10:41
5	5	V4d07844.d	1.	5ML,MB-79408,MB-79408,79408	OK	08 Oct 2014 11:17
6	6	V4d07845.d	1.	5ML,N1870-01B,,79407	OK	08 Oct 2014 11:45
7	7	V4d07846.d	1.	5ML,N1870-02B,,79407	OK	08 Oct 2014 12:13
8	8	V4d07847.d	1.	5ML,N1870-03B,,79407	OK	08 Oct 2014 12:43
9	9	V4d07848.d	1.	5ML,N1870-04B,,79407	OK	08 Oct 2014 13:06
10	1	V4d07849.d	1.	5ML,N1870-05B,,79407	OK	08 Oct 2014 13:29
11	2	V4d07850.d	1.	5ML,N1822-01A,,79408	OK	08 Oct 2014 14:06
12	3	V4d07851.d	1.	5ML,N1822-06A,,79408	OK	08 Oct 2014 14:27
13	4	V4d07852.d	1.	5ML,N1822-02A,,79408	OK	08 Oct 2014 15:01
14	5	V4d07853.d	1.	5ML,N1822-04A,,79408	OK	08 Oct 2014 15:22
15	6	V4d07854.d	1.	5ML,N1822-07A,,79408	OK	08 Oct 2014 15:47
16	7	V4d07855.d	1.	5ML,N1822-09A,,79408	OK	08 Oct 2014 16:17
17	8	V4d07856.d	1.	5ML,N1822-11A,,79408	OK	08 Oct 2014 16:38
18	9	V4d07857.d	1.	5ML,N1822-04AMS,,79408	OK	08 Oct 2014 17:01
19	1	V4d07858.d	1.	5ML,N1822-04AMSD,,79408	OK	08 Oct 2014 17:28
20	2	V4d07859.d	1.	5ML,VSTD0504C,VSTD0504C	OK	08 Oct 2014 18:00

WL 10/9/14

Logbook ID 90.0065-03/13

Data File: \\avogadro\organics\V4.i\141008.B\V4D07840.D
Report Date: 09-Oct-2014 08:19

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07840.D
Analysis Type: WATER
Lab Sample ID: VSTD0504B
Method: \\avogadro\organics\V4.i\141008.B\v4GRO.m

Injection Date: 08-OCT-2014 09:20
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	83119	0.010	7.86304	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	33468	0.010	1.75870	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141008.B\V4D07859.D
Report Date: 09-Oct-2014 08:19

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07859.D
Analysis Type: WATER
Lab Sample ID: VSTD0504C
Method: \\avogadro\organics\V4.i\141008.B\v4GRO.m

Injection Date: 08-OCT-2014 18:00
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	89645	0.010	0.62895	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	35858	0.010	-5.25960	20.00000	Averaged

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO_W(5) CAL ID: SS-VW140006A ANALYST: WL

INITIAL CAL: 10/6/14 IS/SS ID: STD-VW140006B LCS-VW140006C DATE: 10/16/14

COMMENTS: Reviewed by: 10/16/14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141010.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	V4d07861.d	1.	5ML,VSTD0504D,VSTD0504D	OK	10 Oct 2014 09:22
2	2	V4d07862.d	1.	5ML,LCS-79464,LCS-79464,79464	OK	10 Oct 2014 09:43
3	3	V4d07863.d	1.	5ML,LCS-79465,LCS-79465,79465	OK	10 Oct 2014 10:06
4	4	V4d07864.d	1.	5ML,MB-79465,MB-79465,79465	OK	10 Oct 2014 10:32
5	5	V4d07865.d	1.	5ML,MB-79464,MB-79464,79464	OK	10 Oct 2014 10:58
6	6	V4d07866.d	1.	5ML,N1898-01B,,79464	OK	10 Oct 2014 11:21
7	7	V4d07867.d	1.	5ML,N1898-02B,,79464	OK	10 Oct 2014 11:48
8	8	V4d07868.d	1.	5ML,N1898-03B,,79464	OK	10 Oct 2014 12:15
9	9	V4d07869.d	1.	5ML,N1822-13A,,79465	OK	10 Oct 2014 12:44
10	1	V4d07870.d	1.	5ML,N1822-22A,,79465	OK	10 Oct 2014 13:05
11	2	V4d07871.d	1.	5ML,N1822-14B,,79465	OK	10 Oct 2014 13:29
12	3	V4d07872.d	1.	5ML,N1822-16B,,79465	OK	10 Oct 2014 13:57
13	4	V4d07873.d	1.	5ML,N1822-18B,,79465	OK	10 Oct 2014 14:20
14	5	V4d07874.d	1.	5ML,N1822-20B,,79465	OK	10 Oct 2014 14:42
15	6	V4d07875.d	1.	5ML,N1822-23B,,79465	OK	10 Oct 2014 15:04
16	7	V4d07876.d	1.	5ML,N1822-25B,,79465	OK	10 Oct 2014 15:25
17	8	V4d07877.d	1.	5ML,N1822-27B,,79465	OK	10 Oct 2014 15:47
18	9	V4d07878.d	1.	5ML,N1822-29B,,79465	OK	10 Oct 2014 16:08
19	255	V4d07879.d	1.	5ML,VSTD0504E,VSTD0504E	OK	10 Oct 2014 16:32

WL 10/16/14

Logbook ID 90.0065-03/13

Data File: \\avogadro\organics\V4.i\141010.B\V4D07861.D
Report Date: 16-Oct-2014 14:39

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07861.D
Analysis Type: WATER
Lab Sample ID: VSTD0504D
Method: \\avogadro\organics\V4.i\141010.B\v4GRO.m

Injection Date: 10-OCT-2014 09:22
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	94444	0.010	-4.69040	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	31230	0.010	8.32642	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141010.B\V4D07879.D
Report Date: 16-Oct-2014 14:39

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07879.D
Analysis Type: WATER
Lab Sample ID: VSTD0504E
Method: \\avogadro\organics\V4.i\141010.B\v4GRO.m

Injection Date: 10-OCT-2014 16:32
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88699	0.010	1.67786	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	31413	0.010	7.78909	20.00000	Averaged

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO-W CAL ID: SS-VW141006A ANALYST: WL

INITIAL CAL: 10/6/14 IS/SS ID: STD-VW141006B LCS-VW141006C DATE: 10/17/14

COMMENTS: Reviewed by: 10/22/14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141014.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	255	V4d07881.d	1.	5ML,VSTD0504F,VSTD0504F	OK	14 Oct 2014 10:47
2	1	V4d07882.d	1.	5ML,LCS-79493,LCS-79493,79493	OK	14 Oct 2014 11:12
3	2	V4d07883.d	1.	5ML,MB-79493,MB-79493,79493	OK	14 Oct 2014 11:51
4	3	V4d07884.d	1.	5ML,N1822-47BMS,,79493	OK	14 Oct 2014 12:17
5	4	V4d07885.d	1.	5ML,N1822-47BMSD,,79493	OK	14 Oct 2014 12:39
6	5	V4d07886.d	1.	5ML,N1823-01A,,79493	OK	14 Oct 2014 13:07
7	6	V4d07887.d	1.	5ML,N1823-03A,,79493	OK	14 Oct 2014 13:28
8	7	V4d07888.d	1.	5ML,N1822-31A,,79493	OK	14 Oct 2014 13:55
9	8	V4d07889.d	1.	5ML,N1822-34A,,79493	OK	14 Oct 2014 14:16
10	9	V4d07890.d	1.	5ML,N1822-39A,,79493		14 Oct 2014 14:42
11	1	V4d07891.d	1.	5ML,N1822-46A,,79493	OK	14 Oct 2014 15:19
12	2	V4d07892.d	1.	5ML,N1907-40A,,79493	OK	14 Oct 2014 15:41
13	3	V4d07893.d	1.	5ML,N1822-35A,,79493	OK	14 Oct 2014 16:02
14	4	V4d07894.d	1.	5ML,N1822-37A,,79493	OK	14 Oct 2014 16:23
15	5	V4d07895.d	1.	5ML,N1822-40B,,79493	OK	14 Oct 2014 16:45
16	6	V4d07896.d	1.	5ML,N1822-42B,,79493	OK	14 Oct 2014 17:15
17	4	V4d07897.d	1.	5ML,N1822-44B,,79493	OK	14 Oct 2014 17:37
18	5	V4d07898.d	1.	5ML,N1822-47B,,79493	OK	14 Oct 2014 18:01
19	3	V4d07899.d	1.	5ML,VSTD0504G,VSTD0504G	OK	14 Oct 2014 19:14

WL 10/17/14

Logbook ID 90.0065-03/13

Data File: \\avogadro\organics\V4.i\141014.B\V4D07881.D
Report Date: 22-Oct-2014 15:38

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07881.D
Analysis Type: WATER
Lab Sample ID: VSTD0504F
Method: \\avogadro\organics\V4.i\141014.B\v4GRO.m

Injection Date: 14-OCT-2014 10:47
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88401	0.010	2.00789	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	31174	0.010	8.49198	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141014.B\V4D07899.D
Report Date: 22-Oct-2014 15:38

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07899.D
Analysis Type: WATER
Lab Sample ID: VSTD0504G
Method: \\avogadro\organics\V4.i\141014.B\v4GRO.m

Injection Date: 14-OCT-2014 19:14
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	83226	0.010	7.74422	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32150	0.010	5.62480	20.00000	Averaged

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO_W/S CAL ID: SS-VW140006A ANALYST: WL

INITIAL CAL: 10/6/14 IS/SS ID: STD-VW140006B LCS-VW140006C DATE: 10/22/14

COMMENTS: Reviewed by: 11.7.14

A

Injection Log

Directory: O:\V4.I\141021.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	V4d08005.d	1.	5ML,VSTD0504P,VSTD0504P	OK	21 Oct 2014 08:46
2	2	V4d08006.d	1.	5ML,LCS-79616,LCS-79616,79616	OK	21 Oct 2014 09:19
3	3	V4d08007.d	1.	5ML,LCS-79621,LCS-79621,79621	OK	21 Oct 2014 09:41
4	4	V4d08008.d	1.	5ML,MB-79621,MB-79621,79621	OK	21 Oct 2014 10:03
5	5	V4d08009.d	1.	5ML,MB-79616,MB-79616,79616	OK	21 Oct 2014 10:28
6	6	V4d08010.d	1.	5ML,N1822-49A,,79616	OK	21 Oct 2014 10:55
7	7	V4d08011.d	1.	5ML,N1914-31A,,79616	OK	21 Oct 2014 11:17
8	8	V4d08012.d	1.	5ML,N1931-42A,,79616	OK	21 Oct 2014 11:40
9	9	V4d08013.d	1.	5ML,N1947-01B,,79621	OK	21 Oct 2014 12:02
10	1	V4d08014.d	1.	5ML,N1947-02B,,79621	OK	21 Oct 2014 12:26
11	2	V4d08015.d	1.	5ML,N1907-26B,,79621	OK	21 Oct 2014 12:47
12	3	V4d08016.d	1.	5ML,N1907-29B,,79621	OK	21 Oct 2014 13:19
13	4	V4d08017.d	1.	5ML,N1907-30B,,79621	OK	21 Oct 2014 13:43
14	5	V4d08018.d	1.	5ML,N1907-33B,,79621	OK	21 Oct 2014 14:08
15	6	V4d08019.d	1.	5ML,N1907-34B,,79621	OK	21 Oct 2014 14:33
16	7	V4d08020.d	1.	5ML,N1907-37B,,79621	OK	21 Oct 2014 14:54
17	8	V4d08021.d	1.	5ML,N1907-38B,,79621	OK	21 Oct 2014 15:17
18	6	V4d08022.d	1.	5ML,N1822-50B,,79616	OK	21 Oct 2014 15:56
19	7	V4d08023.d	1.	5ML,N1822-52B,,79616	OK	21 Oct 2014 16:18
20	5	V4d08024.d	1.	5ML,VSTD0504Q,VSTD0504Q	OK	21 Oct 2014 17:14

WL 10/22/14

Logbook ID 90.0065-03/13

Data File: \\avogadro\organics\V4.i\141021.B\V4D08005.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08005.D
Analysis Type: WATER
Lab Sample ID: VSTD0504P
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

Injection Date: 21-OCT-2014 08:46
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88671	0.010	1.70891	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32210	0.010	5.45102	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141021.B\V4D08024.D
Report Date: 23-Oct-2014 08:15

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08024.D
Analysis Type: WATER
Lab Sample ID: VSTD0504Q
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

Injection Date: 21-OCT-2014 17:14
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88143	0.010	2.29429	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32981	0.010	3.18576	20.00000	Averaged

TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **S. ANDERSON** **DATE: DECEMBER 19, 2014**

FROM: **A. COGNETTI** **COPIES: DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION: METALS**
NCBC DAVISVILLE, CTO WE01
SAMPLE DELIVERY GROUP (SDG) – N1822

SAMPLES: 22/Aqueous/Metals

FD01-093014	FD02-101014	MW01-10S-NWG-100214
MW01-12S-NWG-100214	MW01-14S-NWG-100914	MW02-03S-NWG-100314
MW02-05S-NWG-100214	MW02-08Sa-NWG-100114	MW02-09S-NWG-100814
MW02-10S-NWG-101014	MW02-11S-NWG-100814	MW02-4Sa-NWG-100614
MW03-02S-NWG-092914	MW03-04S-NWG-093014	MW03-05S-NWG-100114
MW03-15I-NWG-092914	MW03-15S-NWG-100114	MW03-16S-NWG-100614
MW03-17I-NWG-100214	MW03-17S-NWG-093014	RB01-100114
RB02-100814		

Overview

The sample set for NCBC Davisville, CTO WE01, SDG N1822 consists of twenty (20) environmental aqueous samples and two (2) rinsate blanks analyzed for total and dissolved metals. There are two (2) field duplicate pairs associated with this SDG: FD01-093014/MW03-17S-NWG-093014 and FD02-101014/MW02-10S-NWG-101014.

The samples were collected on September 29 and 30, 2014 and October 1, 2,3,6,8 and 9, 2014 and analyzed by Spectrum Analytical. All analyses were conducted in accordance with SW-846 Method 6020A and 7470A. A Tier II validation was performed.

The data contained in this SDG were validated with regard to the following parameters:

*	• Data Completeness
*	• Holding Times
*	• Initial and Continuing Calibration
	• Laboratory Method and/or Field Quality Control Blanks
	• Laboratory Control Spike / Laboratory Control Spike Duplicate Recoveries
	• Matrix Spike/Matrix Spike Duplicate Results
*	• ICP Interference Check Sample Results
*	• ICP Serial Dilution
*	• Duplicate Sample Results
*	• Detection Limits
*	• Analyte Quantitation
*	• Analyte Identification
*	• Field Duplicate Precision

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as

discussed in this data validation report. The attached Table summarizes the validation qualifications which are based on the following information:

LABORATORY METHOD BLANK

Contamination was detected in the laboratory preparation blanks, initial calibration and continuing calibration blanks at the following maximum concentrations:

Contaminant	Maximum Concentration (ug/L)	Action Level (ug/L)
Aluminum (1)	4.193	20.97
Barium (1)	1.981	9.91
Cobalt (1)	0.454	2.27
Copper (1)	0.242	1.21
Iron (1)	46.893	234.47
Nickel (1)	0.438	2.19
Aluminum (2)	3.917	19.59
Beryllium (2)	0.079	0.395
Cobalt (2)	0.105	0.525
Lead (2)	0.082	0.41
Magnesium (2)	20.13	100.65
Potassium (2)	27.786	138.93
Silver (2)	0.28	1.4
Thallium (2)	0.15	0.75
Arsenic (3)	-0.581	2.91
Cobalt (4)	0.031	1.55

(1) Maximum concentration detected in the laboratory preparation blank associated with batch 79660.
(2) Maximum concentration detected in the continuing calibration blank analyzed on October 24, 2014.
(3) Maximum concentration detected in the initial calibration blank analyzed on October 24, 2014.
(4) Maximum concentration detected in the laboratory preparation blank associated with batch 79679.

An action level of 5X the maximum concentration of contaminant was established in order to evaluate samples for blank contamination. Sample aliquot and dilution factors were taken into account when applying the action level. Detected results less than the action level were qualified as (U).

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS / MSD)

The matrix spike (MS) percent recovery (%R) of iron was greater than the upper quality control limit in spiked sample MW03-15I-NWG-092914 (batch 79960). The detected iron results were qualified as estimated (J).

LABORATORY CONTROL SPIKE RECOVERIES

The laboratory control sample (LCS) %R of mercury was less than the 80% lower quality control limit in batch 79326. The nondetected mercury results were qualified as estimated (UJ).

ADDITIONAL COMMENTS

In worksheet #15 of the Tier II Sampling and Analysis Plan (SAP) Installation Restoration Site 3, (September 2013), the project action limit for thallium is less than the method detection limit.
Positive results reported at concentrations greater than the method detection limit (MDL) but less than the Reporting

Limit (RL) were qualified as estimated (J).

Nondetected results were reported to the limit of detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Several metals were detected in the laboratory blanks. The laboratory control sample (LCS) %R of mercury was less than the 80% lower quality control limit in batch 79326.

Other Factors Affecting Data Quality: The MS %R of iron was greater than the upper quality control limit in spiked sample MW03-15I-NWG-092914. Positive results reported at concentrations greater than the method detection limit (MDL) but less than the Reporting Limit (RL) were qualified as estimated (J).

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements, National Functional Guidelines for Inorganic Data Validation (January 2010), Superfund Guidance/Procedures Attachment 2-3a: Example Inorganic Data Review Worksheets (1/13), and the Department of Defense (DoD) document entitled, "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013). The text of this report has been formulated to address only those problem areas affecting data quality.

Ann Cognetti

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Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	FD01-093014			FD02-101014			MW01-10S-NWG-100214			MW01-12S-NWG-100214		
SDG: N1822	LAB_ID	N1822-09C			N1822-52A			N1822-27A			N1822-29A		
FRACTION: M	SAMP_DATE	9/30/2014			10/10/2014			10/2/2014			10/2/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014			MW02-10S-NWG-101014								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		37.6			37			11.7	U	A	8.5	U	A
ANTIMONY		0.21	J	P	0.2	J	P	0.2	U		0.2	U	
ARSENIC		0.38	U		0.47	U	A	0.38	U		0.38	U	
BARIUM		15.6			3.5	J	P	5.1	J	P	5.6	J	P
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.15	U	
CADMIUM		0.12	J	P	0.12	J	P	0.15	U		0.09	J	P
CALCIUM		6660			12300			4380			10600		
CHROMIUM		1	J	P	2.8			0.91	J	P	0.72	J	P
COBALT		7.3			0.55	U	A	0.033	U	A	0.24	U	A
COPPER		1.9	J	P	0.7	J	P	0.38	U		0.39	J	P
IRON		52.5	U	A	1050			20	U		20	U	
LEAD		0.11	U	A	0.13	U	A	0.15	U		0.15	U	
MAGNESIUM		2240			1410			1430			1700		
MANGANESE		110			357			3.9			1.4	J	P
MERCURY		0.05	UJ	E	0.05	U		0.05	U		0.05	U	
NICKEL		10.1			0.91	J	P	0.25	U		0.74	J	P
POTASSIUM		1490			1460			822			1340		
SELENIUM		0.25	U		0.22	J	P	0.25	U		0.25	U	
SILVER		0.26	U	A	0.1	U		0.091	U	A	0.094	U	A
SODIUM		11400			7620			6420			4090		
THALLIUM		0.077	U	A	0.075	U		0.075	U		0.075	U	
VANADIUM		0.77	J	P	1	U		1	U		1	U	
ZINC		10.2			58.8			1	U		1.4	J	P

PROJ_NO: 01813	NSAMPLE	MW01-14S-NWG-100914			MW02-03S-NWG-100314			MW02-04Sa-NWG-100614			MW02-05S-NWG-100214		
SDG: N1822	LAB_ID	N1822-47A			N1822-32A			N1822-35C			N1822-23A		
FRACTION: M	SAMP_DATE	10/9/2014			10/3/2014			10/6/2014			10/2/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		17.8	U	A	202			16.5	U	A	38.2		
ANTIMONY		0.2	U		0.2	U		0.2	U		0.41	J	P
ARSENIC		0.38	U		0.24	U	A	0.38	U		0.38	U	
BARIUM		10.5			16.2			2	J	P	8	J	P
BERYLLIUM		0.15	U		0.17	U	A	0.15	U		0.08	U	A
CADMIUM		0.091	J	P	0.19	J	P	0.1	J	P	0.16	J	P
CALCIUM		7810			34300			5770			7940		
CHROMIUM		1.2	J	P	1	J	P	1.6	J	P	1.3	J	P
COBALT		0.098	U	A	0.56	J	P	0.042	U	A	0.19	U	A
COPPER		0.38	U		0.72	J	P	0.38	U		0.28	J	P
IRON		20	U		20	U		14.5	J	P	20	U	
LEAD		0.15	U		0.12	U	A	0.09	U	A	0.15	U	
MAGNESIUM		2110			5850			1420			1830		
MANGANESE		4.4			18.3			4.1			10.8		
MERCURY		0.05	U		0.05	U		0.05	U		0.05	U	
NICKEL		1.6			0.9	J	P	0.59	J	P	0.57	J	P
POTASSIUM		1590			2020			711			776		
SELENIUM		0.37	J	P	0.41	J	P	0.15	J	P	0.2	J	P
SILVER		0.04	U	A	0.078	U	A	0.074	U	A	0.14	U	A
SODIUM		27000			11800			5900			6470		
THALLIUM		0.075	U		0.11	U	A	0.075	U		0.075	U	
VANADIUM		1	U		1	U		1.3	J	P	1	U	
ZINC		1.5	J	P	5.6			1	U		1.2	J	P

PROJ_NO: 01813	NSAMPLE	MW02-08Sa-NWG-100114			MW02-09S-NWG-100814			MW02-10S-NWG-101014			MW02-11S-NWG-100814		
SDG: N1822	LAB_ID	N1822-20A			N1822-42A			N1822-50A			N1822-44A		
FRACTION: M	SAMP_DATE	10/1/2014			10/8/2014			10/10/2014			10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		17	U	A	13.7	U	A	49.1			80.1		
ANTIMONY		0.2	U		0.2	U		0.23	J	P	0.2	U	
ARSENIC		0.38	U		0.38	U		0.34	U	A	0.38	U	
BARIUM		12.6			2.9	J	P	3.5	J	P	2.1	J	P
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.15	U	
CADMIUM		0.13	J	P	0.15	U		0.2	J	P	0.1	J	P
CALCIUM		27300			3230			11900			3610		
CHROMIUM		1.2	J	P	0.93	J	P	2.9			1.8	J	P
COBALT		1.2	U	A	0.05	U		0.54	U	A	0.12	U	A
COPPER		0.71	U	A	0.38	U		0.81	J	P	0.49	J	P
IRON		40.3	U	A	20	U		1010			163	J	P
LEAD		0.11	U	A	0.11	U	A	0.17	U	A	0.22	U	A
MAGNESIUM		2470			814			1370			1050		
MANGANESE		6.5			3.5			332			8		
MERCURY		0.05	UJ	E	0.05	U		0.05	U		0.05	U	
NICKEL		2.6			0.25	U		0.93	J	P	0.77	J	P
POTASSIUM		2410			697			1400			614		
SELENIUM		0.27	J	P	0.25	U		0.31	J	P	0.25	U	
SILVER		0.17	U	A	0.048	U	A	0.023	U	A	0.053	U	A
SODIUM		5960			5830			7370			5580		
THALLIUM		0.053	U	A	0.075	U		0.075	U		0.075	U	
VANADIUM		1	U		1	U		1.1	J	P	1	U	
ZINC		2.7			1	U		46.6			1	U	

PROJ_NO: 01813	NSAMPLE	MW03-02S-NWG-092914			MW03-04S-NWG-093014			MW03-05S-NWG-100114			MW03-15I-NWG-092914		
SDG: N1822	LAB_ID	N1822-02C			N1822-07C			N1822-16A			N1822-04C		
FRACTION: M	SAMP_DATE	9/29/2014			9/30/2014			10/1/2014			9/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9.8	U	A	79			24.2			88.2		
ANTIMONY		0.37	J	P	0.2	U		0.2	U		0.53	J	P
ARSENIC		0.38	U		0.38	U		0.38	U		0.38	U	
BARIUM		8.5	U	A	9	U	A	7.1	U	A	18		
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.34	U	A
CADMIUM		0.15	U		0.1	J	P	0.49	J	P	0.29	J	P
CALCIUM		4840			3870			3710			8290		
CHROMIUM		1.4	J	P	1.4	J	P	0.9	J	P	1.4	J	P
COBALT		0.029	U	A	0.065	U	A	0.03	U	A	16.7		
COPPER		0.24	U	A	0.33	U	A	0.24	U	A	0.68	U	A
IRON		20	U		98.3	U	A	31.6	U	A	6030	J	D
LEAD		0.15	U		0.22	U	A	0.088	U	A	0.15	U	A
MAGNESIUM		771			886			760			2810		
MANGANESE		4.5			15.5			6.2			134		
MERCURY		0.05	UJ	E	0.05	UJ	E	0.05	UJ	E	0.05	UJ	E
NICKEL		0.2	U	A	0.27	U	A	12.5			25.3		
POTASSIUM		1990			1530			747			1530		
SELENIUM		0.21	J	P	0.25	U		0.25	U		0.25	U	
SILVER		0.61	U	A	0.3	U	A	0.19	U	A	0.48	U	A
SODIUM		4020			5460			4250			22300		
THALLIUM		0.093	U	A	0.075	U		0.075	U		0.076	U	A
VANADIUM		0.65	J	P	1	U		1	U		1	U	
ZINC		0.82	J	P	1.2	J	P	3.9			48		

PROJ_NO: 01813	NSAMPLE	MW03-15S-NWG-100114			MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014		
SDG: N1822	LAB_ID	N1822-18A			N1822-37C			N1822-25A			N1822-11C		
FRACTION: M	SAMP_DATE	10/1/2014			10/6/2014			10/2/2014			9/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		23.3			17.8	U	A	21			37.4		
ANTIMONY		0.2	U		0.2	U		0.22	J	P	0.2	U	
ARSENIC		0.38	U		0.38	U		0.27	U	A	0.38	U	
BARIUM		5.2	U	A	8.6	J	P	10.8			15.5		
BERYLLIUM		0.15	U		0.15	U		0.27	U	A	0.15	U	
CADMIUM		0.7	J	P	0.15	U		0.15	U		0.14	J	P
CALCIUM		3490			7140			7390			6780		
CHROMIUM		0.98	J	P	0.97	J	P	1.2	J	P	0.81	J	P
COBALT		0.64	U	A	0.034	U	A	11.4			7.3		
COPPER		0.46	U	A	0.38	U		0.38	U		1.5	J	P
IRON		20	U		20	U		1500			51.9	U	A
LEAD		0.15	U		0.15	U		0.15	U		0.15	U	
MAGNESIUM		1390			1010			2380			2240		
MANGANESE		21.7			10.6			40.3			110		
MERCURY		0.05	UJ	E	0.05	U		0.05	U		0.05	UJ	E
NICKEL		3.9			0.95	J	P	19.7			10.5		
POTASSIUM		772			1200			1510			1480		
SELENIUM		0.25	U		0.25	U		0.25	U		0.25	U	
SILVER		0.16	U	A	0.052	U	A	0.11	U	A	0.23	U	A
SODIUM		6830			6690			18600			11300		
THALLIUM		0.075	U		0.075	U		0.072	U	A	0.089	U	A
VANADIUM		0.84	J	P	0.84	J	P	0.63	J	P	1	U	
ZINC		2.5			1.2	J	P	22.1			11.2		

PROJ_NO: 01813	NSAMPLE	RB01-100114			RB02-100814		
SDG: N1822	LAB_ID	N1822-14A			N1822-40A		
FRACTION: M	SAMP_DATE	10/1/2014			10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		6.8	U		6.8	U	
ANTIMONY		0.2	U		0.2	U	
ARSENIC		0.38	U		0.38	U	
BARIUM		1.4	J	P	2	U	
BERYLLIUM		0.15	U		0.15	U	
CADMIUM		0.1	J	P	0.56	J	P
CALCIUM		8380			38	U	
CHROMIUM		0.9	J	P	1.2	J	P
COBALT		0.083	J	P	0.05	U	
COPPER		0.32	J	P	0.38	U	
IRON		20	U		20	U	
LEAD		0.097	J	P	0.15	U	
MAGNESIUM		1270			12	U	
MANGANESE		0.95	J	P	1	U	
MERCURY		0.05	UJ	E	0.05	U	
NICKEL		0.25	U		0.25	U	
POTASSIUM		819			20	U	
SELENIUM		0.25	U		0.25	U	
SILVER		0.19	J	P	0.047	J	P
SODIUM		7490			50	U	
THALLIUM		0.075	U		0.075	U	
VANADIUM		1	U		0.62	J	P
ZINC		0.73	U		1	U	

PROJ_NO: 01813	NSAMPLE	FD01-093014			FD02-101014			MW01-10S-NWG-100214			MW01-12S-NWG-100214		
SDG: N1822	LAB_ID	N1822-10A			N1822-53A			N1822-28A			N1822-30A		
FRACTION: MF	SAMP_DATE	9/30/2014			10/10/2014			10/2/2014			10/2/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	MW03-17S-NWG-093014			MW02-10S-NWG-101014								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		35			3.3	U	A	11.2	U	A	6.7	U	A
ANTIMONY		0.21	J	P	0.2	U		0.2	U		0.2	U	
ARSENIC		0.38	U		0.38	U		0.38	U		0.38	U	
BARIUM		15.8			3.6	J	P	5	J	P	5.6	J	P
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.15	U	
CADMIUM		0.13	J	P	0.12	J	P	0.15	U		0.15	U	
CALCIUM		6840			11200			4330			10200		
CHROMIUM		0.94	J	P	0.82	J	P	0.83	J	P	0.88	J	P
COBALT		7.4			0.64	U	A	0.048	U	A	0.23	U	A
COPPER		3.1			0.58	J	P	0.72	J	P	1.1	J	P
IRON		46.7	U	A	1530			20	U		20	U	
LEAD		0.075	U	A	0.15	U		0.15	U		0.15	U	
MAGNESIUM		2280			1500			1400			1640		
MANGANESE		107			491			4.2			2.6		
MERCURY		0.05	UJ	E	0.05	U		0.05	U		0.05	U	
NICKEL		11			1.8			0.83	J	P	1.3		
POTASSIUM		1550			1530			831			1330		
SELENIUM		0.25	U		0.26	J	P	0.25	U		0.25	U	
SILVER		0.25	U	A	0.1	U		0.091	U	A	0.09	U	A
SODIUM		11700			7870			6330			4000		
THALLIUM		0.077	U	A	0.075	U		0.075	U		0.075	U	
VANADIUM		1	J	P	1	U		1	U		1	U	
ZINC		14.2			49.7			1.6	J	P	2	J	P

PROJ_NO: 01813	NSAMPLE	MW01-14S-NWG-100914			MW02-03S-NWG-100314			MW02-04Sa-NWG-100614			MW02-05S-NWG-100214		
SDG: N1822	LAB_ID	N1822-48A			N1822-33A			N1822-36A			N1822-24A		
FRACTION: MF	SAMP_DATE	10/9/2014			10/3/2014			10/6/2014			10/2/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		19.3	U	A	184			6	U	A	34		
ANTIMONY		0.2	U		0.2	U		0.2	U		0.28	J	P
ARSENIC		0.38	U		0.38	U		0.38	U		0.38	U	
BARIUM		10.1			15.6			2	J	P	5.2	J	P
BERYLLIUM		0.15	U		0.16	U	A	0.15	U		0.078	U	A
CADMIUM		0.088	J	P	0.19	J	P	0.088	J	P	0.18	J	P
CALCIUM		7480			32800			5650			7920		
CHROMIUM		0.89	J	P	1	J	P	1.4	J	P	1.3	J	P
COBALT		0.078	U	A	0.51	U	A	0.049	U	A	0.17	U	A
COPPER		0.58	J	P	1.7	J	P	0.87	J	P	1.6	J	P
IRON		150	J	P	20	U		20	U		20	U	
LEAD		0.22	U	A	0.17	U	A	0.15	U		0.23	U	A
MAGNESIUM		2030			5650			1380			1830		
MANGANESE		14.4			17.5			3.9			12.1		
MERCURY		0.05	U		0.05	U		0.05	U		0.05	U	
NICKEL		1.4			1.4			1			5.3		
POTASSIUM		1540			1970			716			801		
SELENIUM		0.36	J	P	0.34	J	P	0.25	U		0.25	U	
SILVER		0.034	U	A	0.07	U	A	0.061	U	A	0.11	U	A
SODIUM		25900			11200			5780			6570		
THALLIUM		0.075	U		0.1	U	A	0.075	U		0.075	U	
VANADIUM		1	U		1	U		0.64	J	P	1	U	
ZINC		1.4	J	P	6			1.5	J	P	8		

PROJ_NO: 01813	NSAMPLE	MW02-08Sa-NWG-100114			MW02-09S-NWG-100814			MW02-10S-NWG-101014			MW02-11S-NWG-100814		
SDG: N1822	LAB_ID	N1822-21A			N1822-43A			N1822-51A			N1822-45A		
FRACTION: MF	SAMP_DATE	10/1/2014			10/8/2014			10/10/2014			10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		4.4	U	A	14.2	U	A	3.6	U	A	13.4	U	A
ANTIMONY		0.2	U		0.2	U		0.2	U		0.2	U	
ARSENIC		0.38	U		0.38	U		0.19	U	A	0.38	U	
BARIUM		11			3	J	P	3.6	J	P	2	J	P
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.15	U	
CADMIUM		0.13	J	P	0.54	J	P	0.13	J	P	0.14	J	P
CALCIUM		28300			3100			11200			3620		
CHROMIUM		1	J	P	1.1	J	P	0.87	J	P	1.3	J	P
COBALT		1.3	U	A	0.027	U	A	0.63	U	A	0.038	U	A
COPPER		2.2			1.2	J	P	0.27	J	P	0.93	J	P
IRON		20	U		20	U		1580			180	J	P
LEAD		0.15	U		2.7			0.15	U		0.55	J	P
MAGNESIUM		2570			784			1500			1030		
MANGANESE		6.8			3.3			501			5.2		
MERCURY		0.05	UJ	E	0.05	U		0.05	U		0.05	U	
NICKEL		3.3			3.6			1.2			1.3		
POTASSIUM		2530			708			1520			626		
SELENIUM		0.29	J	P	0.25	U		0.31	J	P	0.27	J	P
SILVER		0.11	U	A	0.049	U	A	0.1	U		0.043	U	A
SODIUM		6260			5650			7870			5570		
THALLIUM		0.054	U	A	0.075	U		0.075	U		0.075	U	
VANADIUM		1	U		1	U		0.78	J	P	0.94	J	P
ZINC		5.1			6.9			51.7			2.5		

PROJ_NO: 01813	NSAMPLE	MW03-02S-NWG-092914			MW03-04S-NWG-093014			MW03-05S-NWG-100114			MW03-15I-NWG-092914		
SDG: N1822	LAB_ID	N1822-03A			N1822-08A			N1822-17A			N1822-05A		
FRACTION: MF	SAMP_DATE	9/29/2014			9/30/2014			10/1/2014			9/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		8.6	U	A	16.7	U	A	11.5	U	A	9.6	U	A
ANTIMONY		0.29	J	P	0.22	J	P	0.2	U		0.2	U	
ARSENIC		0.38	U		0.38	U		0.38	U		0.21	U	A
BARIUM		8.4	U	A	8.7	U	A	6.2	U	A	18.7		
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.3	U	A
CADMIUM		0.15	U		2.3			0.43	J	P	0.15	U	
CALCIUM		4670			3850			3440			8380		
CHROMIUM		0.94	J	P	1.1	J	P	0.94	J	P	1	J	P
COBALT		0.033	U	A	0.051	U	A	0.025	U	A	17.2		
COPPER		1.1	U	A	0.99	U	A	0.74	U	A	1.1	U	A
IRON		20	U		20	U		20	U		6350	J	D
LEAD		0.15	U		0.098	U	A	0.077	U	A	0.15	U	
MAGNESIUM		745			869			706			2830		
MANGANESE		3.7			14.5			5.4			147		
MERCURY		0.05	UJ	E	0.05	UJ	E	0.05	UJ	E	0.05	UJ	E
NICKEL		0.9	U	A	0.94	U	A	10.6			25.5		
POTASSIUM		1940			1540			697			1540		
SELENIUM		0.23	J	P	0.25	U		0.25	U		0.25	U	
SILVER		0.52	U	A	0.29	U	A	0.17	U	A	0.37	U	A
SODIUM		3940			5470			3990			22200		
THALLIUM		0.075	U		0.075	U		0.075	U		0.076	U	A
VANADIUM		1	U		1	U		0.64	J	P	1	U	
ZINC		1.4	J	P	1.8	J	P	5			48.8		

PROJ_NO: 01813	NSAMPLE	MW03-15S-NWG-100114			MW03-16S-NWG-100614			MW03-17I-NWG-100214			MW03-17S-NWG-093014		
SDG: N1822	LAB_ID	N1822-19A			N1822-38A			N1822-26A			N1822-12A		
FRACTION: MF	SAMP_DATE	10/1/2014			10/6/2014			10/2/2014			9/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		20.7	U	A	15.2	U	A	18.3	U	A	33.6		
ANTIMONY		0.2	U		0.2	U		0.2	U		0.2	U	
ARSENIC		0.38	U		0.38	U		0.38	U		0.38	U	
BARIUM		5.4	U	A	8.2	J	P	10.9			15.5		
BERYLLIUM		0.15	U		0.15	U		0.25	U	A	0.15	U	
CADMIUM		0.15	U		0.15	U		0.15	U		0.92	J	P
CALCIUM		3610			6790			7520			6820		
CHROMIUM		1.1	J	P	0.88	J	P	0.83	J	P	0.84	J	P
COBALT		0.66	U	A	0.051	U	A	11.4			7.2		
COPPER		1	U	A	1.2	J	P	0.74	J	P	2.5		
IRON		20	U		20	U		1490			45.1	U	A
LEAD		0.15	U		0.073	U	A	0.075	U	A	0.078	U	A
MAGNESIUM		1430			969			2420			2220		
MANGANESE		22.4			10.1			40			106		
MERCURY		0.05	UJ	E	0.05	U		0.05	U		0.05	UJ	E
NICKEL		4.6			1.8			20.3			10.7		
POTASSIUM		808			1160			1560			1510		
SELENIUM		0.25	U		0.25	U		0.25	U		0.25	U	
SILVER		0.15	U	A	0.053	U	A	0.095	U	A	0.21	U	A
SODIUM		7060			6430			19000			11400		
THALLIUM		0.075	U		0.075	U		0.07	U	A	0.083	U	A
VANADIUM		1	U		1	J	P	1	U		1	U	
ZINC		2.4			2			21.1			10.6		

PROJ_NO: 01813	NSAMPLE	RB01-100114			RB02-100814		
SDG: N1822	LAB_ID	N1822-15A			N1822-41A		
FRACTION: MF	SAMP_DATE	10/1/2014			10/8/2014		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3.6	U	A	6.8	U	
ANTIMONY		0.2	U		0.2	U	
ARSENIC		0.38	U		0.38	U	
BARIUM		1.7	J	P	2	U	
BERYLLIUM		0.15	U		0.15	U	
CADMIUM		0.23	J	P	0.094	J	P
CALCIUM		8440			38	U	
CHROMIUM		0.92	J	P	0.79	J	P
COBALT		0.094	J	P	0.05	U	
COPPER		0.38	U		0.38	U	
IRON		20	U		20	U	
LEAD		0.16	J	P	0.15	U	
MAGNESIUM		1280			12	U	
MANGANESE		1.5	J	P	1	U	
MERCURY		0.05	UJ	E	0.05	U	
NICKEL		0.21	J	P	0.25	U	
POTASSIUM		829			20	U	
SELENIUM		0.25	U		0.25	U	
SILVER		0.19	J	P	0.055	J	P
SODIUM		7570			50	U	
THALLIUM		0.075	U		0.075	U	
VANADIUM		1	U		1	U	
ZINC		1	J	P	1	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

FD01-093014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-09

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	37.6			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.21	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.6			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.12	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	6660			MS	24.0	38.0	500
7440-47-3	Chromium	1.0	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	7.3			MS	0.024	0.050	1.0
7440-50-8	Copper	1.9	B		MS	0.23	0.38	2.0
7439-89-6	Iron	52.5	B		MS	14.0	20.0	200
7439-92-1	Lead	0.11	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2240			MS	7.8	12.0	500
7439-96-5	Manganese	110			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	10.1			MS	0.17	0.25	1.0
7440-09-7	Potassium	1490			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.26	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	11400			MS	33.0	50.0	500
7440-28-0	Thallium	0.077	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.77	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	10.2		E	MS	0.73	1.0	2.0

Comments:

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1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

FD02-101014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-52

Level (low/med): MED Date Received: 10/10/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	37.0			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.20	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.47	B		MS	0.19	0.38	2.0
7440-39-3	Barium	3.5	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.12	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	12300			MS	24.0	38.0	500
7440-47-3	Chromium	2.8			MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.55	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.70	B		MS	0.23	0.38	2.0
7439-89-6	Iron	1050			MS	14.0	20.0	200
7439-92-1	Lead	0.13	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1410			MS	7.8	12.0	500
7439-96-5	Manganese	357			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.91	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1460			MS	14.0	20.0	500
7782-49-2	Selenium	0.22	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	7620			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	58.8			MS	0.73	1.0	2.0

Comments:

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1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-10S-NWG-100214

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-27

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	11.7	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.1	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	4380			MS	24.0	38.0	500
7440-47-3	Chromium	0.91	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.033	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1430			MS	7.8	12.0	500
7439-96-5	Manganese	3.9			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.25	U		MS	0.17	0.25	1.0
7440-09-7	Potassium	822			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.091	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6420			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1	U		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-12S-NWG-100214

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-29

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	8.5	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.6	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.090	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	10600			MS	24.0	38.0	500
7440-47-3	Chromium	0.72	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.24	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.39	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1700			MS	7.8	12.0	500
7439-96-5	Manganese	1.4	B		MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.74	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1340			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.094	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	4090			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.4	B		MS	0.73	1.0	2.0

Comments:

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1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-14S-NWG-100914

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-47

Level (low/med): MED Date Received: 10/10/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	17.8	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	10.5			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.091	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	7810			MS	24.0	38.0	500
7440-47-3	Chromium	1.2	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.098	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2110			MS	7.8	12.0	500
7439-96-5	Manganese	4.4			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.6			MS	0.17	0.25	1.0
7440-09-7	Potassium	1590			MS	14.0	20.0	500
7782-49-2	Selenium	0.37	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.040	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	27000			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.5	B		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-03S-NWG-100314

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-32

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	202			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.24	B		MS	0.19	0.38	2.0
7440-39-3	Barium	16.2			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.17	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.19	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	34300			MS	24.0	38.0	500
7440-47-3	Chromium	1.0	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.56	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.72	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.12	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	5850			MS	7.8	12.0	500
7439-96-5	Manganese	18.3			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.90	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	2020			MS	14.0	20.0	500
7782-49-2	Selenium	0.41	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.078	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	11800			MS	33.0	50.0	500
7440-28-0	Thallium	0.11	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	5.6			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-05S-NWG-100214

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-23

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	38.2			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.41	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.0	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.080	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.16	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	7940			MS	24.0	38.0	500
7440-47-3	Chromium	1.3	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.19	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.28	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1830			MS	7.8	12.0	500
7439-96-5	Manganese	10.8			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.57	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	776			MS	14.0	20.0	500
7782-49-2	Selenium	0.20	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.14	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6470			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.2	B		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-08SA-NWG-100114

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-20

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	17.0	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	12.6			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.13	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	27300			MS	24.0	38.0	500
7440-47-3	Chromium	1.2	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	1.2			MS	0.024	0.050	1.0
7440-50-8	Copper	0.71	B		MS	0.23	0.38	2.0
7439-89-6	Iron	40.3	B		MS	14.0	20.0	200
7439-92-1	Lead	0.11	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2470			MS	7.8	12.0	500
7439-96-5	Manganese	6.5			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	2.6			MS	0.17	0.25	1.0
7440-09-7	Potassium	2410			MS	14.0	20.0	500
7782-49-2	Selenium	0.27	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.17	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5960			MS	33.0	50.0	500
7440-28-0	Thallium	0.053	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	2.7		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-09S-NWG-100814

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-42

Level (low/med): MED Date Received: 10/08/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	13.7	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2.9	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	3230			MS	24.0	38.0	500
7440-47-3	Chromium	0.93	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.05	U		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.11	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	814			MS	7.8	12.0	500
7439-96-5	Manganese	3.5			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.25	U		MS	0.17	0.25	1.0
7440-09-7	Potassium	697			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.048	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5830			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1	U		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-10S-NWG-101014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-50

Level (low/med): MED Date Received: 10/10/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	49.1			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.23	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.34	B		MS	0.19	0.38	2.0
7440-39-3	Barium	3.5	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.20	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	11900			MS	24.0	38.0	500
7440-47-3	Chromium	2.9			MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.54	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.81	B		MS	0.23	0.38	2.0
7439-89-6	Iron	1010			MS	14.0	20.0	200
7439-92-1	Lead	0.17	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1370			MS	7.8	12.0	500
7439-96-5	Manganese	332			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.93	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1400			MS	14.0	20.0	500
7782-49-2	Selenium	0.31	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.023	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	7370			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1.1	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	46.6			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-11S-NWG-100814

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-44

Level (low/med): MED Date Received: 10/08/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	80.1			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2.1	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.10	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	3610			MS	24.0	38.0	500
7440-47-3	Chromium	1.8	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.12	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.49	B		MS	0.23	0.38	2.0
7439-89-6	Iron	163	B		MS	14.0	20.0	200
7439-92-1	Lead	0.22	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1050			MS	7.8	12.0	500
7439-96-5	Manganese	8.0			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.77	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	614			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.053	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5580			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1	U		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-4SA-NWG-100614

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-35

Level (low/med): MED Date Received: 10/06/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	16.5	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2.0	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.10	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	5770			MS	24.0	38.0	500
7440-47-3	Chromium	1.6	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.042	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	14.5	B		MS	14.0	20.0	200
7439-92-1	Lead	0.090	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1420			MS	7.8	12.0	500
7439-96-5	Manganese	4.1			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.59	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	711			MS	14.0	20.0	500
7782-49-2	Selenium	0.15	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.074	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5900			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1.3	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	1	U		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-02S-NWG-092914

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-02

Level (low/med): MED Date Received: 09/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	9.8	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.37	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.5	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	4840			MS	24.0	38.0	500
7440-47-3	Chromium	1.4	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.029	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.24	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	771			MS	7.8	12.0	500
7439-96-5	Manganese	4.5			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.20	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1990			MS	14.0	20.0	500
7782-49-2	Selenium	0.21	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.61	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	4020			MS	33.0	50.0	500
7440-28-0	Thallium	0.093	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.65	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	0.82	B	E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-04S-NWG-093014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-07

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	79.0			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	9.0	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.10	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	3870			MS	24.0	38.0	500
7440-47-3	Chromium	1.4	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.065	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.33	B		MS	0.23	0.38	2.0
7439-89-6	Iron	98.3	B		MS	14.0	20.0	200
7439-92-1	Lead	0.22	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	886			MS	7.8	12.0	500
7439-96-5	Manganese	15.5			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.27	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1530			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.30	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5460			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.2	B	E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-05S-NWG-100114

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-16

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	24.2			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	7.1	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.49	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	3710			MS	24.0	38.0	500
7440-47-3	Chromium	0.90	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.030	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.24	B		MS	0.23	0.38	2.0
7439-89-6	Iron	31.6	B		MS	14.0	20.0	200
7439-92-1	Lead	0.088	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	760			MS	7.8	12.0	500
7439-96-5	Manganese	6.2			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	12.5			MS	0.17	0.25	1.0
7440-09-7	Potassium	747			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.19	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	4250			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	3.9		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-15I-NWG-092914

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-04

Level (low/med): MED Date Received: 09/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	88.2			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.53	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	18.0			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.34	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.29	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	8290			MS	24.0	38.0	500
7440-47-3	Chromium	1.4	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	16.7			MS	0.024	0.050	1.0
7440-50-8	Copper	0.68	B		MS	0.23	0.38	2.0
7439-89-6	Iron	6030			MS	14.0	20.0	200
7439-92-1	Lead	0.15	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2810			MS	7.8	12.0	500
7439-96-5	Manganese	134			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	25.3			MS	0.17	0.25	1.0
7440-09-7	Potassium	1530			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.48	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	22300			MS	33.0	50.0	500
7440-28-0	Thallium	0.076	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	48.0		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-15S-NWG-100114

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-18

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	23.3			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.2	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.70	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	3490			MS	24.0	38.0	500
7440-47-3	Chromium	0.98	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.64	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.46	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1390			MS	7.8	12.0	500
7439-96-5	Manganese	21.7			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	3.9			MS	0.17	0.25	1.0
7440-09-7	Potassium	772			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.16	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6830			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.84	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	2.5		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-16S-NWG-100614

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-37

Level (low/med): MED Date Received: 10/06/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	17.8	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.6	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	7140			MS	24.0	38.0	500
7440-47-3	Chromium	0.97	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.034	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1010			MS	7.8	12.0	500
7439-96-5	Manganese	10.6			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.95	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1200			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.052	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6690			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.84	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.2	B		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-17I-NWG-100214

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-25

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	21.0			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.22	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.27	B		MS	0.19	0.38	2.0
7440-39-3	Barium	10.8			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.27	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	7390			MS	24.0	38.0	500
7440-47-3	Chromium	1.2	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	11.4			MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	1500			MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2380			MS	7.8	12.0	500
7439-96-5	Manganese	40.3			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	19.7			MS	0.17	0.25	1.0
7440-09-7	Potassium	1510			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.11	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	18600			MS	33.0	50.0	500
7440-28-0	Thallium	0.072	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.63	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	22.1			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-17S-NWG-093014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-11

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	37.4			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.5			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.14	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	6780			MS	24.0	38.0	500
7440-47-3	Chromium	0.81	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	7.3			MS	0.024	0.050	1.0
7440-50-8	Copper	1.5	B		MS	0.23	0.38	2.0
7439-89-6	Iron	51.9	B		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2240			MS	7.8	12.0	500
7439-96-5	Manganese	110			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	10.5			MS	0.17	0.25	1.0
7440-09-7	Potassium	1480			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.23	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	11300			MS	33.0	50.0	500
7440-28-0	Thallium	0.089	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	11.2		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

RB01-100114

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-14

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	6.8	U		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	1.4	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.10	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	8380			MS	24.0	38.0	500
7440-47-3	Chromium	0.90	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.083	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.32	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.097	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1270			MS	7.8	12.0	500
7439-96-5	Manganese	0.95	B		MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.25	U		MS	0.17	0.25	1.0
7440-09-7	Potassium	819			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.19	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	7490			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1	U	E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

RB02-100814

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-40

Level (low/med): MED Date Received: 10/08/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	6.8	U		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2	U		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.56	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	38	U		MS	24.0	38.0	500
7440-47-3	Chromium	1.2	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.05	U		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	12	U		MS	7.8	12.0	500
7439-96-5	Manganese	1	U		MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.25	U		MS	0.17	0.25	1.0
7440-09-7	Potassium	20	U		MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.047	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	50	U		MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.62	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	1	U		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

FD01-093014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-10

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	35.0			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.21	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.8			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.13	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	6840			MS	24.0	38.0	500
7440-47-3	Chromium	0.94	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	7.4			MS	0.024	0.050	1.0
7440-50-8	Copper	3.1			MS	0.23	0.38	2.0
7439-89-6	Iron	46.7	B		MS	14.0	20.0	200
7439-92-1	Lead	0.075	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2280			MS	7.8	12.0	500
7439-96-5	Manganese	107			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	11.0			MS	0.17	0.25	1.0
7440-09-7	Potassium	1550			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.25	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	11700			MS	33.0	50.0	500
7440-28-0	Thallium	0.077	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1.0	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	14.2		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

FD02-101014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-53

Level (low/med): MED Date Received: 10/10/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	3.3	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	3.6	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.12	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	11200			MS	24.0	38.0	500
7440-47-3	Chromium	0.82	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.64	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.58	B		MS	0.23	0.38	2.0
7439-89-6	Iron	1530			MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1500			MS	7.8	12.0	500
7439-96-5	Manganese	491			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.8			MS	0.17	0.25	1.0
7440-09-7	Potassium	1530			MS	14.0	20.0	500
7782-49-2	Selenium	0.26	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	7870			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	49.7			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-10S-NWG-100214-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-28

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	11.2	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.0	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	4330			MS	24.0	38.0	500
7440-47-3	Chromium	0.83	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.048	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.72	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1400			MS	7.8	12.0	500
7439-96-5	Manganese	4.2			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.83	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	831			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.091	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6330			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.6	B		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-12S-NWG-100214-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-30

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	6.7	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.6	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	10200			MS	24.0	38.0	500
7440-47-3	Chromium	0.88	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.23	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.1	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1640			MS	7.8	12.0	500
7439-96-5	Manganese	2.6			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.3			MS	0.17	0.25	1.0
7440-09-7	Potassium	1330			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.090	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	4000			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	2.0	B		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-14S-NWG-100914-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-48

Level (low/med): MED Date Received: 10/10/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	19.3	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	10.1			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.088	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	7480			MS	24.0	38.0	500
7440-47-3	Chromium	0.89	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.078	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.58	B		MS	0.23	0.38	2.0
7439-89-6	Iron	150	B		MS	14.0	20.0	200
7439-92-1	Lead	0.22	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2030			MS	7.8	12.0	500
7439-96-5	Manganese	14.4			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.4			MS	0.17	0.25	1.0
7440-09-7	Potassium	1540			MS	14.0	20.0	500
7782-49-2	Selenium	0.36	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.034	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	25900			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.4	B		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-03S-NWG-100314-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-33

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	184			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.6			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.16	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.19	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	32800			MS	24.0	38.0	500
7440-47-3	Chromium	1.0	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.51	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.7	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.17	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	5650			MS	7.8	12.0	500
7439-96-5	Manganese	17.5			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.4			MS	0.17	0.25	1.0
7440-09-7	Potassium	1970			MS	14.0	20.0	500
7782-49-2	Selenium	0.34	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.070	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	11200			MS	33.0	50.0	500
7440-28-0	Thallium	0.10	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	6.0			MS	0.73	1.0	2.0

Comments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-05S-NWG-100214-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-24

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	34.0			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.28	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.2	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.078	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.18	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	7920			MS	24.0	38.0	500
7440-47-3	Chromium	1.3	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.17	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.6	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.23	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1830			MS	7.8	12.0	500
7439-96-5	Manganese	12.1			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	5.3			MS	0.17	0.25	1.0
7440-09-7	Potassium	801			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.11	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6570			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	8.0			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-08SA-NWG-100114-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-21

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	4.4	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	11.0			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.13	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	28300			MS	24.0	38.0	500
7440-47-3	Chromium	1.0	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	1.3			MS	0.024	0.050	1.0
7440-50-8	Copper	2.2			MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2570			MS	7.8	12.0	500
7439-96-5	Manganese	6.8			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	3.3			MS	0.17	0.25	1.0
7440-09-7	Potassium	2530			MS	14.0	20.0	500
7782-49-2	Selenium	0.29	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.11	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6260			MS	33.0	50.0	500
7440-28-0	Thallium	0.054	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	5.1		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-09S-NWG-100814-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-43

Level (low/med): MED Date Received: 10/08/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	14.2	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	3.0	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.54	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	3100			MS	24.0	38.0	500
7440-47-3	Chromium	1.1	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.027	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.2	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	2.7			MS	0.068	0.15	1.0
7439-95-4	Magnesium	784			MS	7.8	12.0	500
7439-96-5	Manganese	3.3			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	3.6			MS	0.17	0.25	1.0
7440-09-7	Potassium	708			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.049	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5650			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	6.9			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-10S-NWG-101014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-51

Level (low/med): MED Date Received: 10/10/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	3.6	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.19	B		MS	0.19	0.38	2.0
7440-39-3	Barium	3.6	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.13	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	11200			MS	24.0	38.0	500
7440-47-3	Chromium	0.87	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.63	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.27	B		MS	0.23	0.38	2.0
7439-89-6	Iron	1580			MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1500			MS	7.8	12.0	500
7439-96-5	Manganese	501			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.2			MS	0.17	0.25	1.0
7440-09-7	Potassium	1520			MS	14.0	20.0	500
7782-49-2	Selenium	0.31	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	7870			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.78	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	51.7			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-11S-NWG-100814-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-45

Level (low/med): MED Date Received: 10/08/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	13.4	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2.0	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.14	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	3620			MS	24.0	38.0	500
7440-47-3	Chromium	1.3	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.038	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.93	B		MS	0.23	0.38	2.0
7439-89-6	Iron	180	B		MS	14.0	20.0	200
7439-92-1	Lead	0.55	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1030			MS	7.8	12.0	500
7439-96-5	Manganese	5.2			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.3			MS	0.17	0.25	1.0
7440-09-7	Potassium	626			MS	14.0	20.0	500
7782-49-2	Selenium	0.27	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.043	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5570			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.94	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	2.5			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-4SA-NWG-100614-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-36

Level (low/med): MED Date Received: 10/06/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	6.0	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2.0	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.088	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	5650			MS	24.0	38.0	500
7440-47-3	Chromium	1.4	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.049	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.87	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1380			MS	7.8	12.0	500
7439-96-5	Manganese	3.9			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.0			MS	0.17	0.25	1.0
7440-09-7	Potassium	716			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.061	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5780			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.64	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.5	B		MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-02S-NWG-092914-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-03

Level (low/med): MED Date Received: 09/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	8.6	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.29	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.4	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	4670			MS	24.0	38.0	500
7440-47-3	Chromium	0.94	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.033	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.1	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	745			MS	7.8	12.0	500
7439-96-5	Manganese	3.7			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.90	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1940			MS	14.0	20.0	500
7782-49-2	Selenium	0.23	B		MS	0.15	0.25	5.0
7440-22-4	Silver	0.52	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	3940			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.4	B	E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-4S-NWG-093014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-08

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	16.7	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.22	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.7	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	2.3			MS	0.084	0.15	1.0
7440-70-2	Calcium	3850			MS	24.0	38.0	500
7440-47-3	Chromium	1.1	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.051	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.99	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.098	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	869			MS	7.8	12.0	500
7439-96-5	Manganese	14.5			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.94	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1540			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.29	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	5470			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.8	B	E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-05S-NWG-100114-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-17

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	11.5	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	6.2	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.43	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	3440			MS	24.0	38.0	500
7440-47-3	Chromium	0.94	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.025	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.74	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.077	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	706			MS	7.8	12.0	500
7439-96-5	Manganese	5.4			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	10.6			MS	0.17	0.25	1.0
7440-09-7	Potassium	697			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.17	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	3990			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.64	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	5.0		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-15I-NWG-092914-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-05

Level (low/med): MED Date Received: 09/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	9.6	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.21	B		MS	0.19	0.38	2.0
7440-39-3	Barium	18.7			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.30	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	8380			MS	24.0	38.0	500
7440-47-3	Chromium	1.0	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	17.2			MS	0.024	0.050	1.0
7440-50-8	Copper	1.1	B		MS	0.23	0.38	2.0
7439-89-6	Iron	6350			MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2830			MS	7.8	12.0	500
7439-96-5	Manganese	147			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	25.5			MS	0.17	0.25	1.0
7440-09-7	Potassium	1540			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.37	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	22200			MS	33.0	50.0	500
7440-28-0	Thallium	0.076	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	48.8		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-15S-NWG-100114-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-19

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	20.7			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.4	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	3610			MS	24.0	38.0	500
7440-47-3	Chromium	1.1	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.66	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.0	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1430			MS	7.8	12.0	500
7439-96-5	Manganese	22.4			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	4.6			MS	0.17	0.25	1.0
7440-09-7	Potassium	808			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.15	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	7060			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	2.4		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-16S-NWG-100614-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-38

Level (low/med): MED Date Received: 10/06/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	15.2	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.2	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	6790			MS	24.0	38.0	500
7440-47-3	Chromium	0.88	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.051	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.2	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.073	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	969			MS	7.8	12.0	500
7439-96-5	Manganese	10.1			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.8			MS	0.17	0.25	1.0
7440-09-7	Potassium	1160			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.053	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	6430			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1.0	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	2.0			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-17I-NWG-100214-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-26

Level (low/med): MED Date Received: 10/03/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	18.3	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	10.9			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.25	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	7520			MS	24.0	38.0	500
7440-47-3	Chromium	0.83	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	11.4			MS	0.024	0.050	1.0
7440-50-8	Copper	0.74	B		MS	0.23	0.38	2.0
7439-89-6	Iron	1490			MS	14.0	20.0	200
7439-92-1	Lead	0.075	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2420			MS	7.8	12.0	500
7439-96-5	Manganese	40.0			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	20.3			MS	0.17	0.25	1.0
7440-09-7	Potassium	1560			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.095	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	19000			MS	33.0	50.0	500
7440-28-0	Thallium	0.070	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	21.1			MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-17S-NWG-093014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-12

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	33.6			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.5			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.92	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	6820			MS	24.0	38.0	500
7440-47-3	Chromium	0.84	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	7.2			MS	0.024	0.050	1.0
7440-50-8	Copper	2.5			MS	0.23	0.38	2.0
7439-89-6	Iron	45.1	B		MS	14.0	20.0	200
7439-92-1	Lead	0.078	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2220			MS	7.8	12.0	500
7439-96-5	Manganese	106			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	10.7			MS	0.17	0.25	1.0
7440-09-7	Potassium	1510			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.21	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	11400			MS	33.0	50.0	500
7440-28-0	Thallium	0.083	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	10.6		E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

RB01-100114-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-15

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	3.6	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	1.7	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.23	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	8440			MS	24.0	38.0	500
7440-47-3	Chromium	0.92	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.094	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.16	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1280			MS	7.8	12.0	500
7439-96-5	Manganese	1.5	B		MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.21	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	829			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.19	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	7570			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1.0	B	E	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

RB02-100814-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-41

Level (low/med): MED Date Received: 10/08/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	6.8	U		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.2	U		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2	U		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.094	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	38	U		MS	24.0	38.0	500
7440-47-3	Chromium	0.79	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.05	U		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.15	U		MS	0.068	0.15	1.0
7439-95-4	Magnesium	12	U		MS	7.8	12.0	500
7439-96-5	Manganese	1	U		MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.25	U		MS	0.17	0.25	1.0
7440-09-7	Potassium	20	U		MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.055	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	50	U		MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	1	U		MS	0.73	1.0	2.0

Comments:

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: NCBC Davisville SDG: N1822

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters: Metals

Missing Information	Date Lab Contacted	Date Received

Validator: Ann Cognetti Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-I
Case: NCBC Davisville SDG: N1822

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	
		See data validation report									

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: Tetra Tech Contacted: Y (N) Date: _____

Validator: Ann Cognetti Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-II
Case: NCBC Davisville SDG: N1822

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments: See data validation report

Validator: Ann Cognetti Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: NCBC Davisville SDG: N18ZZ

III. CALIBRATIONS

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: See data validation report

EPA-NE - Data Validation Worksheet
INORG-III-A/B
Case: NCBC Davisville SDG: N1822

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: See data validation report

Validator: Ann Coquette Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: NCBC Davisville SDG: N1822

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample.

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

See data validation report

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: Ann Cognetta Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-IV-A/B
Case: NCBC Davisville SDG: N1822

IV. BLANKS - List the blank contamination and negative blank results below.

Sampler: _____ Company: Tetra Tech Contacted: Y (N) Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: See data validation report

Validator: Ann Cognetti Date: 11/18/14

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: NCBC Davisville SDG: N1822
IV. BLANKS **C.1 Blank Contamination Worksheet**

Circle or list the highest concentration of each contaminant.

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

See data validation report

Validator: Ann Cognetta Date: 11/13/14

EPA NE - Data Validation Worksheet
INORG-V-A
Case: NCBC Davisville SDG: N1822

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		

Comments: See data validation report

Validator: Ann Cognetta Date: 11/13/14

2/13

EPA NE - Data Validation Worksheet
INORG-V-B
Case: NCBC Davisville SDG: N1822

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		

Comments: See data validation report

Validator: Ann Cognetti Date: 11/13/14

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: NCBC Davisville SDG: NIBZZ

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments: See data validation report												

Validator: Ann Cognetti Date: 11/13/14

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: NCBC Davisville SDG: NB22

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		

Comments: See data validation report

Validator: Ann Cognetti Date: 11/13/17

EPA-NE - Data Validation Worksheet
INORG-VII
Case: NCBC Davisville SDG: N1822

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria.

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: Ann Cognetti Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: NCBC Davisville SDG: NB22

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action
Comments:	See data validation report							

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: Ann Cognetta Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-IX
Case: NCBC Davisville SDG: N1822

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments: See data validation report

Validator: Ann Cognetti Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-X
Case: MCBC Dawsonville SDG: N1822

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: See data validation report

Sampler Name:_____ Contractor Name:_____ Date Contacted:_____

Reason for contact and resolution obtained:_____

Validator: Ann Cognetta Date: 11/13/14

2/13

EPA-NE - Data Validation Worksheet
INORG-XI
Case: NCBC Davisville SDG: N1822

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action

Comments: See data validation report

Validator: Ann Cognetti Date: 11/13/14

EPA-NE - Data Validation Worksheet
INORG-XII
Case: NCBC Davisville SDG: N1822

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:
See data validation report

Validator: Ann Cognetta Date: 11/13/14

2/13

EPA-NE - Data Validation Worksheet

INORG-XIII

Case: NCBC Davisville SDG: N1822

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: Ann Cognetti Date: 11/13/19

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: NCBC Davisville SDG: N1822

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? _____
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		See data validation report
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: Ann Coquette Date: 1/13/19

APPENDIX D

SUPPORT DOCUMENTATION

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1822

SW846 6020A, SW846 7470A

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test codes: SW846 6020A, SW846 7470A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: 200.7
Aqueous Samples were prepared following procedures in laboratory test code: SW7470A

V. INSTRUMENTATION

The following instrumentation was used:

Instrument Code: FIMS2
Instrument Type: CVAA
Description: FIMS
Manufacturer: Perkin-Elmer
Model: FIMS100

Instrument Code: X1
Instrument Type: ICPMS
Description: X1
Manufacturer: ThermoFisher
Model: X-Series 2

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits with the following exceptions.

LCS-79326 in batch 79326, recovery is below criteria for Mercury at 63% with criteria of (80-120). This batch (79326) was approved by the supervisor and lab director due to additional batch QC that passed criteria. There were distilled Matrix Spikes (2) and ICV/CCVs within this batch. In addition several samples from this batch did not have sufficient remaining volume to re-distill. Per DOD QSM D1.1.2.1 (c) this is acceptable corrective action.

2. Matrix spike (MS):

Matrix spikes were performed on samples: MW01-14S-NWG-100914 (N1822-47AMS), MW01-14S-NWG-100914-F (N1822-48AMS), MW03-15I-NWG-092914 (N1822-04CMS) and MW03-15I-NWG-092914-F (N1822-05AMS).

Percent recoveries were within the QC limits.

D. Post Digestion Spike (PDS):

A post-digestion spike was not performed on any sample in this SDG.

E. Duplicate sample:

Duplicate analyses were performed on samples: MW01-14S-NWG-100914 (N1822-47ADUP), MW01-14S-NWG-100914-F (N1822-48ADUP), MW03-15I-NWG-092914 (N1822-04CDUP) and MW03-15I-NWG-092914-F (N1822-05ADUP).

Relative percent differences were within the QC limits.

F. Serial Dilution (SD):

Serial Dilution analyses were performed on samples: MW01-14S-NWG-100914 (N1822-47ASD), MW01-14S-NWG-100914-F (N1822-48ASD), MW03-15I-NWG-092914 (N1822-04CSD) and MW03-15I-NWG-092914-F (N1822-05ASD).

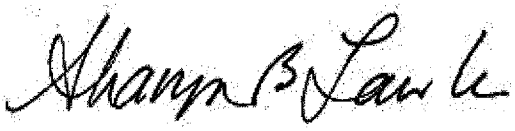
Percent differences were within the QC limits with the exception of the following:

MW03-15I-NWG-092914 (N1822-04CSD), Serial Dilution analysis not within control limit for Zinc.

G. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed: 

Date: 10/29/2014

U.S.EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 11

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

SOW No.: SW846

EPA Sample No.	Lab Sample ID
FD01-093014	N1822-09
FD01-093014-F	N1822-10
FD02-101014	N1822-52
FD02-101014-F	N1822-53
MW01-10S-NWG-100214	N1822-27
MW01-10S-NWG-100214-F	N1822-28
MW01-12S-NWG-100214	N1822-29
MW01-12S-NWG-100214-F	N1822-30
MW01-14S-NWG-100914	N1822-47
MW01-14S-NWG-100914-F	N1822-48
MW01-14S-NWG-100914-FD	N1822-48DUP
MW01-14S-NWG-100914-FS	N1822-48MS
MW01-14S-NWG-100914D	N1822-47DUP
MW01-14S-NWG-100914S	N1822-47MS
MW02-03S-NWG-100314	N1822-32
MW02-03S-NWG-100314-F	N1822-33
MW02-05S-NWG-100214	N1822-23
MW02-05S-NWG-100214-F	N1822-24
MW02-08SA-NWG-100114	N1822-20
MW02-08SA-NWG-100114-F	N1822-21
MW02-09S-NWG-100814	N1822-42
MW02-09S-NWG-100814-F	N1822-43
MW02-10S-NWG-101014	N1822-50
MW02-10S-NWG-101014-F	N1822-51
MW02-11S-NWG-100814	N1822-44
MW02-11S-NWG-100814-F	N1822-45

Were ICP interelement corrections applied? Yes/No Yes

Were background corrections applied? Yes/No Yes

If yes-were raw data generated before application of background corrections? Yes/No No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature Sharyn B Lawler

Signature: Name: Sharyn B. Lawler

Date: 10/29/14 Title: QAD

U.S.EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 11

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

SOW No.: SW846

EPA Sample No.	Lab Sample ID
MW02-4SA-NWG-100614	N1822-35
MW02-4SA-NWG-100614-F	N1822-36
MW03-02S-NWG-092914	N1822-02
MW03-02S-NWG-092914-F	N1822-03
MW03-04S-NWG-093014	N1822-07
MW03-05S-NWG-100114	N1822-16
MW03-05S-NWG-100114-F	N1822-17
MW03-15I-NWG-092914	N1822-04
MW03-15I-NWG-092914-F	N1822-05
MW03-15I-NWG-092914-FD	N1822-05DUP
MW03-15I-NWG-092914-FS	N1822-05MS
MW03-15I-NWG-092914D	N1822-04DUP
MW03-15I-NWG-092914S	N1822-04MS
MW03-15S-NWG-100114	N1822-18
MW03-15S-NWG-100114-F	N1822-19
MW03-16S-NWG-100614	N1822-37
MW03-16S-NWG-100614-F	N1822-38
MW03-17I-NWG-100214	N1822-25
MW03-17I-NWG-100214-F	N1822-26
MW03-17S-NWG-093014	N1822-11
MW03-17S-NWG-093014-F	N1822-12
MW03-4S-NWG-093014-F	N1822-08
RB01-100114	N1822-14
RB01-100114-F	N1822-15
RB02-100814	N1822-40
RB02-100814-F	N1822-41

Were ICP interelement corrections applied? Yes/No Yes

Were background corrections applied? Yes/No Yes

If yes-were raw data generated before application of background corrections? Yes/No No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Sharyn B Lawler Name: Sharyn B. Lawler

Date: 10/29/2014 Title: QAD

Report Date:
30-Oct-14 12:11

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1822
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1822-01	TB01-092914	Aqueous	29-Sep-14 10:00	30-Sep-14 07:38
N1822-02	MW03-02S-NWG-092914	Aqueous	29-Sep-14 13:40	30-Sep-14 07:38
N1822-03	MW03-02S-NWG-092914-F	Aqueous	29-Sep-14 13:40	30-Sep-14 07:38
N1822-04	MW03-15I-NWG-092914	Aqueous	29-Sep-14 14:07	30-Sep-14 07:38
N1822-05	MW03-15I-NWG-092914-F	Aqueous	29-Sep-14 14:07	30-Sep-14 07:38
N1822-06	TB02-093014	Aqueous	30-Sep-14 09:00	01-Oct-14 07:15
N1822-07	MW03-04S-NWG-093014	Aqueous	30-Sep-14 11:23	01-Oct-14 07:15
N1822-08	MW03-4S-NWG-093014-F	Aqueous	30-Sep-14 11:23	01-Oct-14 07:15
N1822-09	FD01-093014	Aqueous	30-Sep-14 00:00	01-Oct-14 07:15
N1822-10	FD01-093014-F	Aqueous	30-Sep-14 00:00	01-Oct-14 07:15
N1822-11	MW03-17S-NWG-093014	Aqueous	30-Sep-14 12:30	01-Oct-14 07:15
N1822-12	MW03-17S-NWG-093014-F	Aqueous	30-Sep-14 12:30	01-Oct-14 07:15
N1822-13	TB03-10014	Aqueous	01-Oct-14 08:00	01-Oct-14 16:54
N1822-14	RB01-100114	Aqueous	01-Oct-14 08:30	30-Sep-14 07:38
N1822-14	RB01-100114	Aqueous	01-Oct-14 08:30	01-Oct-14 16:54
N1822-15	RB01-100114-F	Aqueous	01-Oct-14 08:30	01-Oct-14 16:54
N1822-16	MW03-05S-NWG-100114	Aqueous	01-Oct-14 10:56	01-Oct-14 16:54
N1822-17	MW03-05S-NWG-100114-F	Aqueous	01-Oct-14 10:56	01-Oct-14 16:54
N1822-18	MW03-15S-NWG-100114	Aqueous	01-Oct-14 12:30	01-Oct-14 16:54
N1822-19	MW03-15S-NWG-100114-F	Aqueous	01-Oct-14 12:30	01-Oct-14 16:54
N1822-20	MW02-08SA-NWG-100114	Aqueous	01-Oct-14 14:33	01-Oct-14 16:54
N1822-21	MW02-08SA-NWG-100114-F	Aqueous	01-Oct-14 14:33	01-Oct-14 16:54
N1822-22	TB04-100214	Aqueous	02-Oct-14 08:00	03-Oct-14 07:30
N1822-23	MW02-05S-NWG-100214	Aqueous	02-Oct-14 11:28	03-Oct-14 07:30
N1822-24	MW02-05S-NWG-100214-F	Aqueous	02-Oct-14 11:28	03-Oct-14 07:30
N1822-25	MW03-17I-NWG-100214	Aqueous	02-Oct-14 11:48	03-Oct-14 07:30
N1822-26	MW03-17I-NWG-100214-F	Aqueous	02-Oct-14 11:48	03-Oct-14 07:30
N1822-27	MW01-10S-NWG-100214	Aqueous	02-Oct-14 14:55	03-Oct-14 07:30
N1822-28	MW01-10S-NWG-100214-F	Aqueous	02-Oct-14 14:55	03-Oct-14 07:30
N1822-29	MW01-12S-NWG-100214	Aqueous	02-Oct-14 15:21	03-Oct-14 07:30
N1822-30	MW01-12S-NWG-100214-F	Aqueous	02-Oct-14 15:21	03-Oct-14 07:30
N1822-31	TB05-100314	Aqueous	03-Oct-14 08:00	03-Oct-14 13:06
N1822-32	MW02-03S-NWG-100314	Aqueous	03-Oct-14 10:50	03-Oct-14 13:06
N1822-33	MW02-03S-NWG-100314-F	Aqueous	03-Oct-14 10:50	03-Oct-14 13:06
N1822-34	TB06-100614	Aqueous	06-Oct-14 09:00	06-Oct-14 16:30
N1822-35	MW02-4SA-NWG-100614	Aqueous	06-Oct-14 13:03	06-Oct-14 16:30
N1822-36	MW02-4SA-NWG-100614-F	Aqueous	06-Oct-14 13:03	06-Oct-14 16:30
N1822-37	MW03-16S-NWG-100614	Aqueous	06-Oct-14 14:05	06-Oct-14 16:30
N1822-38	MW03-16S-NWG-100614-F	Aqueous	06-Oct-14 14:05	06-Oct-14 16:30
N1822-39	TB07-100714	Aqueous	07-Oct-14 08:30	08-Oct-14 16:50
N1822-40	RB02-100814	Aqueous	08-Oct-14 09:00	08-Oct-14 16:50
N1822-41	RB02-100814-F	Aqueous	08-Oct-14 09:00	08-Oct-14 16:50
N1822-42	MW02-09S-NWG-100814	Aqueous	08-Oct-14 09:57	08-Oct-14 16:50
N1822-43	MW02-09S-NWG-100814-F	Aqueous	08-Oct-14 09:57	08-Oct-14 16:50
N1822-44	MW02-11S-NWG-100814	Aqueous	08-Oct-14 13:57	08-Oct-14 16:50
N1822-45	MW02-11S-NWG-100814-F	Aqueous	08-Oct-14 13:57	08-Oct-14 16:50
N1822-46	TB08-100914	Aqueous	09-Oct-14 08:30	10-Oct-14 07:22
N1822-47	MW01-14S-NWG-100914	Aqueous	09-Oct-14 11:05	10-Oct-14 07:22

Report Date:
30-Oct-14 12:11

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1822
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1822-48	MW01-14S-NWG-100914-F	Aqueous	09-Oct-14 11:05	10-Oct-14 07:22
N1822-49	TB09-101014	Aqueous	10-Oct-14 08:00	10-Oct-14 14:00
N1822-50	MW02-10S-NWG-101014	Aqueous	10-Oct-14 09:50	10-Oct-14 14:00
N1822-51	MW02-10S-NWG-101014-F	Aqueous	10-Oct-14 09:50	10-Oct-14 14:00
N1822-52	FD02-101014	Aqueous	10-Oct-14 00:00	10-Oct-14 14:00
N1822-53	FD02-101014-F	Aqueous	10-Oct-14 00:00	10-Oct-14 14:00

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

N1822

SPECTRUM ANALYTICAL, INC.
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Page 1 of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson / Lee Ann Sirvagoga
601 Anderson Dr } Tetra Tech Inc.
Pittsburgh PA 15220 }
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 (000.2123 WE01 (ny 124)
Site Name: Fmr NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Jalkut W. Ryan

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 – – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

N1822 G=Grab C=Composite

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC	TPH-GRO	TPH-DRO	NAPHTHALENE	METALS	SVOC; PESTICIDE, PCBs	
01	TB01-092914	9/29	1000	G	QC	4	–	–	–	2	2	–	–	–	–	
02	MW03-02S-NWG-092914	9/29	1340	G	GW	4	4	–	1	2	2	2	2	1	80 #129	
03	MW03-02S-NWG-092914-F	9/29	1340	G	GW	–	–	–	1	–	–	–	–	1	–	
04	MW03-15I-NWG-092914	9/29	1407	G	GW	12	15	–	2	6	6	6	–	2	9	
05	MW03-15I-NWG-092914-F	9/29	1407	G	GW	–	–	–	2	–	–	–	–	2	–	

"F"= field filtered
Lab QC volume
Lab QC volume
Refer to lab subcontract

K Jalkut 9/29/14

Notes - Samples designated w/the "F" were filtered in the field

Relinquished by:	Received by:	Date:	Time	Temp°C
Walter Ryan		9.30.14	0800	4.3C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

www.spectrum-analytical.com IR 1 3.5°C 3.0°C Revised Feb 2013

Page 13 of 2280

N1822

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
Tetra Tech Inc
661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O

P.O. No.: _____ RQN: _____

Project No.: 112G01813
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Jalkut W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 – – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

N1822 G=Grab C=Composite

Lab Id:	Sample Id:	Date: 2014	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs	GRO (TPH)	DRO (TPH)	NAPHTHALENE	METALS	SVOC, PESTICIDES, PCBs
06	TB02-093014	9/30	0900	~~EG~~	QC	4	–	–	–	2	2	–	–	–	–
07	MW03-04S-NW6-093014	9/30	1123	G	GW	4	2	–	1	2	2	2	2	1	–
08	MW03-04S-NW6-093014-F	9/30	~~1230~~ 1133	G	GW	–	–	–	1					1	
09	FD01-093014	9/30	0000	G	GW	4	5	–	1	2	2	2	–	1	3
10	FD01-093014-F	9/30	0000	G	GW	–	–	–	1	–	–	–	–	1	–
11	MW03-17S-NW6-093014	9/30	1230	G	GW	4	5	–	1	2	2	2	–	1	3
12	MW03-17S-NW6-093014-F	9/30	1230	G	GW	–	–	–	1	–	–	–	–	1	–

Note: "-F" denotes sample was filtered in the field

Relinquished by:	Received by:	Date:	Time:	Temp°C
Nate		10-1-14	0715	3.9.30

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Refer to laboratory report

Page 14 of 2280

N1822

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive
Agawam, MA 01001
(413) 789-9018

☐ 8405 Benjamin Road, Ste A
Tampa, FL 33634
(813) 888-9507

☐ 646 Camp Avenue
N Kingstown, RI 02852
(401) 732-3400

Special Handling:

TAT- Indicate Date Needed: Stnd

- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
40 Tetra Tech Inc
6611 Andersen Dr
Pittsburgh PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Talkot W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 – 4 – –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

N1822

Lab Id:	Sample Id:	Date: 2014	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs	GRO (TPH) MTBE-NAPH.	DRO (TPH) C9 to C40	METALS	NAPHTHALENE	SVOC PESTICIDE 1268
13	TB03-100114	10/1	0800	G	QC	4	–	–	–	2	2	–	–	–	–
14	RB01-100114	10/1	0830	G	QC	4	5		1	2	2	2	1	–	3
15	RB01-100114-F	10/1	0830	G	QC	–	–	–	1	–	–	–	1	–	–
16	MW03-05S-NWG-100114	10/1	1056	G	GW	4	4	–	1	2	2	2	1	2	–
17	MW03-05S-NWG-100114-F	10/1	1056	G	GW	–	–	–	1	–	–	–	1	–	–
18	MW03-15S-NWG-100114	10/1	~~1433~~ 1230	G	GW	4	5	–	1	2	2	2	1	–	3
19	MW03-15S-NWG-100114-F	10/1	~~1433~~ 1230	G	GW	–	–	–	1	–	–	–	1	–	–
20	MW02-08Sa-NWG-100114	10/1	1433	G	GW	4	4	–	1	2	2	2	1	2	–
	Note - "-F" indicates sample was filtered in the field								0						
21	MW02-08Sa-NWG-100114-F	10/1	1433	G	GW	–	–	–	1	–	–	–	1	–	–

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Ref to Labs Subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt R		10-1-14	1654	3.3°C IR
				2.1°C IR

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☑ Present ☑ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1822

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc.
Colol Anderson Dr
Pittsburgh PA
Telephone #: (412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pyne, C. Fellows-Stanley

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 2 - - 4 - - -

QA/QC Reporting Notes: Refer to lab (subcontract)

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

N1822

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOC	TPH-GRO (C5-C12)	TPH-DRO (C9-C40)	NAPHTHALENE	METALS	SUSP. PESTICIDES PCBs
22	TB04-100214	10/2	0800	G	QC	4	1	-	1	2	2	1	-	1	-
23	MW02-05S-NW6-100214	10/2	1128	G	GW	4	4	-	1	2	2	2	2	1	-
24	MW03-05S-NW6-100214-F	10/2	1128	G	GW	-	-	-	1	-	-	-	-	1	-
25	MW03-17I-NW6-100214	10/2	1148	G	GW	4	5	-	1	2	2	2	-	1	3
26	MW03-17I-NW6-100214-F	10/2	1148	G	GW	-	-	-	1	-	-	-	-	1	-
27	MW01-10S-NW6-100214	10/2	1455	G	GW	4	4	-	1	2	2	2	2	1	-
28	MW01-10S-NW6-100214-F	10/2	1455	G	GW	-	-	-	1	-	-	-	-	1	-
29	MW01-12S-NW6-100214	10/2	1521	G	GW	4	4	-	1	2	2	2	2	1	-
30	MW01-12S-NW6-100214-F	10/2	1521	G	GW	-	-	-	1	-	-	-	-	1	-
	Note- "-F" denotes sample was filtered in the field								9						

KJ subcont 10/2/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10-3-14	7:30	3.2°
				2.0°c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Page 16 of 2280

N1822

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc
661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 2 2 – 4 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1822

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOC, TPH GRO (MTBE-NAPHTH.)	VOC	TPH GRO (MTBE-NAPHTH.)	TPH DRO (C9-C40)	METALS	NAPHTHALENE
31	TB05-100314	10/3	0800	G	QC	3	–	–	–	3	–	–	–	–	–
32	MW02-03S-NWG-100314	10/3	1050	G	GW	4	4	–	1	–	2	2	2	1	2
33	MW02-03S-NWG-100314-F	10/3	1050	G	GW	–	–	–	1	–	–	–	–	1	–

Analyses:

Refer to data addendum #1

Pjwalsh 10/3/14

Note: "F" denotes the sample was filtered in the field

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walter Pryor		10-3-14	~~1245~~ 13:06	4.2°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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N1822

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

N1822 G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 2 2 2 – – 4 –	Analyses: VOCs, TPH-GRO (MTBE-NAPH.)	VOCs	GRO (TPH) (MTBE-NAPH.)	DRO (TPH) (C9-C40)	NAPHTHALENE	METALS	SVOCs, PESTICIDES, PCBs
34	TB06-100614	10/6	0900	G	QC	3	–	–	–		3	–	–	–	–	–	–
35	MW02-45a-NWG-100614	10/6	1303	G	GW	4	4	1	1		1	2	2	2	2	1	–
36	MW02-45a-NWG-100614-F	10/6	1303	G	GW	–	–	–	1		–	–	–	–	–	1	–
37	MW03-16S-NWG-100614	10/6	1405	G	GW	4	5	–	1		–	2	2	2	–	1	3
38	MW03-16S-NWG-100614-F	10/6	1405	G	GW	–	–	–	1		–	–	–	–	–	1	–

Note: "-F" indicates the sample was filtered in the field

K Jalkut 10/6/14

QA/QC Reporting Notes: Refer to lab subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kaylee Jalkut / Kaylee Jalkut		10/6/14	1630	3.8°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

FR

N1822

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson (TetraTech)
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 920 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor, K Talkut

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOCs, TPH-GRO	VOCs	GRO (MTBE-NAPHTHALENE) TPH-DRO	NAPHTHALENE	METALS	SVOCs, PESTICIDES, PCBs
						List preservative code below: 2	2	2	-	-	4	-			
39	TB07-100714	10/7	0830	G	QC	3	-	-	-	3	-	-	-	-	-
40	RB02-100814	10/8	0900	G	QC	4	4	-	1	-	2	2	2	2	1	-
41	RB02-100814-F	10/8	0900	G	QC	-	-	-	1	-	-	-	-	-	1	-
42	MW02-09S-NW6-100814	10/8	0957	G	GW	4	4	-	1	-	2	2	2	2	1	1
43	MW02-09S-NW6-100814-F	10/8	0957	G	GW	-	-	-	1	-	-	-	-	-	1	-
44	MW02-11S-NW6-100814	10/8	1357	G	GW	4	4	-	1	-	2	2	2	2	1	-
45	MW02-11S-NW6-100814-F	10/8	1357	G	GW	-	-	-	1	-	-	-	-	-	1	-

Note - "-F" denotes the sample was filtered in the field

QA/QC Reporting Notes: Report to lab subcontract

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp °C
Walt		10-8-14	16:50	3.3c, 4.1c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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N1822

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

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☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/O Tetra Tech Inc
6161 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): C Fellows - Stanley K Jalkut W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs, GRO (MTBE-NAPH.)	VOCs	TPH, GRO (MTBE-NAPHTHALENE)	TPH DRO	NAPHTHALENE	METALS			List preservative code below: 2 2 2 - - -	QA/QC Reporting Notes:
NF822		2014																	
46	TB08-100914	10/9	0830	G	QC	3	-	-	-	3	1	-	-	-	1				
47	MW01-145-NWG-100914	10/9	1105	G	GW	12	12	-	2	-	6	6	6	6	2				Lab QC volume
48	MW01-145-NWG-100914-F	10/9	1105	G	GW	-	-	-	2	-	~~6~~	~~6~~	-	-	2				Lab QC volume
	MW01																		

K Jalkut 10/9/14

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
		10/10/14	7:22	3.8, 3.7

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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JC

Revised Feb 2013

N1822

SPECTRUM ANALYTICAL, INC.
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Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
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☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Stnd
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
6601 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 (WEOJ
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor, K. Jalkut

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 2 – – 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to lab subcontract

N1822 G=Grab C=Composite

	Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC, GRO (MTBE-NAPH.)	VOC	GRO(TPH)-MTBE-NAPHTHALENE	DRO(TPH)(C9-C40)	NAPHTHALENE	METALS
~~N1904~~			2014													
	WSL 10/16/14															
49	C1	T1309-101014	10/10/14	0800	G	QC	3	–	–	–	3	–	–	–	–	–
50	C2	MW02-10S-NWG-101014	10/10/14	0950	G	GW	4	4	–	1		2	2	2	2	1
51	C3	MW02-10S-NWG-101014-F	10/10/14	0950	G	GW	–	–	–	1	–	–	–	–	–	1
52	C4	FD02-101014	10/10/14	0000	G	GW	4	4	–	1		2	2	2	2	1
53	C5	~~FB~~ FD02-101014-F	10/10/14	0000	G	GW	–	–	–	1	–	–	–	–	–	1
	WSL 10/16/14															

K Jalkut 10/10/14

Note - "-F" indicates sample was filtered in the field

Relinquished by:	Received by:	Date:	Time:	Temp°C
		10-10-14	1400	0.9°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 09/30/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / (Absent)
   (Intact) / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — (Present) / Absent
4. Airbill — AirBill / Sticker Present / (Absent)
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / (Absent)
   Sample Tag Numbers — Listed / (Not Listed on Chain-of-Custody)
7. Sample Condition — (Intact) / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / (Absent)
9. Cooler Temperature: 4.3 °C, 3.0°C 3.5°C
10. Does information on TR/COCs and sample tags agree? — (Yes) / No
11. Date Received at Laboratory: 09/30/2014
12. Time Received: 09:07

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-01						H	
N1822-02	<2					H	
N1822-03	<2					H	
N1822-04	<2					H	
N1822-05	<2					H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form — Yes / (No)

Rad OK (Yes) / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 10/01/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.9 °C 3.0°C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/01/2014
12. Time Received	07:15

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-07						H	
N1822-08	<2					H	
N1822-09	<2					H	
N1822-10	<2					H	
N1822-11	<2					H	
N1822-12	<2					H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By:	Page 01 of 00
Reviewed By:	Log-in Date 10/01/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers
   Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	3.3 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/01/2014
12. Time Received	16:54

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-13						H	
N1822-14	<2					H	
N1822-15	<2					H	
N1822-16	<2					H	
N1822-17	<2					H	
N1822-18	<2					H	
N1822-19	<2					H	
N1822-20	<2					H	
N1822-21	<2					H	

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form — Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/03/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	3.2 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/03/2014
12. Time Received	07:30

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-22						H	
N1822-23	<2					H	
N1822-24	<2						
N1822-25	<2					H	
N1822-26	<2						
N1822-27	<2					H	
N1822-28	<2						
N1822-29	<2					H	
N1822-30	<2						

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJK	Page 01 of 00
Reviewed By: KP	Log-in Date 10/03/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker; Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent
9. Cooler Temperature: 4.2 °C
10. Does information on TR/COCs and sample tags agree? Yes / No
11. Date Received at Laboratory: 10/03/2014
12. Time Received: 13:06

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-31						H	
N1822-32	<2					H	
N1822-33	<2						

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 10/06/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	3.8 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/06/2014
12. Time Received	16:30

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-34						H	
N1822-35	<2					H	
N1822-36	<2					H	
N1822-37	<2					H	
N1822-38	<2					H	

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/08/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	4.1 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/08/2014
12. Time Received	16:50

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-39						H	
N1822-40	<2					H	
N1822-41	<2						
N1822-42	<2					H	
N1822-43	<2						
N1822-44	<2					H	
N1822-45	<2						

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/10/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.8 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/10/2014
12. Time Received	07:22

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-46						H	
N1822-47	<2					H	
N1822-48	<2						

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/10/2014
Work Order: N1822	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	0.4 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/10/2014
12. Time Received	14:00

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1822-49						H	
N1822-50	<2					H	
N1822-51	<2						
N1822-52	<2					H	
N1822-53	<2						

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

HOLDTIME

SDG N1822

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	MG/L	MW03-16S-NWG-100614	N1822-37B	NM	10/06/2014	10/10/2014	10/21/2014	4	11	15
	MG/L	FD01-093014	N1822-09B	NM	09/30/2014	10/06/2014	10/21/2014	6	15	21
	MG/L	RB02-100814	N1822-40C	NM	10/08/2014	10/10/2014	10/21/2014	2	11	13
	MG/L	RB01-100114	N1822-14C	NM	10/01/2014	10/06/2014	10/21/2014	5	15	20
	MG/L	MW03-17I-NWG-100214	N1822-25C	NM	10/02/2014	10/06/2014	10/21/2014	4	15	19
	MG/L	MW03-15S-NWG-100114	N1822-18C	NM	10/01/2014	10/06/2014	10/21/2014	5	15	20
	MG/L	MW03-15I-NWG-092914	N1822-04B	NM	09/29/2014	10/06/2014	10/21/2014	7	15	22
	MG/L	MW03-05S-NWG-100114	N1822-16C	NM	10/01/2014	10/06/2014	10/21/2014	5	15	20
	MG/L	MW03-04S-NWG-093014	N1822-07B	NM	09/30/2014	10/06/2014	10/21/2014	6	15	21
	MG/L	MW03-02S-NWG-092914	N1822-02B	NM	09/29/2014	10/06/2014	10/21/2014	7	15	22
	MG/L	MW02-4SA-NWG-100614	N1822-35B	NM	10/06/2014	10/10/2014	10/21/2014	4	11	15
	MG/L	MW01-14S-NWG-100914	N1822-47C	NM	10/09/2014	10/10/2014	10/21/2014	1	11	12
	MG/L	MW03-17S-NWG-093014	N1822-11B	NM	09/30/2014	10/06/2014	10/21/2014	6	15	21
	MG/L	MW02-11S-NWG-100814	N1822-44C	NM	10/08/2014	10/10/2014	10/21/2014	2	11	13
	MG/L	MW01-10S-NWG-100214	N1822-27C	NM	10/02/2014	10/06/2014	10/21/2014	4	15	19

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	MG/L	MW01-12S-NWG-100214	N1822-29C	NM	10/02/2014	10/06/2014	10/21/2014	4	15	19
	MG/L	FD02-101014	N1822-52C	NM	10/10/2014	10/17/2014	10/20/2014	7	3	10
	MG/L	MW02-03S-NWG-100314	N1822-32C	NM	10/03/2014	10/06/2014	10/21/2014	3	15	18
	MG/L	MW02-05S-NWG-100214	N1822-23C	NM	10/02/2014	10/06/2014	10/21/2014	4	15	19
	MG/L	MW02-08SA-NWG-10011	N1822-20C	NM	10/01/2014	10/06/2014	10/21/2014	5	15	20
	MG/L	MW02-09S-NWG-100814	N1822-42C	NM	10/08/2014	10/10/2014	10/21/2014	2	11	13
	MG/L	MW02-10S-NWG-101014	N1822-50C	NM	10/10/2014	10/17/2014	10/20/2014	7	3	10
	UG/L	MW03-17I-NWG-100214	N1822-25B	NM	10/02/2014	10/10/2014	10/10/2014	8	0	8
	UG/L	TB02-093014	N1822-06A	NM	09/30/2014	10/08/2014	10/08/2014	8	0	8
	UG/L	RB01-100114	N1822-14B	NM	10/01/2014	10/10/2014	10/10/2014	9	0	9
	UG/L	RB02-100814	N1822-40B	NM	10/08/2014	10/14/2014	10/14/2014	6	0	6
	UG/L	TB01-092914	N1822-01A	NM	09/29/2014	10/08/2014	10/08/2014	9	0	9
	UG/L	MW03-17S-NWG-093014	N1822-11A	NM	09/30/2014	10/08/2014	10/08/2014	8	0	8
	UG/L	TB03-10014	N1822-13A	NM	10/01/2014	10/10/2014	10/10/2014	9	0	9
	UG/L	TB04-100214	N1822-22A	NM	10/02/2014	10/10/2014	10/10/2014	8	0	8
	UG/L	TB05-100314	N1822-31A	NM	10/03/2014	10/14/2014	10/14/2014	11	0	11
	UG/L	TB06-100614	N1822-34A	NM	10/06/2014	10/14/2014	10/14/2014	8	0	8
	UG/L	TB08-100914	N1822-46A	NM	10/09/2014	10/14/2014	10/14/2014	5	0	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/L	MW03-15S-NWG-100114	N1822-18B	NM	10/01/2014	10/10/2014	10/10/2014	9	0	9
	UG/L	MW03-15I-NWG-092914	N1822-04A	NM	09/29/2014	10/08/2014	10/08/2014	9	0	9
	UG/L	TB07-100714	N1822-39A	NM	10/07/2014	10/14/2014	10/14/2014	7	0	7
	UG/L	MW01-12S-NWG-100214	N1822-29B	NM	10/02/2014	10/10/2014	10/10/2014	8	0	8
	UG/L	MW03-16S-NWG-100614	N1822-37A	NM	10/06/2014	10/14/2014	10/14/2014	8	0	8
	UG/L	TB09-101014	N1822-49A	NM	10/10/2014	10/21/2014	10/21/2014	11	0	11
	UG/L	FD01-093014	N1822-09A	NM	09/30/2014	10/08/2014	10/08/2014	8	0	8
	UG/L	MW01-10S-NWG-100214	N1822-27B	NM	10/02/2014	10/10/2014	10/10/2014	8	0	8
	UG/L	MW01-14S-NWG-100914	N1822-47B	NM	10/09/2014	10/14/2014	10/14/2014	5	0	5
	UG/L	MW02-05S-NWG-100214	N1822-23B	NM	10/02/2014	10/10/2014	10/10/2014	8	0	8
	UG/L	MW02-08SA-NWG-10011	N1822-20B	NM	10/01/2014	10/10/2014	10/10/2014	9	0	9
	UG/L	MW03-04S-NWG-093014	N1822-07A	NM	09/30/2014	10/08/2014	10/08/2014	8	0	8
	UG/L	MW02-10S-NWG-101014	N1822-50B	NM	10/10/2014	10/21/2014	10/21/2014	11	0	11
	UG/L	MW02-11S-NWG-100814	N1822-44B	NM	10/08/2014	10/14/2014	10/14/2014	6	0	6
	UG/L	MW02-4SA-NWG-100614	N1822-35A	NM	10/06/2014	10/14/2014	10/14/2014	8	0	8
	UG/L	MW03-02S-NWG-092914	N1822-02A	NM	09/29/2014	10/08/2014	10/08/2014	9	0	9
	UG/L	MW02-09S-NWG-100814	N1822-42B	NM	10/08/2014	10/14/2014	10/14/2014	6	0	6
	UG/L	FD02-101014	N1822-52B	NM	10/10/2014	10/21/2014	10/21/2014	11	0	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/L	MW03-05S-NWG-100114	N1822-16B	NM	10/01/2014	10/10/2014	10/10/2014	9	0	9
HG	UG/L	MW03-15S-NWG-100114	N1822-18A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	MW03-15I-NWG-092914-	N1822-05A	NM	09/29/2014	10/02/2014	10/03/2014	3	1	4
HG	UG/L	MW03-15I-NWG-092914	N1822-04C	NM	09/29/2014	10/02/2014	10/03/2014	3	1	4
HG	UG/L	MW03-05S-NWG-100114-	N1822-17A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	MW03-05S-NWG-100114	N1822-16A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	MW03-04S-NWG-093014	N1822-07C	NM	09/30/2014	10/02/2014	10/03/2014	2	1	3
HG	UG/L	MW03-02S-NWG-092914-	N1822-03A	NM	09/29/2014	10/02/2014	10/03/2014	3	1	4
HG	UG/L	MW03-02S-NWG-092914	N1822-02C	NM	09/29/2014	10/02/2014	10/03/2014	3	1	4
HG	UG/L	MW03-15S-NWG-100114-	N1822-19A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	RB01-100114-F	N1822-15A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	MW02-4SA-NWG-100614-	N1822-36A	NM	10/06/2014	10/23/2014	10/24/2014	17	1	18
HG	UG/L	MW03-16S-NWG-100614	N1822-37C	NM	10/06/2014	10/23/2014	10/24/2014	17	1	18
HG	UG/L	MW03-16S-NWG-100614-	N1822-38A	NM	10/06/2014	10/23/2014	10/24/2014	17	1	18
HG	UG/L	MW03-17I-NWG-100214	N1822-25A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22
HG	UG/L	MW03-17I-NWG-100214-	N1822-26A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22
HG	UG/L	MW03-17S-NWG-093014	N1822-11C	NM	09/30/2014	10/02/2014	10/03/2014	2	1	3
HG	UG/L	MW03-17S-NWG-093014-	N1822-12A	NM	09/30/2014	10/02/2014	10/03/2014	2	1	3

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	UG/L	RB01-100114	N1822-14A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	RB02-100814	N1822-40A	NM	10/08/2014	10/23/2014	10/24/2014	15	1	16
HG	UG/L	RB02-100814-F	N1822-41A	NM	10/08/2014	10/23/2014	10/24/2014	15	1	16
HG	UG/L	MW02-4SA-NWG-100614	N1822-35C	NM	10/06/2014	10/23/2014	10/24/2014	17	1	18
HG	UG/L	MW03-4S-NWG-093014-F	N1822-08A	NM	09/30/2014	10/02/2014	10/03/2014	2	1	3
HG	UG/L	MW01-12S-NWG-100214-	N1822-30A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22
HG	UG/L	FD01-093014	N1822-09C	NM	09/30/2014	10/02/2014	10/03/2014	2	1	3
HG	UG/L	FD02-101014	N1822-52A	NM	10/10/2014	10/23/2014	10/24/2014	13	1	14
HG	UG/L	FD02-101014-F	N1822-53A	NM	10/10/2014	10/23/2014	10/24/2014	13	1	14
HG	UG/L	MW01-10S-NWG-100214	N1822-27A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22
HG	UG/L	FD01-093014-F	N1822-10A	NM	09/30/2014	10/02/2014	10/03/2014	2	1	3
HG	UG/L	MW01-12S-NWG-100214	N1822-29A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22
HG	UG/L	MW02-11S-NWG-100814-	N1822-45A	NM	10/08/2014	10/23/2014	10/24/2014	15	1	16
HG	UG/L	MW01-14S-NWG-100914	N1822-47A	NM	10/09/2014	10/23/2014	10/24/2014	14	1	15
HG	UG/L	MW01-14S-NWG-100914-	N1822-48A	NM	10/09/2014	10/23/2014	10/24/2014	14	1	15
HG	UG/L	MW02-03S-NWG-100314	N1822-32A	NM	10/03/2014	10/23/2014	10/24/2014	20	1	21
HG	UG/L	MW02-11S-NWG-100814	N1822-44A	NM	10/08/2014	10/23/2014	10/24/2014	15	1	16
HG	UG/L	MW02-05S-NWG-100214	N1822-23A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	UG/L	MW02-05S-NWG-100214-	N1822-24A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22
HG	UG/L	MW02-08SA-NWG-10011	N1822-20A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	MW02-08SA-NWG-10011	N1822-21A	NM	10/01/2014	10/02/2014	10/03/2014	1	1	2
HG	UG/L	MW02-09S-NWG-100814	N1822-42A	NM	10/08/2014	10/23/2014	10/24/2014	15	1	16
HG	UG/L	MW02-09S-NWG-100814-	N1822-43A	NM	10/08/2014	10/23/2014	10/24/2014	15	1	16
HG	UG/L	MW02-10S-NWG-101014	N1822-50A	NM	10/10/2014	10/23/2014	10/24/2014	13	1	14
HG	UG/L	MW02-10S-NWG-101014-	N1822-51A	NM	10/10/2014	10/23/2014	10/24/2014	13	1	14
HG	UG/L	MW02-03S-NWG-100314-	N1822-33A	NM	10/03/2014	10/23/2014	10/24/2014	20	1	21
HG	UG/L	MW01-10S-NWG-100214-	N1822-28A	NM	10/02/2014	10/23/2014	10/24/2014	21	1	22
M	UG/L	MW01-12S-NWG-100214-	N1822-30A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	MW01-12S-NWG-100214	N1822-29A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	MW01-10S-NWG-100214-	N1822-28A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	MW01-10S-NWG-100214	N1822-27A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	FD02-101014-F	N1822-53A	NM	10/10/2014	10/24/2014	10/24/2014	14	0	14
M	UG/L	FD02-101014	N1822-52A	NM	10/10/2014	10/24/2014	10/24/2014	14	0	14
M	UG/L	FD01-093014-F	N1822-10A	NM	09/30/2014	10/23/2014	10/24/2014	23	1	24
M	UG/L	MW02-03S-NWG-100314	N1822-32A	NM	10/03/2014	10/24/2014	10/24/2014	21	0	21
M	UG/L	FD01-093014	N1822-09C	NM	09/30/2014	10/23/2014	10/24/2014	23	1	24

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	UG/L	MW03-17I-NWG-100214-	N1822-26A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	MW03-05S-NWG-100114-	N1822-17A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	MW03-15I-NWG-092914	N1822-04C	NM	09/29/2014	10/23/2014	10/24/2014	24	1	25
M	UG/L	MW03-15I-NWG-092914-	N1822-05A	NM	09/29/2014	10/23/2014	10/24/2014	24	1	25
M	UG/L	MW03-15S-NWG-100114	N1822-18A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	MW03-15S-NWG-100114-	N1822-19A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	MW03-16S-NWG-100614	N1822-37C	NM	10/06/2014	10/24/2014	10/24/2014	18	0	18
M	UG/L	MW03-05S-NWG-100114	N1822-16A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	MW03-17I-NWG-100214	N1822-25A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	MW03-17S-NWG-093014	N1822-11C	NM	09/30/2014	10/23/2014	10/24/2014	23	1	24
M	UG/L	MW03-17S-NWG-093014-	N1822-12A	NM	09/30/2014	10/23/2014	10/24/2014	23	1	24
M	UG/L	RB01-100114	N1822-14A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	RB01-100114-F	N1822-15A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	RB02-100814	N1822-40A	NM	10/08/2014	10/24/2014	10/24/2014	16	0	16
M	UG/L	RB02-100814-F	N1822-41A	NM	10/08/2014	10/24/2014	10/24/2014	16	0	16
M	UG/L	MW01-14S-NWG-100914-	N1822-48A	NM	10/09/2014	10/24/2014	10/24/2014	15	0	15
M	UG/L	MW01-14S-NWG-100914	N1822-47A	NM	10/09/2014	10/24/2014	10/24/2014	15	0	15
M	UG/L	MW03-16S-NWG-100614-	N1822-38A	NM	10/06/2014	10/24/2014	10/24/2014	18	0	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	UG/L	MW02-09S-NWG-100814-	N1822-43A	NM	10/08/2014	10/24/2014	10/24/2014	16	0	16
M	UG/L	MW03-04S-NWG-093014	N1822-07C	NM	09/30/2014	10/23/2014	10/24/2014	23	1	24
M	UG/L	MW02-05S-NWG-100214	N1822-23A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	MW02-05S-NWG-100214-	N1822-24A	NM	10/02/2014	10/24/2014	10/24/2014	22	0	22
M	UG/L	MW02-08SA-NWG-10011	N1822-20A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	MW02-08SA-NWG-10011	N1822-21A	NM	10/01/2014	10/23/2014	10/24/2014	22	1	23
M	UG/L	MW03-4S-NWG-093014-F	N1822-08A	NM	09/30/2014	10/23/2014	10/24/2014	23	1	24
M	UG/L	MW02-03S-NWG-100314-	N1822-33A	NM	10/03/2014	10/24/2014	10/24/2014	21	0	21
M	UG/L	MW02-10S-NWG-101014	N1822-50A	NM	10/10/2014	10/24/2014	10/24/2014	14	0	14
M	UG/L	MW02-10S-NWG-101014-	N1822-51A	NM	10/10/2014	10/24/2014	10/24/2014	14	0	14
M	UG/L	MW02-11S-NWG-100814	N1822-44A	NM	10/08/2014	10/24/2014	10/24/2014	16	0	16
M	UG/L	MW02-11S-NWG-100814-	N1822-45A	NM	10/08/2014	10/24/2014	10/24/2014	16	0	16
M	UG/L	MW02-4SA-NWG-100614	N1822-35C	NM	10/06/2014	10/24/2014	10/24/2014	18	0	18
M	UG/L	MW02-4SA-NWG-100614-	N1822-36A	NM	10/06/2014	10/24/2014	10/24/2014	18	0	18
M	UG/L	MW03-02S-NWG-092914	N1822-02C	NM	09/29/2014	10/23/2014	10/24/2014	24	1	25
M	UG/L	MW03-02S-NWG-092914-	N1822-03A	NM	09/29/2014	10/23/2014	10/24/2014	24	1	25
M	UG/L	MW02-09S-NWG-100814	N1822-42A	NM	10/08/2014	10/24/2014	10/24/2014	16	0	16
OS	UG/L	MW03-15I-NWG-092914	N1822-04B	NM	09/29/2014	10/06/2014	10/24/2014	7	18	25

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/L	RB01-100114	N1822-14C	NM	10/01/2014	10/06/2014	10/24/2014	5	18	23
OS	UG/L	MW03-17S-NWG-093014	N1822-11B	NM	09/30/2014	10/06/2014	10/27/2014	6	21	27
OS	UG/L	MW03-17I-NWG-100214	N1822-25C	NM	10/02/2014	10/06/2014	10/27/2014	4	21	25
OS	UG/L	MW03-02S-NWG-092914	N1822-02B	NM	09/29/2014	10/06/2014	10/24/2014	7	18	25
OS	UG/L	FD01-093014	N1822-09B	NM	09/30/2014	10/06/2014	10/24/2014	6	18	24
OS	UG/L	MW03-15S-NWG-100114	N1822-18C	NM	10/01/2014	10/06/2014	10/24/2014	5	18	23
OS	UG/L	MW03-16S-NWG-100614	N1822-37B	NM	10/06/2014	10/11/2014	10/24/2014	5	13	18
OV	UG/L	TB04-100214	N1822-22A	NM	10/02/2014	10/08/2014	10/09/2014	6	1	7
OV	UG/L	MW03-17I-NWG-100214	N1822-25B	NM	10/02/2014	10/08/2014	10/09/2014	6	1	7
OV	UG/L	MW03-17S-NWG-093014	N1822-11A	NM	09/30/2014	10/08/2014	10/09/2014	8	1	9
OV	UG/L	TB09-101014	N1822-49A	NM	10/10/2014	10/17/2014	10/17/2014	7	0	7
OV	UG/L	RB01-100114	N1822-14B	NM	10/01/2014	10/08/2014	10/09/2014	7	1	8
OV	UG/L	MW02-11S-NWG-100814	N1822-44B	NM	10/08/2014	10/17/2014	10/17/2014	9	0	9
OV	UG/L	RB02-100814	N1822-40B	NM	10/08/2014	10/17/2014	10/17/2014	9	0	9
OV	UG/L	TB01-092914	N1822-01A	NM	09/29/2014	10/08/2014	10/09/2014	9	1	10
OV	UG/L	TB03-10014	N1822-13A	NM	10/01/2014	10/08/2014	10/09/2014	7	1	8
OV	UG/L	TB05-100314	N1822-31A	NM	10/03/2014	10/14/2014	10/14/2014	11	0	11
OV	UG/L	TB06-100614	N1822-34A	NM	10/06/2014	10/14/2014	10/14/2014	8	0	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/L	TB07-100714	N1822-39A	NM	10/07/2014	10/17/2014	10/17/2014	10	0	10
OV	UG/L	TB08-100914	N1822-46A	NM	10/09/2014	10/17/2014	10/17/2014	8	0	8
OV	UG/L	MW03-16S-NWG-100614	N1822-37A	NM	10/06/2014	10/17/2014	10/17/2014	11	0	11
OV	UG/L	TB02-093014	N1822-06A	NM	09/30/2014	10/08/2014	10/09/2014	8	1	9
OV	UG/L	MW01-12S-NWG-100214	N1822-29B	NM	10/02/2014	10/09/2014	10/09/2014	7	0	7
OV	UG/L	MW03-02S-NWG-092914	N1822-02A	NM	09/29/2014	10/08/2014	10/09/2014	9	1	10
OV	UG/L	FD01-093014	N1822-09A	NM	09/30/2014	10/08/2014	10/09/2014	8	1	9
OV	UG/L	MW03-15S-NWG-100114	N1822-18B	NM	10/01/2014	10/08/2014	10/09/2014	7	1	8
OV	UG/L	MW01-10S-NWG-100214	N1822-27B	NM	10/02/2014	10/09/2014	10/09/2014	7	0	7
OV	UG/L	MW01-14S-NWG-100914	N1822-47B	NM	10/09/2014	10/17/2014	10/17/2014	8	0	8
OV	UG/L	MW02-05S-NWG-100214	N1822-23B	NM	10/02/2014	10/08/2014	10/09/2014	6	1	7
OV	UG/L	MW02-09S-NWG-100814	N1822-42B	NM	10/08/2014	10/17/2014	10/17/2014	9	0	9
OV	UG/L	MW02-10S-NWG-101014	N1822-50B	NM	10/10/2014	10/17/2014	10/17/2014	7	0	7
OV	UG/L	MW02-4SA-NWG-100614	N1822-35A	NM	10/06/2014	10/17/2014	10/17/2014	11	0	11
OV	UG/L	MW03-04S-NWG-093014	N1822-07A	NM	09/30/2014	10/08/2014	10/09/2014	8	1	9
OV	UG/L	MW03-05S-NWG-100114	N1822-16B	NM	10/01/2014	10/08/2014	10/09/2014	7	1	8
OV	UG/L	MW02-08SA-NWG-10011	N1822-20B	NM	10/01/2014	10/08/2014	10/09/2014	7	1	8
OV	UG/L	MW03-15I-NWG-092914	N1822-04A	NM	09/29/2014	10/08/2014	10/09/2014	9	1	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/L	FD02-101014	N1822-52B	NM	10/10/2014	10/17/2014	10/17/2014	7	0	7
SIM	UG/L	FD02-101014	N1822-52C	NM	10/10/2014	10/17/2014	10/23/2014	7	6	13
SIM	UG/L	RB01-100114	N1822-14C	NM	10/01/2014	10/06/2014	10/23/2014	5	17	22
SIM	UG/L	MW03-15I-NWG-092914	N1822-04B	NM	09/29/2014	10/06/2014	10/23/2014	7	17	24
SIM	UG/L	MW03-05S-NWG-100114	N1822-16C	NM	10/01/2014	10/06/2014	10/23/2014	5	17	22
SIM	UG/L	MW03-04S-NWG-093014	N1822-07B	NM	09/30/2014	10/06/2014	10/23/2014	6	17	23
SIM	UG/L	MW02-4SA-NWG-100614	N1822-35B	NM	10/06/2014	10/11/2014	10/24/2014	5	13	18
SIM	UG/L	MW02-10S-NWG-101014	N1822-50C	NM	10/10/2014	10/17/2014	10/23/2014	7	6	13
SIM	UG/L	MW03-02S-NWG-092914	N1822-02B	NM	09/29/2014	10/06/2014	10/23/2014	7	17	24
SIM	UG/L	MW01-12S-NWG-100214	N1822-29C	NM	10/02/2014	10/06/2014	10/23/2014	4	17	21
SIM	UG/L	MW02-11S-NWG-100814	N1822-44C	NM	10/08/2014	10/15/2014	10/24/2014	7	9	16
SIM	UG/L	MW01-14S-NWG-100914	N1822-47C	NM	10/09/2014	10/15/2014	10/23/2014	6	8	14
SIM	UG/L	MW02-03S-NWG-100314	N1822-32C	NM	10/03/2014	10/06/2014	10/23/2014	3	17	20
SIM	UG/L	MW02-05S-NWG-100214	N1822-23C	NM	10/02/2014	10/06/2014	10/23/2014	4	17	21
SIM	UG/L	MW01-10S-NWG-100214	N1822-27C	NM	10/02/2014	10/06/2014	10/23/2014	4	17	21
SIM	UG/L	MW02-09S-NWG-100814	N1822-42C	NM	10/08/2014	10/15/2014	10/23/2014	7	8	15
SIM	UG/L	RB02-100814	N1822-40C	NM	10/08/2014	10/15/2014	10/23/2014	7	8	15
SIM	UG/L	MW02-08SA-NWG-10011	N1822-20C	NM	10/01/2014	10/06/2014	10/23/2014	5	17	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	UG/L	MW03-16S-NWG-100614	N1822-37B	NM	10/06/2014	10/08/2014	10/28/2014	2	20	22
PCB	UG/L	RB01-100114	N1822-14C	NM	10/01/2014	10/08/2014	10/28/2014	7	20	27
PCB	UG/L	MW03-17I-NWG-100214	N1822-25C	NM	10/02/2014	10/08/2014	10/28/2014	6	20	26
PCB	UG/L	MW03-15S-NWG-100114	N1822-18C	NM	10/01/2014	10/08/2014	10/28/2014	7	20	27
PCB	UG/L	MW03-15I-NWG-092914	N1822-04B	NM	09/29/2014	10/01/2014	10/20/2014	2	19	21
PCB	UG/L	MW03-02S-NWG-092914	N1822-02B	NM	09/29/2014	10/01/2014	10/20/2014	2	19	21
PCB	UG/L	FD01-093014	N1822-09B	NM	09/30/2014	10/01/2014	10/20/2014	1	19	20
PCB	UG/L	MW03-17S-NWG-093014	N1822-11B	NM	09/30/2014	10/01/2014	10/20/2014	1	19	20
PEST	UG/L	FD01-093014	N1822-09B	NM	09/30/2014	10/01/2014	10/20/2014	1	19	20
PEST	UG/L	RB01-100114	N1822-14C	NM	10/01/2014	10/08/2014	10/21/2014	7	13	20
PEST	UG/L	MW03-17S-NWG-093014	N1822-11B	NM	09/30/2014	10/01/2014	10/20/2014	1	19	20
PEST	UG/L	MW03-17I-NWG-100214	N1822-25C	NM	10/02/2014	10/08/2014	10/21/2014	6	13	19
PEST	UG/L	MW03-16S-NWG-100614	N1822-37B	NM	10/06/2014	10/08/2014	10/21/2014	2	13	15
PEST	UG/L	MW03-15S-NWG-100114	N1822-18C	NM	10/01/2014	10/08/2014	10/21/2014	7	13	20
PEST	UG/L	MW03-02S-NWG-092914	N1822-02B	NM	09/29/2014	10/01/2014	10/20/2014	2	19	21
PEST	UG/L	MW03-15I-NWG-092914	N1822-04B	NM	09/29/2014	10/01/2014	10/20/2014	2	19	21

Field Duplicate Precision

ANALYTE - TOTAL METALS	FD02-101014	MW02-10S-NWG-101014	RPD	DIFFERENCE
ALUMINUM	37	49.1	28.11	12.1
ANTIMONY	0.2	0.23	13.95	0.03
BARIUM	3.5	3.5	0.00	0
CADMIUM	0.12	0.2	50.00	0.08
CALCIUM	12300	11900	3.31	400
CHROMIUM	2.8	2.9	3.51	0.1
COPPER	0.7	0.81	14.57	0.11
IRON	1050	1010	3.88	40
MAGNESIUM	1410	1370	2.88	40
MANGANESE	357	332	7.26	25
NICKEL	0.91	0.93	2.17	0.02
POTASSIUM	1460	1400	4.20	60
SELENIUM	0.22	0.31	33.96	0.09
SODIUM	7620	7370	3.34	250
VANADIUM	ND	1.1	200.00	0.1
ZINC	58.8	46.6	23.15	12.2

Field Duplicate Precision

ANALYTE -DISSOLVED METALS	FD02-101014	MW02-10S-NWG-101014	RPD	DIFFERENCE
BARIUM	3.6	3.6	0.00	0
CADMIUM	0.12	0.13	8.00	0.01
CALCIUM	11200	11200	0.00	0
CHROMIUM	0.82	0.87	5.92	0.05
COPPER	0.58	0.27	72.94	0.31
IRON	1530	1580	3.22	50
MAGNESIUM	1500	1500	0.00	0
MANGANESE	491	501	2.02	10
NICKEL	1.8	1.2	40.00	0.6
POTASSIUM	1530	1520	0.66	10
SELENIUM	0.26	0.31	17.54	0.05
SODIUM	7870	7870	0.00	0
VANADIUM	ND	0.78	200.00	0.22
ZINC	49.7	51.7	3.94	2

Field Duplicate Precision

ANALYTE - TOTAL METALS	FD01-093014	MW03-17S-NWG-093014	RPD	DIFFERENCE
ALUMINUM	37.6	37.4	0.53	0.2
ANTIMONY	0.21	ND	200.00	0.01
BARIUM	15.6	15.5	0.64	0.1
CADMIUM	0.12	0.14	15.38	0.02
CALCIUM	6660	6780	1.79	120
CHROMIUM	1	0.81	20.99	0.19
COBALT	7.3	7.3	0.00	0
COPPER	1.9	1.5	23.53	0.4
MAGNESIUM	2240	2240	0.00	0
MANGANESE	110	110	0.00	0
NICKEL	10.1	10.5	3.88	0.4
POTASSIUM	1490	1480	0.67	10
SODIUM	11400	11300	0.88	100
THALLIUM	0.077	0.089	14.46	0.012
VANADIUM	0.77	ND	200.00	0.23
ZINC	10.2	11.2	9.35	1

Field Duplicate Precision

ANALYTE -DISSOLVED METALS	FD01-093014	MW03-17S-NWG-093014	RPD	DIFFERENCE
ALUMINUM	35	33.6	4.08	1.4
ANTIMONY	0.21	ND	200.00	0.01
BARIUM	15.8	15.5	1.92	0.3
CADMIUM	0.13	0.92	150.48	0.79
CALCIUM	6840	6820	0.29	20
CHROMIUM	0.94	0.84	11.24	0.1
COBALT	7.4	7.2	2.74	0.2
COPPER	3.1	2.5	21.43	0.6
MAGNESIUM	2280	2220	2.67	60
MANGANESE	107	106	0.94	1
NICKEL	11	10.7	2.76	0.3
POTASSIUM	1550	1510	2.61	40
SODIUM	11700	11400	2.60	300
VANADIUM	1	ND	200.00	0
ZINC	14.2	10.6	29.03	3.6

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 7470A Batch ID: 79325

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
CCB	10/02/2014		100
CCV	10/02/2014		100
ICB	10/02/2014		100
ICV	10/02/2014		100
S0	10/02/2014		100
S0.2	10/02/2014		100
S1.0	10/02/2014		100
S10.0	10/02/2014		100
S2.0	10/02/2014		100
S5.0	10/02/2014		100

Comments:

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 7470A Batch ID: 79326

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FD01-093014	10/02/2014		100
FD01-093014-F	10/02/2014		100
LCSW	10/02/2014		100
MW02-08SA-NWG-100114	10/02/2014		100
MW02-08SA-NWG-100114-F	10/02/2014		100
MW03-02S-NWG-092914	10/02/2014		100
MW03-02S-NWG-092914-F	10/02/2014		100
MW03-04S-NWG-093014	10/02/2014		100
MW03-05S-NWG-100114	10/02/2014		100
MW03-05S-NWG-100114-F	10/02/2014		100
MW03-15I-NWG-092914	10/02/2014		100
MW03-15I-NWG-092914-F	10/02/2014		100
MW03-15I-NWG-092914-FD	10/02/2014		100
MW03-15I-NWG-092914-FS	10/02/2014		100
MW03-15I-NWG-092914D	10/02/2014		100
MW03-15I-NWG-092914S	10/02/2014		100
MW03-15S-NWG-100114	10/02/2014		100
MW03-15S-NWG-100114-F	10/02/2014		100
MW03-17S-NWG-093014	10/02/2014		100
MW03-17S-NWG-093014-F	10/02/2014		100
MW03-4S-NWG-093014-F	10/02/2014		100
PBW	10/02/2014		100
RB01-100114	10/02/2014		100
RB01-100114-F	10/02/2014		100

Comments:

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: FIMS2 Method: CV

Start Date: 10/03/2014 End Date: 10/03/2014

FIMS2_141003C

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.0	1456																X									
S0.2	1.0	1457																X									
S1.0	1.0	1459																X									
S2.0	1.0	1501																X									
S5.0	1.0	1502																X									
S10.0	1.0	1504																X									
ICV	1.0	1506																X									
ICB	1.0	1507																X									
ZZZZZZ	1.0	1509																										
ZZZZZZ	1.0	1511																										
ZZZZZZ	1.0	1512																										
ZZZZZZ	1.0	1514																										
ZZZZZZ	1.0	1516																										
ZZZZZZ	1.0	1517																										
ZZZZZZ	1.0	1519																										
ZZZZZZ	1.0	1521																										
ZZZZZZ	1.0	1522																										
CCV	1.0	1524																X									
CCB	1.0	1526																X									
ZZZZZZ	1.0	1527																										
ZZZZZZ	1.0	1529																										
ZZZZZZ	1.0	1531																										
ZZZZZZ	1.0	1532																										
ZZZZZZ	1.0	1534																										
ZZZZZZ	1.0	1536																										
ZZZZZZ	1.0	1537																										
ZZZZZZ	1.0	1539																										
ZZZZZZ	1.0	1541																										
CCV	1.0	1542																X									
CCB	1.0	1544																X									
ZZZZZZ	1.0	1546																										
ZZZZZZ	1.0	1548																										

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: FIMS2 Method: CV

Start Date: 10/03/2014 End Date: 10/03/2014

FIMS2_141003C

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
PBW	1.0	1549																X									
LCSW	1.0	1551																X									
MW03-02S-NWG-092914	1.0	1552																X									
MW03-02S-NWG-092914-F	1.0	1554																X									
MW03-15I-NWG-092914	1.0	1556																X									
MW03-15I-NWG-092914D	1.0	1557																X									
MW03-15I-NWG-092914S	1.0	1559																X									
CCV	1.0	1601																X									
CCB	1.0	1602																X									
MW03-15I-NWG-092914-F	1.0	1604																X									
MW03-15I-NWG-092914-FD	1.0	1606																X									
MW03-15I-NWG-092914-FS	1.0	1607																X									
MW03-04S-NWG-093014	1.0	1609																X									
MW03-4S-NWG-093014-F	1.0	1611																X									
FD01-093014	1.0	1613																X									
FD01-093014-F	1.0	1614																X									
MW03-17S-NWG-093014	1.0	1616																X									
MW03-17S-NWG-093014-F	1.0	1617																X									
CCV	1.0	1619																X									
CCB	1.0	1621																X									
RB01-100114	1.0	1623																X									
RB01-100114-F	1.0	1624																X									

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: FIMS2 Method: CV

Start Date: 10/03/2014 End Date: 10/03/2014

FIMS2_141003C

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW03-05S-NWG-100114	1.0	1626																X								
MW03-05S-NWG-100114-F	1.0	1628																X								
MW03-15S-NWG-100114	1.0	1629																X								
MW03-15S-NWG-100114-F	1.0	1631																X								
MW02-08SA-NWG-100114	1.0	1632																X								
MW02-08SA-NWG-100114-F	1.0	1634																X								
ZZZZZZ	1.0	1636																								
CCV	1.0	1637																X								
CCB	1.0	1639																X								

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
	10/03/14 15:06				10/03/14 15:24		10/03/14 15:42		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Mercury	5.0	5.12	102.5	5.0	5.13	102.6	5.14	102.7	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					10/03/14 16:01		10/03/14 16:19		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Mercury				5.0	5.16	103.2	5.11	102.1	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					10/03/14 16:37				
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Mercury				5.0	5.18	103.6			CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: **MB-79326**

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

FIMS2_141003C

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
		C	10/03/14 15:26	C	10/03/14 15:44	C	10/03/14 16:02	C		C	M
Mercury	0.028	U	0.028	U	0.028	U	0.028	U	0.050	U	CV

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

FIMS2_141003C

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 10/03/14 16:21	C	10/03/14 16:39	C		C	Preparation Blank	C	M
Mercury			0.028	U	0.028	U					CV

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 7471B Batch ID: 79663

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
CCB	10/23/2014		100
CCV	10/23/2014		100
ICB	10/23/2014		100
ICV	10/23/2014		100
S0	10/23/2014		100
S0.2	10/23/2014		100
S1.0	10/23/2014		100
S10.0	10/23/2014		100
S2.0	10/23/2014		100
S5.0	10/23/2014		100
LCSW	10/23/2014		100
LCSW02	10/23/2014		100
MW01-10S-NWG-100214	10/23/2014		100
MW01-10S-NWG-100214-F	10/23/2014		100
MW01-12S-NWG-100214	10/23/2014		100
MW01-12S-NWG-100214-F	10/23/2014		100
MW02-03S-NWG-100314	10/23/2014		100
MW02-03S-NWG-100314-F	10/23/2014		100
MW02-05S-NWG-100214	10/23/2014		100
MW02-05S-NWG-100214-F	10/23/2014		100
MW02-09S-NWG-100814	10/23/2014		100
MW02-09S-NWG-100814-F	10/23/2014		100
MW02-11S-NWG-100814	10/23/2014		100
MW02-11S-NWG-100814-F	10/23/2014		100
MW02-4SA-NWG-100614	10/23/2014		100
MW02-4SA-NWG-100614-F	10/23/2014		100
MW03-16S-NWG-100614	10/23/2014		100
MW03-16S-NWG-100614-F	10/23/2014		100
MW03-17I-NWG-100214	10/23/2014		100
MW03-17I-NWG-100214-F	10/23/2014		100
PBW	10/23/2014		100

Comments:

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 7471B Batch ID: 79663

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
RB02-100814	10/23/2014		100
RB02-100814-F	10/23/2014		100

Comments:

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 7470A Batch ID: 79663

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
CCB	10/23/2014		100
CCV	10/23/2014		100
ICB	10/23/2014		100
ICV	10/23/2014		100
S0	10/23/2014		100
S0.2	10/23/2014		100
S1.0	10/23/2014		100
S10.0	10/23/2014		100
S2.0	10/23/2014		100
S5.0	10/23/2014		100
LCSW	10/23/2014		100
LCSW02	10/23/2014		100
MW01-10S-NWG-100214	10/23/2014		100
MW01-10S-NWG-100214-F	10/23/2014		100
MW01-12S-NWG-100214	10/23/2014		100
MW01-12S-NWG-100214-F	10/23/2014		100
MW02-03S-NWG-100314	10/23/2014		100
MW02-03S-NWG-100314-F	10/23/2014		100
MW02-05S-NWG-100214	10/23/2014		100
MW02-05S-NWG-100214-F	10/23/2014		100
MW02-09S-NWG-100814	10/23/2014		100
MW02-09S-NWG-100814-F	10/23/2014		100
MW02-11S-NWG-100814	10/23/2014		100
MW02-11S-NWG-100814-F	10/23/2014		100
MW02-4SA-NWG-100614	10/23/2014		100
MW02-4SA-NWG-100614-F	10/23/2014		100
MW03-16S-NWG-100614	10/23/2014		100
MW03-16S-NWG-100614-F	10/23/2014		100
MW03-17I-NWG-100214	10/23/2014		100
MW03-17I-NWG-100214-F	10/23/2014		100
PBW	10/23/2014		100

Comments:

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 7470A Batch ID: 79663

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
RB02-100814	10/23/2014		100
RB02-100814-F	10/23/2014		100

Comments:

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 7470A Batch ID: 79664

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FD02-101014	10/23/2014		100
FD02-101014-F	10/23/2014		100
LCSW	10/23/2014		100
MW01-14S-NWG-100914	10/23/2014		100
MW01-14S-NWG-100914-F	10/23/2014		100
MW01-14S-NWG-100914-FD	10/23/2014		100
MW01-14S-NWG-100914-FS	10/23/2014		100
MW01-14S-NWG-100914D	10/23/2014		100
MW01-14S-NWG-100914S	10/23/2014		100
MW02-10S-NWG-101014	10/23/2014		100
MW02-10S-NWG-101014-F	10/23/2014		100
PBW	10/23/2014		100

Comments:

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: FIMS2 Method: CV

Start Date: 10/24/2014 End Date: 10/24/2014

FIMS2_141024A

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.0	0900																X									
S0.2	1.0	0902																X									
S1.0	1.0	0904																X									
S2.0	1.0	0905																X									
S5.0	1.0	0907																X									
S10.0	1.0	0909																X									
ICV	1.0	0910																X									
ICB	1.0	0912																X									
PBW	1.0	0914																X									
LCSW	1.0	0915																X									
LCSW02	1.0	0917																X									
MW02-05S-NWG-100214	1.0	0919																X									
MW02-05S-NWG-100214-F	1.0	0920																X									
MW03-17I-NWG-100214	1.0	0922																X									
MW03-17I-NWG-100214-F	1.0	0924																X									
MW01-10S-NWG-100214	1.0	0925																X									
MW01-10S-NWG-100214-F	1.0	0927																X									
CCV	1.0	0929																X									
CCB	1.0	0930																X									
MW01-12S-NWG-100214	1.0	0932																X									
MW01-12S-NWG-100214-F	1.0	0934																X									
MW02-03S-NWG-100314	1.0	0935																X									
MW02-03S-NWG-100314-F	1.0	0937																X									

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: FIMS2 Method: CV

Start Date: 10/24/2014 End Date: 10/24/2014

FIMS2_141024A

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW02-4SA-NWG-100614	1.0	0939																X									
MW02-4SA-NWG-100614-F	1.0	0940																X									
MW03-16S-NWG-100614	1.0	0942																X									
MW03-16S-NWG-100614-F	1.0	0944																X									
RB02-100814	1.0	0945																X									
CCV	1.0	0947																X									
CCB	1.0	0949																X									
RB02-100814-F	1.0	0950																X									
MW02-09S-NWG-100814	1.0	0952																X									
MW02-09S-NWG-100814-F	1.0	0954																X									
MW02-11S-NWG-100814	1.0	0955																X									
MW02-11S-NWG-100814-F	1.0	0957																X									
PBW	1.0	0959																X									
LCSW	1.0	1000																X									
MW01-14S-NWG-100914	1.0	1002																X									
MW01-14S-NWG-100914D	1.0	1004																X									
CCV	1.0	1005																X									
CCB	1.0	1007																X									
MW01-14S-NWG-100914S	1.0	1009																X									
MW01-14S-NWG-100914-F	1.0	1010																X									
MW01-14S-NWG-100914-FD	1.0	1012																X									

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: FIMS2 Method: CV

Start Date: 10/24/2014 End Date: 10/24/2014

FIMS2_141024A

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW01-14S-NWG-100914-FS	1.0	1014																X									
MW02-10S-NWG-101014	1.0	1015																X									
MW02-10S-NWG-101014-F	1.0	1017																X									
FD02-101014	1.0	1019																X									
FD02-101014-F	1.0	1020																X									
ZZZZZZ	1.0	1022																									
CCV	1.0	1024																X									
CCB	1.0	1025																X									

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
	10/24/14 9:10				10/24/14 9:29		10/24/14 09:47		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Mercury	5.0	4.94	98.7	5.0	4.89	97.7	4.87	97.4	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					10/24/14 10:05		10/24/14 10:24		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Mercury				5.0	4.88	97.6	4.90	98.1	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: **MB-79663**

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

FIMS2_141024A

	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
Analyte		C	10/24/14 9:30	C	10/24/14 9:49	C	10/24/14 10:07	C		C	M
Mercury	0.028	U	0.028	U	0.028	U	0.028	U	0.050	U	CV

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: **MB-79664**

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

FIMS2_141024A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 10/24/14 10:25	C		C		C	Preparation Blank	C	M
Mercury			0.028	U					0.050	U	CV

U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCS-79326

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	2.88	62.6						

U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCS-79663

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.38	95.2						

U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCS-79664

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.04	87.8						

U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCSD-79663

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.29	93.3						

U.S. EPA - CLP

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METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument Type: CV InstrumentID: FIMS2 Date: 03/04/2010

Preparation Method: 7470A

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Wavelength /Mass	CRDL	MDL
Mercury	253.70	0.2	0.028

Comments:

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: X1 Method: MS

Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
TUNE	1.0	1020						X			X				X	X											
S0	1.0	1057		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S1	1.0	1102		X		X	X	X	X		X				X		X		X			X		X			
S2	1.0	1107		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		X	
S3	1.0	1112		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S4	1.0	1117		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S5	1.0	1122		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S6	1.0	1127		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICV	1.0	1132		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICB	1.0	1138		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.0	1143																									
ICSA	1.0	1148			X	X	X	X	X		X	X	X		X		X		X		X	X		X	X	X	
ICSAB	1.0	1153			X	X	X	X	X		X	X	X		X		X		X		X	X		X	X	X	
ICSA	10.0	1158		X						X				X		X				X			X				
ICSAB	10.0	1203		X						X				X		X				X			X				
CCV	1.0	1208		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1213		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
PBW	1.0	1218		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCW	1.0	1223		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.0	1228																									
ZZZZZZ	5.0	1233																									
ZZZZZZ	1.0	1238																									
ZZZZZZ	1.0	1244																									
CCV	1.0	1249		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1254		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.0	1259																									
MW03-02S-NWG-092914	1.0	1304		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-02S-NWG-092914-F	1.0	1309		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-15I-NWG-092914	1.0	1314		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: X1 Method: MS

Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW03-15I-NWG-092914D	1.0	1319		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-15I-NWG-092914S	1.0	1324		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X		X	X	X	
MW03-15I-NWG-092914L	5.0	1329		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.0	1334																									
CCV	1.0	1339		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1344		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.0	1349																									
MW03-15I-NWG-092914-F	1.0	1354		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-15I-NWG-092914-FD	1.0	1359		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-15I-NWG-092914-FS	1.0	1404		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X		X	X	X	
MW03-15I-NWG-092914-FL	5.0	1409		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-04S-NWG-093014	1.0	1414		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-4S-NWG-093014-F	1.0	1419		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FD01-093014	1.0	1424		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FD01-093014-F	1.0	1429		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1434		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1439		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-17S-NWG-093014	1.0	1444		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-17S-NWG-093014-F	1.0	1449		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
RB01-100114	1.0	1454		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
RB01-100114-F	1.0	1459		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-05S-NWG-100114	1.0	1505		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: X1 Method: MS

Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW03-05S-NWG-100114-F	1.0	1510		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-15S-NWG-100114	1.0	1515		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-15S-NWG-100114-F	1.0	1520		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-08SA-NWG-100114	1.0	1525		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-08SA-NWG-100114-F	1.0	1530		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1535		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1540		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
PBW	1.0	1545		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCW	1.0	1550		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCWD	1.0	1555		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-05S-NWG-100214	1.0	1600		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-05S-NWG-100214-F	1.0	1605		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-17I-NWG-100214	1.0	1610		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-17I-NWG-100214-F	1.0	1615		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-10S-NWG-100214	1.0	1620		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1625		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1630		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-10S-NWG-100214-F	1.0	1635		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-12S-NWG-100214	1.0	1640		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-12S-NWG-100214-F	1.0	1645		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: X1 Method: MS

Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW02-03S-NWG-100314	1.0	1650		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-03S-NWG-100314-F	1.0	1655		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-4SA-NWG-100614	1.0	1700		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-4SA-NWG-100614-F	1.0	1705		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-16S-NWG-100614	1.0	1710		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1715		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1720		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-16S-NWG-100614-F	1.0	1726		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
RB02-100814	1.0	1731		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
RB02-100814-F	1.0	1736		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-09S-NWG-100814	1.0	1741		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-09S-NWG-100814-F	1.0	1746		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-11S-NWG-100814	1.0	1751		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-11S-NWG-100814-F	1.0	1756		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	5.0	1801																									
CCV	1.0	1806		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1811		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
PBW	1.0	1816		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCW	1.0	1821		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-14S-NWG-100914	1.0	1826		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-14S-NWG-100914D	1.0	1831		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument ID Number: X1 Method: MS

Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW01-14S-NWG-100914S	1.0	1836		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X		X	X	X	
MW01-14S-NWG-100914L	5.0	1841		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1846		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1851		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-14S-NWG-100914-F	1.0	1856		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-14S-NWG-100914-FD	1.0	1901		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-14S-NWG-100914-FS	1.0	1906		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X		X	X	X	
MW01-14S-NWG-100914-FL	5.0	1911		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-10S-NWG-101014	1.0	1916		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-10S-NWG-101014-F	1.0	1922		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FD02-101014	1.0	1927		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FD02-101014-F	1.0	1932		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1937		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1942		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Method: 200.7 Batch ID: 79660

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FD01-093014	10/23/2014		50
FD01-093014-F	10/23/2014		50
LCW	10/23/2014		50
MW02-08SA-NWG-100114	10/23/2014		50
MW02-08SA-NWG-100114-F	10/23/2014		50
MW03-02S-NWG-092914	10/23/2014		50
MW03-02S-NWG-092914-F	10/23/2014		50
MW03-04S-NWG-093014	10/23/2014		50
MW03-05S-NWG-100114	10/23/2014		50
MW03-05S-NWG-100114-F	10/23/2014		50
MW03-15I-NWG-092914	10/23/2014		50
MW03-15I-NWG-092914-F	10/23/2014		50
MW03-15I-NWG-092914-FD	10/23/2014		50
MW03-15I-NWG-092914-FS	10/23/2014		50
MW03-15I-NWG-092914D	10/23/2014		50
MW03-15I-NWG-092914S	10/23/2014		50
MW03-15S-NWG-100114	10/23/2014		50
MW03-15S-NWG-100114-F	10/23/2014		50
MW03-17S-NWG-093014	10/23/2014		50
MW03-17S-NWG-093014-F	10/23/2014		50
MW03-4S-NWG-093014-F	10/23/2014		50
PBW	10/23/2014		50
RB01-100114	10/23/2014		50
RB01-100114-F	10/23/2014		50

Comments:

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
	10/24/14 11:32				10/24/14 12:08		10/24/14 12:49		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum	2000.0	2128.48	106.4	2000.0	2057.11	102.9	2008.12	100.4	MS
Antimony	100.0	94.70	94.7	100.0	99.46	99.5	99.08	99.1	MS
Arsenic	100.0	100.79	100.8	100.0	99.66	99.7	100.20	100.2	MS
Barium	1000.0	999.19	99.9	1000.0	1019.67	102.0	1012.14	101.2	MS
Beryllium	100.0	101.23	101.2	100.0	102.78	102.8	99.98	100	MS
Cadmium	100.0	98.74	98.7	100.0	99.95	100	100.41	100.4	MS
Calcium	25000.0	25406.36	101.6	25000.0	25722.90	102.9	25469.24	101.9	MS
Chromium	100.0	102.58	102.6	100.0	101.78	101.8	101.28	101.3	MS
Cobalt	100.0	97.62	97.6	100.0	98.29	98.3	98.18	98.2	MS
Copper	100.0	100.98	101.0	100.0	99.45	99.5	99.38	99.4	MS
Iron	10000.0	9569.79	95.7	10000.0	10085.20	100.9	10022.22	100.2	MS
Lead	100.0	98.80	98.8	100.0	101.08	101.1	101.39	101.4	MS
Magnesium	25000.0	25657.42	102.6	25000.0	25591.07	102.4	25013.93	100.1	MS
Manganese	100.0	99.95	99.9	100.0	99.20	99.2	99.17	99.2	MS
Nickel	100.0	98.94	98.9	100.0	97.68	97.7	97.90	97.9	MS
Potassium	25000.0	25379.31	101.5	25000.0	25549.91	102.2	25198.49	100.8	MS
Selenium	100.0	100.69	100.7	100.0	98.39	98.4	100.17	100.2	MS
Silver	111.0	100.66	90.7	100.0	99.72	99.7	99.10	99.1	MS
Sodium	25000.0	26002.46	104.0	25000.0	26063.63	104.3	25392.50	101.6	MS
Thallium	100.0	100.36	100.4	100.0	101.28	101.3	101.39	101.4	MS
Vanadium	100.0	101.81	101.8	100.0	100.73	100.7	100.38	100.4	MS
Zinc	100.0	101.05	101.1	100.0	99.24	99.2	98.04	98.0	MS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					10/24/14 13:39		10/24/14 14:34		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum				2000.0	1964.24	98.2	1978.05	98.9	MS
Antimony				100.0	100.12	100.1	100.31	100.3	MS
Arsenic				100.0	102.57	102.6	104.51	104.5	MS
Barium				1000.0	1000.08	100.0	1012.78	101.3	MS
Beryllium				100.0	102.10	102.1	102.27	102.3	MS
Cadmium				100.0	101.09	101.1	101.25	101.3	MS
Calcium				25000.0	24788.53	99.2	24762.03	99.0	MS
Chromium				100.0	103.21	103.2	102.92	102.9	MS
Cobalt				100.0	100.86	100.9	100.84	100.8	MS
Copper				100.0	102.57	102.6	103.05	103.0	MS
Iron				10000.0	10044.05	100.4	10021.94	100.2	MS
Lead				100.0	101.73	101.7	102.16	102.2	MS
Magnesium				25000.0	23966.13	95.9	24104.46	96.4	MS
Manganese				100.0	100.51	100.5	100.54	100.5	MS
Nickel				100.0	99.63	99.6	99.60	99.6	MS
Potassium				25000.0	24234.13	96.9	24195.95	96.8	MS
Selenium				100.0	103.17	103.2	103.49	103.5	MS
Silver				100.0	100.56	100.6	100.64	100.6	MS
Sodium				25000.0	24422.79	97.7	24477.24	97.9	MS
Thallium				100.0	101.62	101.6	102.22	102.2	MS
Vanadium				100.0	101.78	101.8	101.54	101.5	MS
Zinc				100.0	98.51	98.5	99.21	99.2	MS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					10/24/14 15:35		10/24/14 16:25		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum				2000.0	1949.39	97.5	1968.07	98.4	MS
Antimony				100.0	100.53	100.5	100.72	100.7	MS
Arsenic				100.0	104.51	104.5	103.67	103.7	MS
Barium				1000.0	993.75	99.4	999.27	99.9	MS
Beryllium				100.0	99.02	99.0	100.44	100.4	MS
Cadmium				100.0	101.40	101.4	101.97	102.0	MS
Calcium				25000.0	25240.03	101.0	25234.57	100.9	MS
Chromium				100.0	102.54	102.5	102.82	102.8	MS
Cobalt				100.0	99.89	99.9	100.10	100.1	MS
Copper				100.0	100.68	100.7	101.01	101.0	MS
Iron				10000.0	9820.69	98.2	9822.65	98.2	MS
Lead				100.0	100.29	100.3	100.72	100.7	MS
Magnesium				25000.0	23993.26	96.0	24284.17	97.1	MS
Manganese				100.0	101.65	101.7	101.66	101.7	MS
Nickel				100.0	98.04	98.0	98.30	98.3	MS
Potassium				25000.0	24401.40	97.6	24558.47	98.2	MS
Selenium				100.0	104.26	104.3	104.32	104.3	MS
Silver				100.0	100.59	100.6	100.97	101.0	MS
Sodium				25000.0	24223.18	96.9	24537.91	98.2	MS
Thallium				100.0	101.43	101.4	101.34	101.3	MS
Vanadium				100.0	101.25	101.3	101.72	101.7	MS
Zinc				100.0	98.25	98.3	97.95	98.0	MS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					10/24/14 17:15		10/24/14 18:06		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum				2000.0	1960.90	98.0	1941.89	97.1	MS
Antimony				100.0	100.84	100.8	100.85	100.8	MS
Arsenic				100.0	103.65	103.7	103.36	103.4	MS
Barium				1000.0	970.10	97.0	985.96	98.6	MS
Beryllium				100.0	99.18	99.2	98.77	98.8	MS
Cadmium				100.0	101.73	101.7	101.96	102.0	MS
Calcium				25000.0	25595.93	102.4	25370.57	101.5	MS
Chromium				100.0	102.01	102.0	101.40	101.4	MS
Cobalt				100.0	98.54	98.5	98.50	98.5	MS
Copper				100.0	100.32	100.3	100.13	100.1	MS
Iron				10000.0	9773.82	97.7	9761.16	97.6	MS
Lead				100.0	98.94	98.9	99.22	99.2	MS
Magnesium				25000.0	24310.16	97.2	24150.19	96.6	MS
Manganese				100.0	101.30	101.3	101.14	101.1	MS
Nickel				100.0	97.18	97.2	96.80	96.8	MS
Potassium				25000.0	24848.97	99.4	24627.17	98.5	MS
Selenium				100.0	104.79	104.8	104.42	104.4	MS
Silver				100.0	100.81	100.8	99.91	99.9	MS
Sodium				25000.0	24625.03	98.5	24381.64	97.5	MS
Thallium				100.0	101.22	101.2	101.02	101.0	MS
Vanadium				100.0	101.31	101.3	100.62	100.6	MS
Zinc				100.0	97.31	97.3	97.21	97.2	MS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					10/24/14 18:46		10/24/14 19:37		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum				2000.0	1973.73	98.7	1963.34	98.2	MS
Antimony				100.0	99.95	99.9	100.68	100.7	MS
Arsenic				100.0	102.21	102.2	102.38	102.4	MS
Barium				1000.0	966.87	96.7	994.20	99.4	MS
Beryllium				100.0	98.80	98.8	98.75	98.7	MS
Cadmium				100.0	101.24	101.2	101.21	101.2	MS
Calcium				25000.0	25516.40	102.1	25457.63	101.8	MS
Chromium				100.0	100.49	100.5	101.00	101.0	MS
Cobalt				100.0	98.19	98.2	97.62	97.6	MS
Copper				100.0	98.63	98.6	98.35	98.4	MS
Iron				10000.0	9701.69	97.0	9644.54	96.4	MS
Lead				100.0	98.68	98.7	99.40	99.4	MS
Magnesium				25000.0	24545.25	98.2	24514.47	98.1	MS
Manganese				100.0	101.11	101.1	100.74	100.7	MS
Nickel				100.0	96.62	96.6	95.63	95.6	MS
Potassium				25000.0	24853.15	99.4	24994.36	100	MS
Selenium				100.0	103.67	103.7	102.91	102.9	MS
Silver				100.0	99.74	99.7	99.86	99.9	MS
Sodium				25000.0	24793.48	99.2	24766.22	99.1	MS
Thallium				100.0	101.30	101.3	102.48	102.5	MS
Vanadium				100.0	99.59	99.6	101.13	101.1	MS
Zinc				100.0	97.67	97.7	97.48	97.5	MS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: MB-79660

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

X1_141024A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 10/24/14 12:13	C	10/24/14 12:54	C	10/24/14 13:44	C	Preparation Blank	C	M
Aluminum	2.900	U	2.900	U	3.917	B	2.900	U	4.193	B	MS
Antimony	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	MS
Arsenic	-0.581	B	-0.402	B	-0.505	B	-0.542	B	0.380	U	MS
Barium	1.300	U	1.300	U	1.300	U	1.300	U	1.981	B	MS
Beryllium	0.072	U	0.072	U	0.072	U	0.072	U	0.150	U	MS
Cadmium	0.084	U	0.084	U	0.084	U	0.084	U	0.150	U	MS
Calcium	24.000	U	24.000	U	24.000	U	24.000	U	38.000	U	MS
Chromium	-0.165	B	-0.176	B	0.160	U	0.160	U	0.250	U	MS
Cobalt	0.024	U	0.024	U	0.024	U	0.024	U	0.454	B	MS
Copper	0.230	U	0.230	U	0.230	U	0.230	U	0.242	B	MS
Iron	14.000	U	14.000	U	14.000	U	14.000	U	46.893	B	MS
Lead	0.068	U	0.068	U	0.068	U	0.068	U	0.150	U	MS
Magnesium	7.800	U	7.800	U	7.800	U	7.800	U	12.000	U	MS
Manganese	0.830	U	0.830	U	0.830	U	0.830	U	1.000	U	MS
Nickel	0.170	U	0.170	U	0.170	U	0.170	U	0.438	B	MS
Potassium	14.000	U	14.000	U	14.000	U	14.000	U	20.000	U	MS
Selenium	0.150	U	0.150	U	0.150	U	0.150	U	0.250	U	MS
Silver	0.038	B	0.022	U	0.038	B	0.280	B	0.100	U	MS
Sodium	33.000	U	33.000	U	33.000	U	33.000	U	50.000	U	MS
Thallium	0.052	B	0.048	U	0.070	B	0.061	B	0.075	U	MS
Vanadium	0.610	U	0.610	U	0.610	U	0.610	U	1.000	U	MS
Zinc	0.730	U	0.730	U	0.730	U	0.730	U	1.000	U	MS

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: MB-79678

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

X1_141024A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 10/24/14 14:39	C	10/24/14 15:40	C	10/24/14 16:30	C	Preparation Blank	C	M
Aluminum			2.900	U	2.900	U	2.900	U	6.800	U	MS
Antimony			0.200	U	0.200	U	0.200	U	0.200	U	MS
Arsenic			-0.266	B	-0.348	B	-0.382	B	0.380	U	MS
Barium			1.300	U	1.300	U	1.300	U	2.000	U	MS
Beryllium			0.072	U	0.072	U	0.072	U	0.150	U	MS
Cadmium			0.084	U	0.084	U	0.084	U	0.150	U	MS
Calcium			24.000	U	24.000	U	24.000	U	38.000	U	MS
Chromium			0.160	U	0.160	U	0.160	U	0.250	U	MS
Cobalt			0.024	U	0.031	B	0.045	B	0.050	U	MS
Copper			0.230	U	0.230	U	0.230	U	0.380	U	MS
Iron			14.000	U	14.000	U	14.000	U	20.000	U	MS
Lead			0.068	U	0.068	U	0.068	U	0.150	U	MS
Magnesium			7.800	U	7.800	U	10.825	B	12.000	U	MS
Manganese			0.830	U	0.830	U	0.830	U	1.000	U	MS
Nickel			0.170	U	0.170	U	0.170	U	0.250	U	MS
Potassium			14.000	U	14.000	U	14.000	U	20.000	U	MS
Selenium			0.150	U	0.150	U	0.150	U	0.250	U	MS
Silver			0.196	B	0.136	B	0.115	B	0.127	B	MS
Sodium			33.000	U	33.000	U	33.000	U	50.000	U	MS
Thallium			0.061	B	0.074	B	0.083	B	0.075	U	MS
Vanadium			0.610	U	0.610	U	0.610	U	1.000	U	MS
Zinc			0.730	U	0.730	U	0.730	U	1.000	U	MS

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: MB-79679

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

X1_141024A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 10/24/14 17:20	C	10/24/14 18:11	C	10/24/14 18:51	C	Preparation Blank	C	M
Aluminum			2.900	U	2.900	U	2.900	U	6.800	U	MS
Antimony			0.200	U	0.200	U	0.200	U	0.200	U	MS
Arsenic			-0.306	B	-0.253	B	-0.276	B	0.380	U	MS
Barium			1.300	U	1.300	U	1.300	U	2.000	U	MS
Beryllium			0.072	U	0.072	U	0.072	U	0.150	U	MS
Cadmium			0.084	U	0.084	U	0.084	U	0.150	U	MS
Calcium			24.000	U	24.000	U	24.000	U	38.000	U	MS
Chromium			0.160	U	0.160	U	0.160	U	0.250	U	MS
Cobalt			0.065	B	0.024	U	0.058	B	0.031	B	MS
Copper			0.230	U	0.230	U	0.230	U	0.380	U	MS
Iron			14.000	U	14.000	U	14.000	U	20.000	U	MS
Lead			0.068	U	0.068	U	0.068	U	0.150	U	MS
Magnesium			13.987	B	7.800	U	9.739	B	12.000	U	MS
Manganese			0.830	U	0.830	U	0.830	U	1.000	U	MS
Nickel			0.170	U	0.170	U	0.170	U	0.250	U	MS
Potassium			19.567	B	14.000	U	14.943	B	20.000	U	MS
Selenium			0.150	U	0.150	U	0.150	U	0.250	U	MS
Silver			0.104	B	0.022	U	0.057	B	0.028	B	MS
Sodium			33.000	U	33.000	U	33.000	U	50.000	U	MS
Thallium			0.097	B	0.066	B	0.107	B	0.075	U	MS
Vanadium			0.610	U	0.610	U	0.610	U	1.000	U	MS
Zinc			0.730	U	0.730	U	0.730	U	1.000	U	MS

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

X1_141024A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 10/24/14 19:42	C		C		C	Preparation Blank	C	M
Aluminum			2.900	U							MS
Antimony			0.200	U							MS
Arsenic			-0.389	B							MS
Barium			1.300	U							MS
Beryllium			0.079	B							MS
Cadmium			0.084	U							MS
Calcium			24.000	U							MS
Chromium			0.160	U							MS
Cobalt			0.105	B							MS
Copper			0.230	U							MS
Iron			14.000	U							MS
Lead			0.082	B							MS
Magnesium			20.130	B							MS
Manganese			0.830	U							MS
Nickel			0.170	U							MS
Potassium			27.786	B							MS
Selenium			0.150	U							MS
Silver			0.094	B							MS
Sodium			33.000	U							MS
Thallium			0.150	B							MS
Vanadium			0.610	U							MS
Zinc			0.730	U							MS

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

ICP ID Number: X1 ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found %R	Final Found Sol. AB	Final Found %R
Antimony	0	0	1	0.7					
Arsenic	0	100	-1	94.3	94.3				
Barium	0	0	0	0.2					
Beryllium	0	0	0	0					
Cadmium	0	100	1	88.1	88.1				
Chromium	0	200	3	211.6	105.8				
Cobalt	0	0	0	0.2					
Copper	0	200	2	181.3	90.7				
Lead	0	0	0	0.4					
Manganese	0	200	1	209.7	104.8				
Nickel	0	200	1	184	92.0				
Selenium	0	100	-5	81.7	81.7				
Silver	0	200	0	185.1	92.5				
Thallium	0	0	0	0					
Vanadium	0	200	0	208.8	104.4				
Zinc	0	100	4	93.7	93.7				

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

ICP ID Number: X1 ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found %R	Final Found Sol. AB	Final Found %R
Aluminum	100000	100000	106554	103723.3	103.7				
Calcium	300000	300000	322401	317998.2	106.0				
Iron	250000	250000	254802	253711.3	101.5				
Magnesium	100000	100000	108298	104820.1	104.8				
Potassium	100000	100000	107701	105189.6	105.2				
Sodium	250000	250000	274929	267001.3	106.8				

U.S. EPA - CLP

5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MW01-14S-NWG-100914-FS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2060		19.3	B	2000	102		MS
Antimony	75-125	102		0.20	U	100	102		MS
Arsenic	75-125	41.0		0.19	U	40.0	103		MS
Barium	75-125	2070		10.1		2000	103		MS
Beryllium	75-125	49.6		0.072	U	50.0	99		MS
Cadmium	75-125	53.1		0.088	B	50.0	106		MS
Chromium	75-125	207		0.89	B	200	103		MS
Cobalt	75-125	501		0.078	B	500	100		MS
Copper	75-125	252		0.58	B	250	100		MS
Iron	75-125	1020		150	B	1000	87		MS
Lead	75-125	21.5		0.22	B	20.0	107		MS
Manganese	75-125	530		14.4		500	103		MS
Nickel	75-125	487		1.4		500	97		MS
Selenium	75-125	50.4		0.36	B	50.0	100		MS
Silver	75-125	51.3		0.034	B	50.0	103		MS
Thallium	75-125	52.9		0.048	U	50.0	106		MS
Vanadium	75-125	528		0.61	U	500	106		MS
Zinc	75-125	476		1.4	B	500	95		MS
Mercury	75-125	4.3		0.028	U	4.6	95		CV

Comments:

U.S. EPA - CLP

5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MW01-14S-NWG-100914S

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	1970		17.8	B	2000	98		MS
Antimony	75-125	95.8		0.20	U	100	96		MS
Arsenic	75-125	39.5		0.19	U	40.0	99		MS
Barium	75-125	1990		10.5		2000	99		MS
Beryllium	75-125	48.0		0.072	U	50.0	96		MS
Cadmium	75-125	50.9		0.091	B	50.0	102		MS
Chromium	75-125	201		1.2	B	200	100		MS
Cobalt	75-125	484		0.098	B	500	97		MS
Copper	75-125	244		0.23	U	250	98		MS
Iron	75-125	982		14.0	U	1000	98		MS
Lead	75-125	20.4		0.068	U	20.0	102		MS
Manganese	75-125	501		4.4		500	99		MS
Nickel	75-125	470		1.6		500	94		MS
Selenium	75-125	49.0		0.37	B	50.0	97		MS
Silver	75-125	48.9		0.040	B	50.0	98		MS
Thallium	75-125	50.3		0.048	U	50.0	101		MS
Vanadium	75-125	506		0.61	U	500	101		MS
Zinc	75-125	462		1.5	B	500	92		MS
Mercury	75-125	4.0		0.028	U	4.6	88		CV

Comments:

U.S. EPA - CLP

5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MW03-15I-NWG-092914-FS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2070		9.6	B	2000	103		MS
Antimony	75-125	102		0.20	U	100	102		MS
Arsenic	75-125	41.7		0.21	B	40.0	104		MS
Barium	75-125	2100		18.7		2000	104		MS
Beryllium	75-125	51.6		0.30	B	50.0	103		MS
Cadmium	75-125	52.4		0.084	U	50.0	105		MS
Chromium	75-125	214		1.0	B	200	106		MS
Cobalt	75-125	543		17.2		500	105		MS
Copper	75-125	266		1.1	B	250	106		MS
Iron		7310		6350		1000	96		MS
Lead	75-125	21.6		0.068	U	20.0	108		MS
Manganese	75-125	669		147		500	104		MS
Nickel	75-125	536		25.5		500	102		MS
Selenium	75-125	49.1		0.15	U	50.0	98		MS
Silver	75-125	52.9		0.37	B	50.0	105		MS
Thallium	75-125	53.0		0.076	B	50.0	106		MS
Vanadium	75-125	539		0.61	U	500	108		MS
Zinc	75-125	521		48.8		500	94		MS
Mercury	75-125	4.0		0.028	U	4.6	89		CV

Comments:

U.S. EPA - CLP

5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MW03-15I-NWG-092914S

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2170		88.2		2000	104		MS
Antimony	75-125	102		0.53	B	100	102		MS
Arsenic	75-125	41.4		0.19	U	40.0	103		MS
Barium	75-125	2120		18.0		2000	105		MS
Beryllium	75-125	51.4		0.34	B	50.0	102		MS
Cadmium	75-125	52.6		0.29	B	50.0	105		MS
Chromium	75-125	214		1.4	B	200	106		MS
Cobalt	75-125	539		16.7		500	105		MS
Copper	75-125	263		0.68	B	250	105		MS
Iron		7320		6030		1000	129		MS
Lead	75-125	21.6		0.15	B	20.0	107		MS
Manganese	75-125	667		134		500	107		MS
Nickel	75-125	531		25.3		500	101		MS
Selenium	75-125	48.7		0.15	U	50.0	97		MS
Silver	75-125	52.7		0.48	B	50.0	104		MS
Thallium	75-125	52.7		0.076	B	50.0	105		MS
Vanadium	75-125	542		0.61	U	500	108		MS
Zinc	75-125	524		48.0		500	95		MS
Mercury	75-125	4.5		0.028	U	4.6	99		CV

Comments:

U.S. EPA - CLP

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DUPLICATES

EPA SAMPLE NO.

MW03-15I-NWG-092914D

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	20.0	88.2390		98.8766		11.4		MS
Antimony		0.5332	B	0.5873	B	9.7		MS
Arsenic		0.1900	U	0.1900	U			MS
Barium	10.0	17.9743		19.6200		8.8		MS
Beryllium		0.3354	B	0.3478	B	3.6		MS
Cadmium		0.2856	B	0.3204	B	11.5		MS
Calcium		8290.2359		8951.3446		7.7		MS
Chromium		1.3820	B	1.5433	B	11		MS
Cobalt		16.7142		18.0598		7.7		MS
Copper		0.6826	B	0.7387	B	7.9		MS
Iron		6027.0618		6419.8066		6.3		MS
Lead		0.1489	B	0.1546	B	3.8		MS
Magnesium		2809.7728		3046.4620		8.1		MS
Manganese		133.6545		144.3067		7.7		MS
Nickel		25.2753		26.9955		6.6		MS
Potassium	500.0	1532.5300		1642.5725		6.9		MS
Selenium		0.1500	U	0.1500	U			MS
Silver		0.4775	B	0.4613	B	3.5		MS
Sodium		22314.3805		24284.3181		8.5		MS
Thallium		0.0761	B	0.0806	B	5.7		MS
Vanadium		0.6100	U	0.7517	B	200		MS
Zinc		47.9616		51.6256		7.4		MS
Mercury		0.0280	U	0.0280	U			CV

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6

DUPLICATES

EPA SAMPLE NO.

MW03-15I-NWG-092914-FD

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		9.5537	B	10.3481	B	8		MS
Antimony		0.2000	U	0.2000	U			MS
Arsenic		0.2144	B	0.1900	U	200		MS
Barium	10.0	18.6529		19.5019		4.5		MS
Beryllium		0.3034	B	0.3369	B	10.5		MS
Cadmium		0.0840	U	0.0840	U			MS
Calcium		8379.3833		8836.5035		5.3		MS
Chromium		1.0271	B	0.6855	B	39.9		MS
Cobalt		17.2292		17.8883		3.8		MS
Copper		1.0718	B	1.0451	B	2.5		MS
Iron		6349.7234		6571.1867		3.4		MS
Lead		0.0680	U	0.0680	U			MS
Magnesium		2831.3474		3010.7884		6.1		MS
Manganese		146.6503		152.2914		3.8		MS
Nickel		25.4595		26.2370		3		MS
Potassium	500.0	1538.6348		1631.2494		5.8		MS
Selenium		0.1500	U	0.1500	U			MS
Silver		0.3658	B	0.3662	B	0.1		MS
Sodium		22183.8446		23592.8509		6.2		MS
Thallium		0.0761	B	0.0801	B	5.1		MS
Vanadium		0.6100	U	0.6100	U			MS
Zinc		48.7553		50.7632		4		MS
Mercury		0.0280	U	0.0280	U			CV

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DUPLICATES

EPA SAMPLE NO.

MW01-14S-NWG-100914D

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		17.8072	B	18.1021	B	1.6		MS
Antimony		0.2000	U	0.2000	U			MS
Arsenic		0.1900	U	0.1900	U			MS
Barium	10.0	10.4530		10.4610		0.1		MS
Beryllium		0.0720	U	0.0720	U			MS
Cadmium		0.0909	B	0.0889	B	2.2		MS
Calcium		7813.3116		7852.9622		0.5		MS
Chromium		1.2154	B	1.0945	B	10.5		MS
Cobalt		0.0979	B	0.0626	B	44		MS
Copper		0.2300	U	0.2300	U			MS
Iron		14.0000	U	14.0000	U			MS
Lead		0.0680	U	0.0680	U			MS
Magnesium	500.0	2111.6336		2136.8879		1.2		MS
Manganese	2.0	4.4048		4.3727		0.7		MS
Nickel	1.0	1.5576		1.4443		7.5		MS
Potassium	500.0	1593.5085		1612.7063		1.2		MS
Selenium		0.3661	B	0.2873	B	24.1		MS
Silver		0.0401	B	0.0379	B	5.6		MS
Sodium		26987.8859		27383.9003		1.5		MS
Thallium		0.0480	U	0.0480	U			MS
Vanadium		0.6100	U	1.0832	B	200		MS
Zinc		1.5397	B	0.9641	B	46		MS
Mercury		0.0280	U	0.0280	U			CV

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DUPLICATES

EPA SAMPLE NO.

MW01-14S-NWG-100914-FD

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		19.2903	B	18.0886	B	6.4		MS
Antimony		0.2000	U	0.2000	U			MS
Arsenic		0.1900	U	0.1900	U			MS
Barium	10.0	10.0518		10.6783		6		MS
Beryllium		0.0720	U	0.0720	U			MS
Cadmium		0.0882	B	0.1529	B	53.7		MS
Calcium		7475.5784		8001.4986		6.8		MS
Chromium		0.8860	B	0.8941	B	0.9		MS
Cobalt		0.0783	B	0.0674	B	15		MS
Copper		0.5785	B	0.4981	B	14.9		MS
Iron		149.9033	B	14.0000	U	200		MS
Lead		0.2167	B	0.2618	B	18.9		MS
Magnesium	500.0	2025.8002		2182.0277		7.4		MS
Manganese		14.3507		14.8987		3.7		MS
Nickel	1.0	1.3940		1.5212		8.7		MS
Potassium	500.0	1540.8349		1657.9607		7.3		MS
Selenium		0.3574	B	0.3222	B	10.4		MS
Silver		0.0341	B	0.0282	B	18.9		MS
Sodium		25926.8663		27997.3042		7.7		MS
Thallium		0.0480	U	0.0480	U			MS
Vanadium		0.6100	U	0.6100	U			MS
Zinc		1.3629	B	1.4852	B	8.6		MS
Mercury		0.0280	U	0.0280	U			CV

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCS-79660

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Aluminum	2000.0	2081.27	104.1						
Antimony	100.0	102.23	102.2						
Arsenic	40.0	42.38	106.0						
Barium	2000.0	2039.19	102.0						
Beryllium	50.0	53.69	107.4						
Cadmium	50.0	53.76	107.5						
Calcium	5000.0	5024.15	100.5						
Chromium	200.0	218.56	109.3						
Cobalt	500.0	534.98	107.0						
Copper	250.0	271.80	108.7						
Iron	1000.0	1074.03	107.4						
Lead	20.0	20.95	104.8						
Magnesium	5000.0	5106.67	102.1						
Manganese	500.0	534.44	106.9						
Nickel	500.0	525.64	105.1						
Potassium	5000.0	5101.89	102.0						
Selenium	50.0	52.93	105.9						
Silver	50.0	50.90	101.8						
Sodium	5000.0	5106.30	102.1						
Thallium	50.0	51.43	102.9						
Vanadium	500.0	549.35	109.9						
Zinc	500.0	501.43	100.3						

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source: LCS(D) ID:

Aqueous LCS Source: **LCS-79678**

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Aluminum	2000.0	2012.93	100.6						
Antimony	100.0	103.67	103.7						
Arsenic	40.0	45.18	113.0						
Barium	2000.0	2052.85	102.6						
Beryllium	50.0	53.79	107.6						
Cadmium	50.0	55.84	111.7						
Calcium	5000.0	5042.51	100.9						
Chromium	200.0	221.53	110.8						
Cobalt	500.0	542.38	108.5						
Copper	250.0	277.82	111.1						
Iron	1000.0	1103.19	110.3						
Lead	20.0	21.37	106.9						
Magnesium	5000.0	4895.90	97.9						
Manganese	500.0	550.77	110.2						
Nickel	500.0	531.40	106.3						
Potassium	5000.0	4931.53	98.6						
Selenium	50.0	58.09	116.2						
Silver	50.0	52.41	104.8						
Sodium	5000.0	4913.75	98.3						
Thallium	50.0	52.39	104.8						
Vanadium	500.0	553.94	110.8						
Zinc	500.0	511.25	102.3						

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source: LCS(D) ID:

Aqueous LCS Source: **LCS-79679**

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Aluminum	2000.0	2033.98	101.7						
Antimony	100.0	105.73	105.7						
Arsenic	40.0	44.25	110.6						
Barium	2000.0	2055.41	102.8						
Beryllium	50.0	53.62	107.2						
Cadmium	50.0	56.19	112.4						
Calcium	5000.0	5130.35	102.6						
Chromium	200.0	219.53	109.8						
Cobalt	500.0	538.98	107.8						
Copper	250.0	275.10	110.0						
Iron	1000.0	1097.92	109.8						
Lead	20.0	21.59	108.0						
Magnesium	5000.0	4973.43	99.5						
Manganese	500.0	550.04	110.0						
Nickel	500.0	528.25	105.7						
Potassium	5000.0	5030.52	100.6						
Selenium	50.0	58.23	116.5						
Silver	50.0	53.53	107.1						
Sodium	5000.0	4976.42	99.5						
Thallium	50.0	52.80	105.6						
Vanadium	500.0	549.45	109.9						
Zinc	500.0	502.11	100.4						

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCSD-79678

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Aluminum	2000.0	2014.96	100.7						
Antimony	100.0	104.54	104.5						
Arsenic	40.0	44.88	112.2						
Barium	2000.0	2055.22	102.8						
Beryllium	50.0	53.82	107.6						
Cadmium	50.0	56.11	112.2						
Calcium	5000.0	5042.76	100.9						
Chromium	200.0	222.87	111.4						
Cobalt	500.0	545.25	109.1						
Copper	250.0	278.36	111.3						
Iron	1000.0	1101.25	110.1						
Lead	20.0	21.49	107.5						
Magnesium	5000.0	4889.48	97.8						
Manganese	500.0	550.25	110.1						
Nickel	500.0	535.33	107.1						
Potassium	5000.0	4943.44	98.9						
Selenium	50.0	57.82	115.6						
Silver	50.0	52.52	105.0						
Sodium	5000.0	4910.53	98.2						
Thallium	50.0	52.72	105.4						
Vanadium	500.0	553.73	110.7						
Zinc	500.0	510.09	102.0						

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ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MW03-15I-NWG-092914 Total

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	88.24		90.02		2		MS
Antimony	0.53	B	1.00	U	100		MS
Arsenic	0.19	U	0.95	U			MS
Barium	17.97		18.70		4		MS
Beryllium	0.34	B	0.39	B	15		MS
Cadmium	0.29	B	0.42	U	100		MS
Calcium	8290.24		8446.48		2		MS
Chromium	1.38	B	3.54		157		MS
Cobalt	16.71		17.32		4		MS
Copper	0.68	B	1.15	U	100		MS
Iron	6027.06		6297.59		5		MS
Lead	0.15	B	0.34	U	100		MS
Magnesium	2809.77		2844.38		1		MS
Manganese	133.65		140.19		5		MS
Nickel	25.28		25.91		3		MS
Potassium	1532.53		1487.78		3		MS
Selenium	0.15	U	0.75	U			MS
Silver	0.48	B	1.55		223		MS
Sodium	22314.38		22195.67		1		MS
Thallium	0.08	B	0.24	U	100		MS
Vanadium	0.61	U	3.05	U			MS
Zinc	47.96		52.91		10	E	MS

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9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MW03-15I-NWG-092914-F Filtered

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	9.55	B	14.50	U	100		MS
Antimony	0.20	U	1.00	U			MS
Arsenic	0.21	B	0.95	U	100		MS
Barium	18.65		18.96		2		MS
Beryllium	0.30	B	0.36	B	100		MS
Cadmium	0.08	U	0.42	U			MS
Calcium	8379.38		8799.64		5		MS
Chromium	1.03	B	3.57		247		MS
Cobalt	17.23		18.07		5		MS
Copper	1.07	B	1.15	U	100		MS
Iron	6349.72		6626.68		4		MS
Lead	0.07	U	0.34	U			MS
Magnesium	2831.35		2975.54		5		MS
Manganese	146.65		153.32		5		MS
Nickel	25.46		27.06		6		MS
Potassium	1538.63		1560.38		1		MS
Selenium	0.15	U	0.75	U			MS
Silver	0.37	B	1.18		219		MS
Sodium	22183.84		23042.07		4		MS
Thallium	0.08	B	0.24	U	100		MS
Vanadium	0.61	U	3.05	U			MS
Zinc	48.76		51.79		6		MS

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ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MW01-14S-NWG-100914 Total

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	17.81	B	19.08	B	7		MS
Antimony	0.20	U	1.11	B			MS
Arsenic	0.19	U	0.95	U			MS
Barium	10.45		11.33		8		MS
Beryllium	0.07	U	0.36	U			MS
Cadmium	0.09	B	0.42	U	100		MS
Calcium	7813.31		8128.54		4		MS
Chromium	1.22	B	4.69		284		MS
Cobalt	0.10	B	0.29	B	190		MS
Copper	0.23	U	1.15	U			MS
Iron	14.00	U	70.00	U			MS
Lead	0.07	U	0.34	U			MS
Magnesium	2111.63		2185.20		4		MS
Manganese	4.40		4.69		7		MS
Nickel	1.56		1.68		8		MS
Potassium	1593.51		1604.07		1		MS
Selenium	0.37	B	0.75	U	100		MS
Silver	0.04	B	0.11	U	100		MS
Sodium	26987.89		27650.87		3		MS
Thallium	0.05	U	0.24	U			MS
Vanadium	0.61	U	5.24				MS
Zinc	1.54	B	3.65	U	100		MS

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ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MW01-14S-NWG-100914-F Filtered

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Level (low/med): MED

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	19.29	B	20.96		9		MS
Antimony	0.20	U	1.00	U			MS
Arsenic	0.19	U	0.95	U			MS
Barium	10.05		11.09		10		MS
Beryllium	0.07	U	0.36	U			MS
Cadmium	0.09	B	0.42	U	100		MS
Calcium	7475.58		7754.43		4		MS
Chromium	0.89	B	4.04		354		MS
Cobalt	0.08	B	0.34	B	325		MS
Copper	0.58	B	1.15	U	100		MS
Iron	149.90	B	138.38	B	8		MS
Lead	0.22	B	0.34	U	100		MS
Magnesium	2025.80		2104.29		4		MS
Manganese	14.35		14.92		4		MS
Nickel	1.39		1.59		14		MS
Potassium	1540.83		1543.20		0		MS
Selenium	0.36	B	0.75	U	100		MS
Silver	0.03	B	0.11	U	100		MS
Sodium	25926.87		26286.93		1		MS
Thallium	0.05	U	0.24	U			MS
Vanadium	0.61	U	3.05	U			MS
Zinc	1.36	B	3.65	U	100		MS

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METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Instrument Type: MS InstrumentID: X1 Date: 03/02/2010

Preparation Method: 200.7

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Wavelength /Mass	CRDL	MDL
Aluminum	26.98	20	2.9
Antimony	120.90	2.0	0.20
Arsenic	74.92	2.0	0.19
Barium	134.90	10	1.3
Beryllium	9.01	1.0	0.072
Cadmium	110.90	1.0	0.084
Calcium	43.95	500	24.0
Chromium	51.94	2.0	0.16
Cobalt	58.93	1.0	0.024
Copper	64.92	2.0	0.23
Iron	56.93	200	14.0
Lead	207.97	1.0	0.068
Magnesium	24.98	500	7.8
Manganese	54.93	2.0	0.83
Nickel	59.93	1.0	0.17
Potassium	38.96	500	14.0
Selenium	81.91	5.0	0.15
Silver	106.90	1.0	0.022
Sodium	22.98	500	33.0
Thallium	202.97	1.0	0.048
Vanadium	50.94	5.0	0.61
Zinc	65.92	2.0	0.73

Comments:

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INTERNAL STANDARD ASSOCIATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN1822

ICP-MS Instrument ID: X1 Date: 10/24/2014

Analyte	Assoc. Internal Standard 1	Assoc. Internal Standard 2
Aluminum	6Li	45Sc
Antimony	115In	175Lu
Arsenic	45Sc	103Rh
Barium	115In	175Lu
Beryllium	6Li	45Sc
Boron	6Li	45Sc
Cadmium	103Rh	115In
Calcium	6Li	45Sc
Chromium	45Sc	103Rh
Cobalt	45Sc	103Rh
Copper	45Sc	103Rh
Iron	45Sc	103Rh
Lead	175Lu	209Bi
Magnesium	6Li	45Sc
Molydbenum	45Sc	103Rh
Manganese	45Sc	103Rh
Nickel	45Sc	103Rh
Potassium	6Li	45Sc
Selenium	45Sc	103Rh
Silver	103Rh	115In
Sodium	6Li	45Sc
Thallium	175Lu	209Bi
Vanadium	45Sc	103Rh
Zinc	45Sc	103Rh

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14-IN

ICP-MS TUNE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN1822

ICP-MS Instrument ID: X1 Date: 10/24/2014 X1_141024A

Element - Mass	Avg. Measured Mass (amu)	Average Peak Width (amu)	% Height	% RSD
Be - 9	8.98	0.73	5.0	0.97
Mg - 24	23.95	0.75	5.0	0.58
Mg - 25	24.97	0.75	5.0	0.65
Mg - 26	25.95	0.73	5.0	0.81
Co - 59	58.90	0.77	5.0	0.47
In - 113	112.89	0.77	5.0	0.51
In - 115	114.91	0.77	5.0	0.35
Pb - 206	205.96	0.75	5.0	0.20
Pb - 207	206.96	0.77	5.0	0.44
Pb - 208	207.98	0.75	5.0	0.34

Comments:

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15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN1822

ICP-MS Instrument ID: X1 Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	Time	Internal Standards %RI For:											
		Element Li	Q	Element Sc	Q	Element Rh	Q	Element In	Q	Element Lu	Q	Element Bi	Q
SO	1057	100		100		100		100		100		100	
S	1102	100		99		99		100		101		99	
S	1107	100		98		99		100		100		99	
S	1112	99		97		98		98		100		98	
S	1117	96		95		94		95		98		95	
S	1122	96		101		90		93		96		88	
S	1127	99		113		92		95		95		84	
ICV	1132	101		111		96		99		100		91	
ICB	1138	100		104		101		101		100		99	
ZZZZZZ	1143	99		100		99		99		100		99	
ICSA	1148	71		95		68		75		68		57	
ICSAB	1153	71		95		69		77		73		62	
ICSA	1158	88		101		89		94		96		90	
ICSAB	1203	82		91		83		89		94		88	
CCV	1208	90		97		87		91		99		91	
CCB	1213	93		94		93		96		99		98	
PBW	1218	91		90		90		93		98		98	
LCW	1223	85		84		84		89		96		94	
ZZZZZZ	1228	92		101		87		90		88		80	
ZZZZZZ	1233	98		108		98		100		94		90	
ZZZZZZ	1238	105		109		102		104		105		94	
ZZZZZZ	1244	106		103		100		101		99		100	
CCV	1249	90		92		85		88		95		86	
CCB	1254	91		91		92		94		96		94	
ZZZZZZ	1259	89		91		89		92		97		96	
MW03-02S-NWG-092914	1304	95		99		95		98		99		99	
MW03-02S-NWG-092914-F	1309	94		97		95		97		99		100	
MW03-15I-NWG-092914	1314	88		91		86		91		95		93	
MW03-15I-NWG-092914D	1319	87		91		86		90		95		92	
MW03-15I-NWG-092914S	1324	85		89		82		89		94		89	

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15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN1822

ICP-MS Instrument ID: X1 Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	Time	Internal Standards %RI For: Element Li	Q	Element Sc	Q	Element Rh	Q	Element In	Q	Element Lu	Q	Element Bi	Q
MW03-15I-NWG-092914L	1329	90		89		90		92		96		96	
ZZZZZZ	1334	87		83		87		89		96		96	
CCV	1339	86		84		81		86		94		87	
CCB	1344	87		82		86		89		94		93	
ZZZZZZ	1349	75		68		75		79		88		88	
MW03-15I-NWG-092914-F	1354	87		84		81		85		92		89	
MW03-15I-NWG-092914-FD	1359	89		89		85		89		95		91	
MW03-15I-NWG-092914-FS	1404	88		90		85		91		96		90	
MW03-15I-NWG-092914-FL	1409	94		92		93		95		98		97	
MW03-04S-NWG-093014	1414	101		101		100		100		102		100	
MW03-4S-NWG-093014-F	1419	103		104		102		102		103		101	
FD01-093014	1424	102		102		98		100		102		97	
FD01-093014-F	1429	98		97		94		97		99		95	
CCV	1434	89		86		82		86		94		86	
CCB	1439	87		80		84		87		93		92	
MW03-17S-NWG-093014	1444	87		83		82		86		92		89	
MW03-17S-NWG-093014-F	1449	87		83		83		87		92		89	
RB01-100114	1454	83		79		80		85		91		89	
RB01-100114-F	1459	84		79		81		85		91		89	
MW03-05S-NWG-100114	1505	86		81		83		87		93		91	
MW03-05S-NWG-100114-F	1510	86		81		84		87		92		91	
MW03-15S-NWG-100114	1515	88		83		84		88		93		91	
MW03-15S-NWG-100114-F	1520	88		83		84		88		93		90	
MW02-08SA-NWG-100114	1525	78		73		75		80		87		83	
MW02-08SA-NWG-100114-F	1530	78		73		74		80		87		83	
CCV	1535	81		75		74		79		87		79	
CCB	1540	78		71		76		80		86		85	
PBW	1545	75		67		72		77		85		85	
LCW	1550	74		66		70		77		85		83	
LCWD	1555	76		68		72		79		87		85	

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15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN1822

ICP-MS Instrument ID: X1 Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	Time	Internal Standards %RI For:											
		Element Li	Q	Element Sc	Q	Element Rh	Q	Element In	Q	Element Lu	Q	Element Bi	Q
MW02-05S-NWG-100214	1600	82		76		76		81		88		85	
MW02-05S-NWG-100214-F	1605	81		77		77		82		87		85	
MW03-17I-NWG-100214	1610	83		79		78		83		88		84	
MW03-17I-NWG-100214-F	1615	82		80		78		84		88		83	
MW01-10S-NWG-100214	1620	82		79		80		85		89		86	
CCV	1625	82		77		76		81		89		82	
CCB	1630	81		74		78		83		88		87	
MW01-10S-NWG-100214-F	1635	79		74		75		80		87		85	
MW01-12S-NWG-100214	1640	76		72		74		79		86		84	
MW01-12S-NWG-100214-F	1645	76		71		74		78		85		83	
MW02-03S-NWG-100314	1650	75		72		72		78		85		79	
MW02-03S-NWG-100314-F	1655	75		72		71		78		84		78	
MW02-4SA-NWG-100614	1700	76		72		72		78		83		80	
MW02-4SA-NWG-100614-F	1705	77		72		73		79		84		82	
MW03-16S-NWG-100614	1710	79		73		74		80		85		82	
CCV	1715	79		74		73		78		86		78	
CCB	1720	77		71		75		80		85		84	
MW03-16S-NWG-100614-F	1726	75		71		71		77		84		81	
RB02-100814	1731	77		71		76		81		87		85	
RB02-100814-F	1736	77		70		76		80		87		87	
MW02-09S-NWG-100814	1741	79		73		75		80		86		84	
MW02-09S-NWG-100814-F	1746	79		74		76		81		85		84	
MW02-11S-NWG-100814	1751	78		74		75		81		85		83	
MW02-11S-NWG-100814-F	1756	77		73		75		80		85		82	
ZZZZZZ	1801	76		69		75		79		84		83	
CCV	1806	78		73		72		77		85		78	
CCB	1811	77		70		74		80		85		83	
PBW	1816	73		66		71		76		83		83	
LCW	1821	72		65		69		76		83		82	
MW01-14S-NWG-100914	1826	79		75		73		79		85		80	

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15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN1822

ICP-MS Instrument ID: X1 Start Date: 10/24/2014 End Date: 10/24/2014

X1_141024A

EPA Sample No.	Time	Internal Standards %RI For:											
		Element Li	Q	Element Sc	Q	Element Rh	Q	Element In	Q	Element Lu	Q	Element Bi	Q
MW01-14S-NWG-100914D	1831	79		78		75		81		86		80	
MW01-14S-NWG-100914S	1836	77		75		71		79		83		78	
MW01-14S-NWG-100914L	1841	80		76		76		81		84		82	
CCV	1846	79		75		73		78		86		79	
CCB	1851	79		72		76		80		86		85	
MW01-14S-NWG-100914-F	1856	78		76		73		79		84		80	
MW01-14S-NWG-100914-FD	1901	80		78		75		81		85		80	
MW01-14S-NWG-100914-FS	1906	78		77		72		80		85		79	
MW01-14S-NWG-100914-FL	1911	81		76		77		82		85		84	
MW02-10S-NWG-101014	1916	75		72		72		78		83		80	
MW02-10S-NWG-101014-F	1922	74		72		71		78		83		80	
FD02-101014	1927	73		71		71		77		82		79	
FD02-101014-F	1932	72		71		71		77		82		79	
CCV	1937	80		78		74		80		87		79	
CCB	1942	79		74		77		82		86		85	

Sample Calculation

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD01-093014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN1822

Matrix (soil/water): WATER Lab Sample ID: N1822-09

Level (low/med): MED Date Received: 10/01/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	37.6			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.21	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.6			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.12	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	6660			MS	24.0	38.0	500
7440-47-3	Chromium	1.0	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	7.3			MS	0.024	0.050	1.0
7440-50-8	Copper	1.9	B		MS	0.23	0.38	2.0
7439-89-6	Iron	52.5	B		MS	14.0	20.0	200
7439-92-1	Lead	0.11	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2240			MS	7.8	12.0	500
7439-96-5	Manganese	110			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	10.1			MS	0.17	0.25	1.0
7440-09-7	Potassium	1490			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.26	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	11400			MS	33.0	50.0	500
7440-28-0	Thallium	0.077	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	0.77	B		MS	0.61	1.0	5.0
7440-66-6	Zinc	10.2		E	MS	0.73	1.0	2.0

Comments:

N1822-09C 10/24/2014 2:24:40 PM FD01-093014

User Pre-dilution: 1.000

Run	Time	6Li	7Li	9Be	10B	23Na	24Mg	25Mg	26Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:27	103.507%	0.000	0.041	13.110	T 11300.000	T 2282.000	2229.000	2234.000	37.530	T 1481.000	6659.000	101.667%
2	14:26:14	101.570%	0.000	0.035	13.550	T 11440.000	T 2330.000	2233.000	2225.000	37.540	T 1489.000	6646.000	102.061%
3	14:27:02	101.178%	0.000	0.041	13.150	T 11490.000	T 2316.000	2247.000	2259.000	37.610	T 1497.000	6680.000	101.013%
x		102.085%	0.000	0.039	13.270	T 11410.000	T 2309.000	2236.000	2239.000	37.560	T 1489.000	6662.000	101.581%
%RSD		1.221	0.000	9.049	1.824	T 0.856	T 1.075	0.426	0.770	0.115	T 0.554	0.256	0.521

Run	Time	47Ti	51V	52Cr	53Cr	53Cl O	54Fe	55Mn	56Fe	57Fe	59Co	60Ni	61Ni
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:27	0.661	0.570	1.046	ID 175.100	229.500	71.000	110.500	62.220	52.790	7.425	10.130	ID 16.840
2	14:26:14	0.429	1.136	1.062	ID 179.400	233.300	70.720	109.900	61.450	51.400	7.330	9.989	ID 14.730
3	14:27:02	0.427	0.609	1.026	ID 184.900	240.600	65.280	109.800	60.180	53.170	7.271	10.240	ID 15.580
x		0.505	0.772	1.044	ID 179.800	234.500	69.000	110.100	61.280	52.450	7.342	10.120	ID 15.720
%RSD		26.630	41.000	1.723	ID 2.721	2.409	4.676	0.330	1.684	1.772	1.054	1.233	ID 6.737

Run	Time	63Cu	65Cu	66Zn	67Zn	68Zn	75As	78Se	82Se	83Kr	89Y	95Mo	97Mo
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:27	1.768	1.931	10.430	14.880	9.614	-0.449	0.015	0.037	26.720	0.000	0.164	0.147
2	14:26:14	1.730	1.937	10.010	14.670	9.337	-0.275	0.002	0.097	24.530	0.000	0.175	0.171
3	14:27:02	1.703	1.881	10.190	14.710	9.267	-0.399	0.079	0.068	24.840	0.000	0.170	0.191
x		1.734	1.916	10.210	14.750	9.406	-0.375	0.032	0.067	25.360	0.000	0.170	0.170
%RSD		1.871	1.607	2.092	0.753	1.952	23.850	127.600	44.970	4.672	0.000	3.109	13.000

Run	Time	103Rh	107Ag	108Mo O	109Ag	111Cd	114Cd	115In	118Sn	121Sb	123Sb	135Ba	137Ba
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:27	98.442%	0.234	-4.597	0.235	0.124	0.121	99.823%	0.189	0.202	0.210	15.620	15.790
2	14:26:14	98.367%	0.285	-8.774	0.284	0.120	0.107	100.042%	0.201	0.204	0.233	15.760	15.920
3	14:27:02	97.756%	0.273	-5.019	0.292	0.119	0.115	99.327%	0.192	0.216	0.236	15.370	15.770
x		98.188%	0.264	-6.130	0.270	0.121	0.114	99.731%	0.194	0.208	0.226	15.590	15.830
%RSD		0.383	10.200	37.510	11.340	2.076	5.816	0.367	3.155	3.574	6.364	1.256	0.492

Run	Time	146Nd	152Sm	158Gd	159Tb	165Ho	166Er	175Lu	203Tl	205Tl	208Pb	209Bi	220Bkg
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:27	0.650	0.101	0.131	101.561%	101.468%	0.036	101.921%	0.075	0.078	0.107	97.428%	0.000
2	14:26:14	0.615	0.113	0.099	102.026%	101.978%	0.028	101.877%	0.078	0.076	0.108	97.568%	0.000
3	14:27:02	0.681	0.107	0.119	101.584%	101.155%	0.030	101.265%	0.078	0.078	0.110	96.867%	0.000
x		0.649	0.107	0.117	101.724%	101.533%	0.032	101.688%	0.077	0.077	0.108	97.288%	0.000
%RSD		5.095	5.670	13.940	0.258	0.409	13.590	0.361	2.219	1.279	1.316	0.381	0.000

TETRA TECH INTERNAL CORRESPONDENCE

TO: S. ANDERSON **DATE:** NOVEMBER 10, 2014

FROM: EDWARD SEDLMYER **COPIES:** DV FILE

SUBJECT: ORGANIC DATA VALIDATION – TPH (C9-C40) and GRO
FRMR NCBC DAVISVILLE, CTO WE01
SDG N1907

SAMPLES:

38/Soil/TPH (C9-C40)/GRO

03SB0010204	03SB0010406	03SB0010610
03SB0020204	03SB0020406	03SB0020610
03SB0030204	03SB0030406	03SB0030610
03SB0040204	03SB0040406	03SB0040610
03SB0050204	03SB0050406	03SB0050610
03SB0060204	03SB0060406	03SB0060610
03SB0070204	03SB0070406	03SB0070610
03SB0080204	03SB0080406	03SB0080610
03SB0090204	03SB0090406	03SB0090610
03SS0010002	03SS0020002	03SS0030002
03SS0040002	03SS0050002	03SS0060002
03SS0070002	03SS0080002	03SS0090002
FD01-101014	FD02-101014-N1907	

2/Aqueous/TPH (C9-C40)/GRO

TB01-101014	RB01-101014

OVERVIEW

The sample set for FRMR NCBC Davisville, CTO WE01, SDG N1907 consisted of thirty-eight (38) soil samples, one (1) trip blank, and one (1) rinse blank. The samples were analyzed for total petroleum hydrocarbons (TPH) (C9-C40) and gasoline range organics (GRO). The trip blank sample (TB01-101014) was analyzed for GRO only. Two (2) field duplicate sample pairs were included in this sample delivery group (SDG): 03SB0040204 / FD01-101014 and 03SB0080204 / FD02-101014-N1907.

The samples were collected by Tetra Tech on October 10, 2014 and analyzed by Spectrum Analytical, Inc. for all fractions. All analyses were conducted in accordance with EPA SW-846 Method 8015D analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Blank Results
* • Initial and Continuing Calibration
* • Surrogate Spike Recoveries
* • Internal Standards
* • Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
  • Matrix Spike / Matrix Spike Duplicate (MS/MSD) Results

* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

MS/MSD

The TPH (C9-C40) MS/MSD performed on sample 03SS0070002 had a percent recovery greater than the quality control limit in the MSD. No action was taken on this basis because the MS had and acceptable recovery.

ADDITIONAL COMMENTS

Samples 03SB0010204, 03SS0020002, 03SS0030002, 03SS0040002, 03SS0070002, 03SS0080002, and 03SS0020002 were analyzed at five-fold dilutions because of TPH (C9-C40) concentrations greater than the linear calibration range of the instrument.

Sample 03SS0050002 was analyzed at a five-fold dilution because of the TPH (C9-C40) extract being dark and viscous. The extract was not analyzed undiluted.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	03SB0010204						03SB0010406					
SDG: N1907	LAB_ID	N1907-03A						N1907-04A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.4			94.4			95.3			95.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					640	U	
TPH (C09-C40)		170						10					

PROJ_NO: 01813	NSAMPLE	03SB0010610						03SB0020204					
SDG: N1907	LAB_ID	N1907-05A						N1907-07A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.8			96.8			95.4			95.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					770	U					750	U	
TPH (C09-C40)		12						8.3					

PROJ_NO: 01813	NSAMPLE	03SB0020406						03SB0020610					
SDG: N1907	LAB_ID	N1907-08A						N1907-09A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.6			95.6			95.6			95.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					650	U					650	U	
TPH (C09-C40)		23						16					

PROJ_NO: 01813	NSAMPLE	03SB0030204						03SB0030406					
SDG: N1907	LAB_ID	N1907-11A						N1907-12A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.0			96.0			89.3			89.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					580	U					820	U	
TPH (C09-C40)		1.7	U					15					

PROJ_NO: 01813	NSAMPLE	03SB0030610						03SB0040204					
SDG: N1907	LAB_ID	N1907-13A						N1907-15A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.8			96.8			96.0			96.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					640	U					690	U	
TPH (C09-C40)		13						1.7	U				

PROJ_NO: 01813	NSAMPLE	03SB0040406						03SB0040610					
SDG: N1907	LAB_ID	N1907-16A						N1907-17A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.5			93.5			95.9			95.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					720	U					660	U	
TPH (C09-C40)		8.8						14					

PROJ_NO: 01813	NSAMPLE	03SB0050204						03SB0050406					
SDG: N1907	LAB_ID	N1907-19A						N1907-20A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.7			93.7			93.9			93.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					800	U					710	U	
TPH (C09-C40)		17						8.2					

PROJ_NO: 01813	NSAMPLE	03SB0050610						03SB0060204					
SDG: N1907	LAB_ID	N1907-22A						N1907-24A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.8			95.8			97.3			97.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					690	U					810	U	
TPH (C09-C40)		11						21					

PROJ_NO: 01813	NSAMPLE	03SB0060406						03SB0060610					
SDG: N1907	LAB_ID	N1907-25A						N1907-26A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	91.3			91.3			93.4			93.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					650	U					690	U	
TPH (C09-C40)		12						14					

PROJ_NO: 01813	NSAMPLE	03SB0070204						03SB0070406					
SDG: N1907	LAB_ID	N1907-28A						N1907-29A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.9			96.9			97.8			97.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					630	U					530	U	
TPH (C09-C40)		18						35					

PROJ_NO: 01813	NSAMPLE	03SB0070610						03SB0080204					
SDG: N1907	LAB_ID	N1907-30A						N1907-32A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.7			94.7			96.5			96.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					680	U	
TPH (C09-C40)		34						14					

PROJ_NO: 01813	NSAMPLE	03SB0080406						03SB0080610					
SDG: N1907	LAB_ID	N1907-33A						N1907-34A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.8			95.8			91.5			91.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					620	U					990	U	
TPH (C09-C40)		12						13					

PROJ_NO: 01813	NSAMPLE	03SB0090204						03SB0090406					
SDG: N1907	LAB_ID	N1907-36A						N1907-37A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.8			95.8			98.0			98.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					700	U					670	U	
TPH (C09-C40)		15						25					

PROJ_NO: 01813	NSAMPLE	03SB0090610						03SS0010002					
SDG: N1907	LAB_ID	N1907-38A						N1907-02A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.0			92.0			96.4			96.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					930	U	
TPH (C09-C40)		10						8.7					

PROJ_NO: 01813	NSAMPLE	03SS0020002						03SS0030002					
SDG: N1907	LAB_ID	N1907-06A						N1907-10A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.4			95.4			96.6			96.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					760	U					730	U	
TPH (C09-C40)		100						190					

PROJ_NO: 01813	NSAMPLE	03SS0040002						03SS0050002					
SDG: N1907	LAB_ID	N1907-14A						N1907-18A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	97.0			97.0			93.6			93.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					650	U					840	U	
TPH (C09-C40)		160						9	U				

PROJ_NO: 01813	NSAMPLE	03SS0060002						03SS0070002					
SDG: N1907	LAB_ID	N1907-23A						N1907-27A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	91.9			91.9			95.4			95.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					860	U					710	U	
TPH (C09-C40)		15						540					

PROJ_NO: 01813	NSAMPLE	03SS0080002						03SS0090002					
SDG: N1907	LAB_ID	N1907-31A						N1907-35A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	97.0			97.0			93.6			93.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					680	U					790	U	
TPH (C09-C40)		290						530					

PROJ_NO: 01813	NSAMPLE	FD01-101014						FD02-101014-N1907					
SDG: N1907	LAB_ID	N1907-21A						N1907-39A					
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.3			96.3			96.5			96.5		
	DUP_OF	03SB0040204			03SB0040204			03SB0080204			03SB0080204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					680	U					680	U	
TPH (C09-C40)		8.8						12					

PROJ_NO: 01813	NSAMPLE	RB01-101014						TB01-101014		
SDG: N1907	LAB_ID	N1907-40A						N1907-01A		
FRACTION: PET	SAMP_DATE	10/10/2014						10/10/2014		
MEDIA: WATER	QC_TYPE	RB						TB		
	UNITS	MG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U		1000	U	
TPH (C09-C40)		0.05	U							

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0010204
Lab ID: N1907-03
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_S**		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/15/2014 10:43	79492
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/15/2014 10:43	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0010406
Lab ID: N1907-04
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/20/2014 11:31	79586
Surrogate: Bromofluorobenzene	97.6			79-118	%REC	1	10/20/2014 11:31	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0010610
Lab ID: N1907-05
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/20/2014 11:52	79586
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/20/2014 11:52	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S.- Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0020204
Lab ID: N1907-07
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/15/2014 11:32	79492
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/15/2014 11:32	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0020406
Lab ID: N1907-08
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/20/2014 12:15	79586
Surrogate: Bromofluorobenzene	96.9			79-118	%REC	1	10/20/2014 12:15	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0020610
Lab ID: N1907-09

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/20/2014 12:38	79586
Surrogate: Bromofluorobenzene	93.5			79-118	%REC	1	10/20/2014 12:38	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0030204
Lab ID: N1907-11
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1400 ^	1400	ug/Kg	1	10/15/2014 12:18	79492
Surrogate: Bromofluorobenzene	98.5			79-118	%REC	1	10/15/2014 12:18	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0030406
Lab ID: N1907-12

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2100 ^	2100	ug/Kg	1	10/20/2014 13:01	79586
Surrogate: Bromofluorobenzene	88.2			79-118	%REC	1	10/20/2014 13:01	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0030610
Lab ID: N1907-13

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/20/2014 13:30	79586
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/20/2014 13:30	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0040204
Lab ID: N1907-15
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/15/2014 13:08	79492
Surrogate: Bromofluorobenzene	96.1			79-118	%REC	1	10/15/2014 13:08	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0040406
Lab ID: N1907-16
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/20/2014 13:51	79586
Surrogate: Bromofluorobenzene	96.3			79-118	%REC	1	10/20/2014 13:51	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0040610
Lab ID: N1907-17

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/20/2014 14:20	79586
Surrogate: Bromofluorobenzene	99.4			79-118	%REC	1	10/20/2014 14:20	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0050204
Lab ID: N1907-19

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/15/2014 13:55	79492
Surrogate: Bromofluorobenzene	96.7			79-118	%REC	1	10/15/2014 13:55	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0050406
Lab ID: N1907-20
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/20/2014 14:44	79586
Surrogate: Bromofluorobenzene	95.2			79-118	%REC	1	10/20/2014 14:44	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0050610
Lab ID: N1907-22
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/20/2014 15:06	79586
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/20/2014 15:06	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0060204
Lab ID: N1907-24
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/15/2014 15:03	79492
Surrogate: Bromofluorobenzene	91.8			79-118	%REC	1	10/15/2014 15:03	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0060406
Lab ID: N1907-25
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/20/2014 15:27	79586
Surrogate: Bromofluorobenzene	99.1			79-118	%REC	1	10/20/2014 15:27	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0060610
Lab ID: N1907-26

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/21/2014 12:47	79621
Surrogate: Bromofluorobenzene	83.7			79-118	%REC	1	10/21/2014 12:47	79621

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0070204
Lab ID: N1907-28
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/15/2014 16:35	79492
Surrogate: Bromofluorobenzene	97.5			79-118	%REC	1	10/15/2014 16:35	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0070406
Lab ID: N1907-29
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_S**		
Gasoline Range Organics	ND		1300 ^	1300	ug/Kg	1	10/21/2014 13:19	79621
Surrogate: Bromofluorobenzene	97.5			79-118	%REC	1	10/21/2014 13:19	79621

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0070610
Lab ID: N1907-30
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/21/2014 13:43	79621
Surrogate: Bromofluorobenzene	98.7			79-118	%REC	1	10/21/2014 13:43	79621

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0080204
Lab ID: N1907-32
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/16/2014 9:45	79528
Surrogate: Bromofluorobenzene	99.0			79-118	%REC	1	10/16/2014 9:45	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0080406
Lab ID: N1907-33
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/21/2014 14:08	79621
Surrogate: Bromofluorobenzene	108			79-118	%REC	1	10/21/2014 14:08	79621

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0080610
Lab ID: N1907-34

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 13:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2500 ^	2500	ug/Kg	1	10/21/2014 14:33	79621
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/21/2014 14:33	79621

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0090204
Lab ID: N1907-36
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 13:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/16/2014 10:28	79528
Surrogate: Bromofluorobenzene	92.6			79-118	%REC	1	10/16/2014 10:28	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0090406
Lab ID: N1907-37
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 13:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/21/2014 14:54	79621
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/21/2014 14:54	79621

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0090610
Lab ID: N1907-38
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 13:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/21/2014 15:17	79621
Surrogate: Bromofluorobenzene	98.8			79-118	%REC	1	10/21/2014 15:17	79621

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0010002
Lab ID: N1907-02
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2300 ^	2300	ug/Kg	1	10/15/2014 10:18	79492
Surrogate: Bromofluorobenzene	96.3			79-118	%REC	1	10/15/2014 10:18	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0020002
Lab ID: N1907-06

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/15/2014 11:07	79492
Surrogate: Bromofluorobenzene	105			79-118	%REC	1	10/15/2014 11:07	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0030002
Lab ID: N1907-10
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/15/2014 11:54	79492
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/15/2014 11:54	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0040002
Lab ID: N1907-14
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/15/2014 12:46	79492
Surrogate: Bromofluorobenzene	99.7			79-118	%REC	1	10/15/2014 12:46	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0050002
Lab ID: N1907-18
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2100 ^	2100	ug/Kg	1	10/15/2014 13:33	79492
Surrogate: Bromofluorobenzene	105			79-118	%REC	1	10/15/2014 13:33	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0060002
Lab ID: N1907-23
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2100 ^	2100	ug/Kg	1	10/15/2014 14:40	79492
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/15/2014 14:40	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0070002
Lab ID: N1907-27

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/15/2014 16:13	79492
Surrogate: Bromofluorobenzene	98.0			79-118	%REC	1	10/15/2014 16:13	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0080002
Lab ID: N1907-31
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/16/2014 9:23	79528
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/16/2014 9:23	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0090002 Project: CED Area, WE01-Davisville
Lab ID: N1907-35 Collection Date: 10/10/14 13:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/16/2014 10:07	79528
Surrogate: Bromofluorobenzene	108			79-118	%REC	1	10/16/2014 10:07	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD01-101014
Lab ID: N1907-21

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/15/2014 14:19	79492
Surrogate: Bromofluorobenzene	97.9			79-118	%REC	1	10/15/2014 14:19	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD02-101014
Lab ID: N1907-39
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							**GRO_S**	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/16/2014 10:52	79528
Surrogate: Bromofluorobenzene	99.5			79-118	%REC	1	10/16/2014 10:52	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB01-101014
Lab ID: N1907-01
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 8:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2500 ^	2500	ug/Kg	1	10/15/2014 9:57	79492
Surrogate: Bromofluorobenzene	90.5			79-118	%REC	1	10/15/2014 9:57	79492

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB01-101014
Lab ID: N1907-40

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 15:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/14/2014 15:41	79493
Surrogate: Bromofluorobenzene	99.4			87-112	%REC	1	10/14/2014 15:41	79493

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0010204 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-03 **Collection Date:** 10/10/14 9:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	170		37 ^	37	mg/Kg	5	10/16/2014 19:19	79497
Surrogate: ortho-Terphenyl	70.4			50-150	%REC	5	10/16/2014 19:19	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0010406
Lab ID: N1907-04
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	10		7.2 ^	7.2	mg/Kg	1	10/24/2014 16:13	79624
Surrogate: ortho-Terphenyl	57.2			50-150	%REC	1	10/24/2014 16:13	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0010610
Lab ID: N1907-05

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	12		7.1 ^	7.1	mg/Kg	1	10/24/2014 17:16	79624
Surrogate: ortho-Terphenyl	70.6			50-150	%REC	1	10/24/2014 17:16	79624

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/30/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0020204
Lab ID: N1907-07
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.3		7.3 ^	7.3	mg/Kg	1	10/16/2014 16:14	79497
Surrogate: ortho-Terphenyl	53.7			50-150	%REC	1	10/16/2014 16:14	79497

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0020406
Lab ID: N1907-08
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	23		7.3 ^	7.3	mg/Kg	1	10/24/2014 17:37	79624
Surrogate: ortho-Terphenyl	92.3			50-150	%REC	1	10/24/2014 17:37	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0020610 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-09 **Collection Date:** 10/10/14 9:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	16		7.2 ^	7.2	mg/Kg	1	10/24/2014 17:57	79624
Surrogate: ortho-Terphenyl	79.6			50-150	%REC	1	10/24/2014 17:57	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0030204
Lab ID: N1907-11
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.2 ^	7.2	mg/Kg	1	10/16/2014 16:34	79497
Surrogate: ortho-Terphenyl	53.8			50-150	%REC	1	10/16/2014 16:34	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0030406
Lab ID: N1907-12
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	15		7.8 ^	7.8	mg/Kg	1	10/24/2014 18:18	79624
Surrogate: ortho-Terphenyl	72.5			50-150	%REC	1	10/24/2014 18:18	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0030610
Lab ID: N1907-13
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	13		7.2 ^	7.2	mg/Kg	1	10/24/2014 20:03	79624
Surrogate: ortho-Terphenyl	76.8			50-150	%REC	1	10/24/2014 20:03	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0040204
Lab ID: N1907-15
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.2 ^	7.2	mg/Kg	1	10/16/2014 16:55	79497
Surrogate: ortho-Terphenyl	63.8			50-150	%REC	1	10/16/2014 16:55	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0040406
Lab ID: N1907-16
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.8		7.5 ^	7.5	mg/Kg	1	10/24/2014 12:47	79624
Surrogate: ortho-Terphenyl	70.7			50-150	%REC	1	10/24/2014 12:47	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0040610 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-17 **Collection Date:** 10/10/14 11:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	14		7.2 ^	7.2	mg/Kg	1	10/24/2014 20:23	79624
Surrogate: ortho-Terphenyl	64.1			50-150	%REC	1	10/24/2014 20:23	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0050204
Lab ID: N1907-19
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	17		7.4 ^	7.4	mg/Kg	1	10/17/2014 11:32	79497
Surrogate: ortho-Terphenyl	67.3			50-150	%REC	1	10/17/2014 11:32	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0050406
Lab ID: N1907-20

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.2		7.4 ^	7.4	mg/Kg	1	10/24/2014 13:08	79624
Surrogate: ortho-Terphenyl	60.8			50-150	%REC	1	10/24/2014 13:08	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0050610 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-22 **Collection Date:** 10/10/14 11:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	11		7.2 ^	7.2	mg/Kg	1	10/24/2014 13:28	79624
Surrogate: ortho-Terphenyl	72.4			50-150	%REC	1	10/24/2014 13:28	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0060204
Lab ID: N1907-24
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	21		7.2 ^	7.2	mg/Kg	1	10/16/2014 20:41	79497
Surrogate: ortho-Terphenyl	56.7			50-150	%REC	1	10/16/2014 20:41	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0060406
Lab ID: N1907-25
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	12		7.6 ^	7.6	mg/Kg	1	10/24/2014 13:49	79624
Surrogate: ortho-Terphenyl	77.0			50-150	%REC	1	10/24/2014 13:49	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0060610
Lab ID: N1907-26

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	14		7.5 ^	7.5	mg/Kg	1	10/24/2014 14:10	79624
Surrogate: ortho-Terphenyl	58.1			50-150	%REC	1	10/24/2014 14:10	79624

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0070204
Lab ID: N1907-28
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	18		7.2 ^	7.2	mg/Kg	1	10/16/2014 21:01	79497
Surrogate: ortho-Terphenyl	64.3			50-150	%REC	1	10/16/2014 21:01	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0070406
Lab ID: N1907-29
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	35		7.1 ^	7.1	mg/Kg	1	10/24/2014 20:44	79624
Surrogate: ortho-Terphenyl	75.5			50-150	%REC	1	10/24/2014 20:44	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0070610
Lab ID: N1907-30

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	34		7.3 ^	7.3	mg/Kg	1	10/24/2014 21:05	79624
Surrogate: ortho-Terphenyl	80.6			50-150	%REC	1	10/24/2014 21:05	79624

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0080204 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-32 **Collection Date:** 10/10/14 12:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	14		7.2 ^	7.2	mg/Kg	1	10/16/2014 21:22	79497
Surrogate: ortho-Terphenyl	59.9			50-150	%REC	1	10/16/2014 21:22	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0080406
Lab ID: N1907-33
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	12		7.2 ^	7.2	mg/Kg	1	10/24/2014 14:30	79624
Surrogate: ortho-Terphenyl	59.3			50-150	%REC	1	10/24/2014 14:30	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0080610 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-34 **Collection Date:** 10/10/14 13:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	13		7.6 ^	7.6	mg/Kg	1	10/24/2014 14:51	79624
Surrogate: ortho-Terphenyl	63.1			50-150	%REC	1	10/24/2014 14:51	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

10/30/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0090204
Lab ID: N1907-36

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 13:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	15		7.2 ^	7.2	mg/Kg	1	10/16/2014 21:42	79497
Surrogate: ortho-Terphenyl	53.2			50-150	%REC	1	10/16/2014 21:42	79497

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0090406 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-37 **Collection Date:** 10/10/14 13:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	25		7.1 ^	7.1	mg/Kg	1	10/24/2014 21:26	79624
Surrogate: ortho-Terphenyl	60.7			50-150	%REC	1	10/24/2014 21:26	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0090610 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-38 **Collection Date:** 10/10/14 13:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	10		7.5 ^	7.5	mg/Kg	1	10/24/2014 15:53	79624
Surrogate: ortho-Terphenyl	69.1			50-150	%REC	1	10/24/2014 15:53	79624

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0010002 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-02 **Collection Date:** 10/10/14 9:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.7		7.2 ^	7.2	mg/Kg	1	10/16/2014 15:53	79497
Surrogate: ortho-Terphenyl	60.3			50-150	%REC	1	10/16/2014 15:53	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0020002
Lab ID: N1907-06

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 9:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	100		36 ^	36	mg/Kg	5	10/16/2014 20:20	79497
Surrogate: ortho-Terphenyl	63.8			50-150	%REC	5	10/16/2014 20:20	79497

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0030002
Lab ID: N1907-10

Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	190		36 ^	36	mg/Kg	5	10/17/2014 10:32	79497
Surrogate: ortho-Terphenyl	80.3			50-150	%REC	5	10/17/2014 10:32	79497

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0040002
Lab ID: N1907-14
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 10:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	160		35 ^	35	mg/Kg	5	10/16/2014 20:00	79497
Surrogate: ortho-Terphenyl	77.0			50-150	%REC	5	10/16/2014 20:00	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0050002
Lab ID: N1907-18
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 11:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		37 ^	37	mg/Kg	5	10/16/2014 23:24	79497
Surrogate: ortho-Terphenyl	83.8			50-150	%REC	5	10/16/2014 23:24	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0060002 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-23 **Collection Date:** 10/10/14 11:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	15		7.6 ^	7.6	mg/Kg	1	10/17/2014 11:52	79497
Surrogate: ortho-Terphenyl	55.3			50-150	%REC	1	10/17/2014 11:52	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0070002
Lab ID: N1907-27
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	540		180 ^	180	mg/Kg	5	10/16/2014 23:45	79497
Surrogate: ortho-Terphenyl	127			50-150	%REC	5	10/16/2014 23:45	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0080002
Lab ID: N1907-31
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 12:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	290		36 ^	36	mg/Kg	5	10/17/2014 0:46	79497
Surrogate: ortho-Terphenyl	59.3			50-150	%REC	5	10/17/2014 0:46	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0090002
Lab ID: N1907-35
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 13:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	530		37 ^	37	mg/Kg	5	10/17/2014 1:07	79497
Surrogate: ortho-Terphenyl	56.7			50-150	%REC	5	10/17/2014 1:07	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD01-101014
Lab ID: N1907-21
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.8		7.2 ^	7.2	mg/Kg	1	10/16/2014 17:36	79497
Surrogate: ortho-Terphenyl	57.2			50-150	%REC	1	10/16/2014 17:36	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD02-101014 **Project:** CED Area, WE01-Davisville
Lab ID: N1907-39 **Collection Date:** 10/10/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	12		7.1 ^	7.1	mg/Kg	1	10/16/2014 22:03	79497
Surrogate: ortho-Terphenyl	59.0			50-150	%REC	1	10/16/2014 22:03	79497

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB01-101014
Lab ID: N1907-40
Project: CED Area, WE01-Davisville
Collection Date: 10/10/14 15:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/20/2014 17:56	79558
Surrogate: ortho-Terphenyl	83.6			50-150	%REC	1	10/20/2014 17:56	79558

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: GRO / TPH (C9-C40)

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Modlin Date: 7/11/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

Case: FRMR NCBC Davisville SDG: N1907

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Ludlum Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Ledlow Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FMR NEBC Dansville SDG: N1907

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlazo

Date: 01/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Hedlund Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Jan15v1/19 SDG: N1907

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Hedley Date: 11/11/19

See DV Report

EPA NE - Data Validation Worksheet

Case: FEMR NCBC Davisville SDG: N1907

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sedlyn

Date: 1/31/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Sedlmayer Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Hedlund Date: 4/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCRC Davisville SDG: K1907

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sedlazo Date: 4/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlazo

Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FEMR NCBC Davisville SDG: N1907

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlazo

Date: 11/11/14

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)
Comments:									

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: Edward Sedlay Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Sedlazo Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Louisville SDG: N1907

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Dellinger Date: 11/11/14

See SV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sedlmyer

Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FMC NCBC Davisville SDG: N1907

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedberg Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10}		Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10}		Affected Analytes	Action (Detection/ND)
		Water	Soil			Water	Soil		
		50-150	50-150			50-150	50-150		
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1,2,2-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Ledlow Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward Sudlow Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDS (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedbyn Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Sedlmyer Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNCBC Davisville SDG: N1907

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Lechman Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlazo Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlmyer Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. Y N

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? Y N

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Fedlyn Date: 11/01/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Ludlow Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Ledlow Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Ridlon Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Redlmyer

Date: 11/11/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlmyer Date: 11/11/14

See DV Report

EPA NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward Sedlmyer Date: 4/11/14

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlazo Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? Y N

If no, list sample numbers

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sutlayn Date: 11/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? Y N

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlazo Date: 11/11/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1907

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Sullivan

Date: 11/11/14

APPENDIX D

SUPPORT DOCUMENTATION

FORMER NCBC DAVISVILLE
SOIL DATA
N1907

FRACTION	CHEMICAL	03SB0040204	UNITS	FD01-101014	RPD	D
PET	TPH (C09-C40)	ND	MG/KG	8.8	200.00	8.80

O.K. < 2xRL

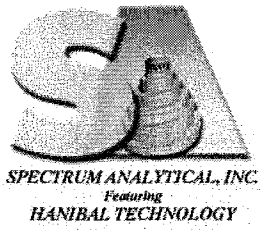
Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

FORMER NCBC DAVISVILLE
SOIL DATA
N1907

FRACTION	CHEMICAL	03SB0080204	UNITS	FD02-101014-N1907	RPD	D
PET	TPH (C09-C40)	14	MG/KG	12	15.38	2.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Report Date:
30-Oct-14 11:28



☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Attn: Amy Thomson

Work Order: N1907
Project : CED Area, WE01-Davisville
Project #:

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1907-01	TB01-101014	Soil	10-Oct-14 08:30	10-Oct-14 16:30
N1907-02	03SS0010002	Soil	10-Oct-14 09:00	10-Oct-14 16:30
N1907-03	03SB0010204	Soil	10-Oct-14 09:05	10-Oct-14 16:30
N1907-04	03SB0010406	Soil	10-Oct-14 09:15	10-Oct-14 16:30
N1907-05	03SB0010610	Soil	10-Oct-14 09:20	10-Oct-14 16:30
N1907-06	03SS0020002	Soil	10-Oct-14 09:30	10-Oct-14 16:30
N1907-07	03SB0020204	Soil	10-Oct-14 09:35	10-Oct-14 16:30
N1907-08	03SB0020406	Soil	10-Oct-14 09:40	10-Oct-14 16:30
N1907-09	03SB0020610	Soil	10-Oct-14 09:45	10-Oct-14 16:30
N1907-10	03SS0030002	Soil	10-Oct-14 10:00	10-Oct-14 16:30
N1907-11	03SB0030204	Soil	10-Oct-14 10:05	10-Oct-14 16:30
N1907-12	03SB0030406	Soil	10-Oct-14 10:10	10-Oct-14 16:30
N1907-13	03SB0030610	Soil	10-Oct-14 10:15	10-Oct-14 16:30
N1907-14	03SS0040002	Soil	10-Oct-14 10:50	10-Oct-14 16:30
N1907-15	03SB0040204	Soil	10-Oct-14 10:55	10-Oct-14 16:30
N1907-16	03SB0040406	Soil	10-Oct-14 11:00	10-Oct-14 16:30
N1907-17	03SB0040610	Soil	10-Oct-14 11:05	10-Oct-14 16:30
N1907-18	03SS0050002	Soil	10-Oct-14 11:15	10-Oct-14 16:30
N1907-19	03SB0050204	Soil	10-Oct-14 11:20	10-Oct-14 16:30
N1907-20	03SB0050406	Soil	10-Oct-14 11:25	10-Oct-14 16:30
N1907-21	FD01-101014	Soil	10-Oct-14 00:00	10-Oct-14 16:30
N1907-22	03SB0050610	Soil	10-Oct-14 11:30	10-Oct-14 16:30
N1907-23	03SS0060002	Soil	10-Oct-14 11:45	10-Oct-14 16:30
N1907-24	03SB0060204	Soil	10-Oct-14 11:50	10-Oct-14 16:30
N1907-25	03SB0060406	Soil	10-Oct-14 11:55	10-Oct-14 16:30
N1907-26	03SB0060610	Soil	10-Oct-14 12:00	10-Oct-14 16:30
N1907-27	03SS0070002	Soil	10-Oct-14 12:15	10-Oct-14 16:30
N1907-28	03SB0070204	Soil	10-Oct-14 12:20	10-Oct-14 16:30
N1907-29	03SB0070406	Soil	10-Oct-14 12:25	10-Oct-14 16:30
N1907-30	03SB0070610	Soil	10-Oct-14 12:30	10-Oct-14 16:30
N1907-31	03SS0080002	Soil	10-Oct-14 12:45	10-Oct-14 16:30
N1907-32	03SB0080204	Soil	10-Oct-14 12:50	10-Oct-14 16:30
N1907-33	03SB0080406	Soil	10-Oct-14 12:55	10-Oct-14 16:30
N1907-34	03SB0080610	Soil	10-Oct-14 13:00	10-Oct-14 16:30
N1907-35	03SS0090002	Soil	10-Oct-14 13:15	10-Oct-14 16:30
N1907-36	03SB0090204	Soil	10-Oct-14 13:20	10-Oct-14 16:30
N1907-37	03SB0090406	Soil	10-Oct-14 13:25	10-Oct-14 16:30
N1907-38	03SB0090610	Soil	10-Oct-14 13:30	10-Oct-14 16:30
N1907-39	FD02-101014	Soil	10-Oct-14 00:00	10-Oct-14 16:30
N1907-40	RB01-101014	Aqueous	10-Oct-14 15:45	10-Oct-14 16:30

Report Date:
30-Oct-14 11:28

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☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1907
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

N1907

SPECTRUM ANALYTICAL, INC.
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CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling: Quick Turn

TAT- Indicate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech Inc
6161 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P. Seward

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= Methanol (5ml) 12= _____

List preservative code below: H — —

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials (w/ preservative)	# of Amber Glass (4oz)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (C6-C10) MAPH Naphthalene		TPH DRO (C24-C40) Total Solids						
N1907		2014																
c1	TB01-101014	10/10	0830	G	QC	1	—	—	—	1		—						soil trip blank
c2	03SS0010002	10/10	0900	G	SO	1	1	—	—	1		1						
c3	03SB0010304	10/10	0905	G	SO	1	1	—	—	1		1						
c4	03SB0010406	10/10	0915	G	SO	1	1	—	—	1		1						On Hold
c5	03SB0010610	10/10	0920	G	SO	1	1	—	—	1		1						On Hold
c6	03SS0020002	10/10	0930	G	SO	1	1	—	—	1		1						
c7	03SB0020304	10/10	0935	G	SO	1	1	—	—	1		1						
c8	03SB0020406	10/10	0940	G	SO	1	1	—	—	1		1						On Hold
c9	03SB0020610	10/10	0945	G	SO	1	1	—	—	1		1						On Hold
c10	03SS0030002	10/10	1000	G	SO	1	1	—	—	1		1						

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kaylee Jalkut/K. Jalkut		10/10/14	1630	3.1°C
				2.5°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1907

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CHAIN OF CUSTODY RECORD

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☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling: Quick Turn
TAT- Indicate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/o Tetra Tech Inc
661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 (WE01)
Site Name: NCBC Davisville, CERCLA Area, TPH Delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut & P Seward

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= Methanol (5m) 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

List preservative code below: (11 | 1)

QA/QC Reporting Notes: Refer to Lab Proposal QA/QC

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Lab Id: N1907	Sample Id:	Date: 2014	Time:	Type	Matrix	Containers: # of VOA Vials (Sphere Vials)	# of Amber Glass (4oz Jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (Methanol)	TPH DRO (Extractable) Total Solids						
11	03SB00302O4	10/10	1005	G	SO	1	1	1	1	1		1						
12	03SB00304O6	10/10	1010	G	SO	1	1	1	1	1		1						On Hold
13	03SB00306I0	10/10	1015	G	SO	1	1	1	1	1		1						On Hold
14	03SS00400O2	10/10	1050	G	SO	1	1	1	1	1		1						
15	03SB00402O4	10/10	1055	G	SO	1	1	1	1	1		1						
16	03SB00404O6	10/10	1100	G	SO	1	1	1	1	1		1						On Hold
17	03SB00406I0	10/10	1105	G	SO	1	1	1	1	1		1						On Hold
18	03SS00500O2	10/10	1115	G	SO	1	1	1	1	1		1						
19	03SB00502O4	10/10	1120	G	SO	1	1	1	1	1		1						
20	03SB00504O6	10/10	1125	G	SO	1	1	1	1	1		1						On Hold

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kayleigh Jalkut / K. Jalkut		10/10/14	1630	3.1°C
				2.5°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1907

SPECTRUM ANALYTICAL, INC.
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CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling: Quick Turn

TAT- Ind icate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o TetraTech, Inc.
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH Delineation
Location: N. Kingstown State: RI
Sampler(s): K. Jalkut P Seward

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Methanol (5ml) 12= _____

List preservative code below: 11 —

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1907 Lab Id:	Sample Id:	2014 Date:	Time:	Type	Matrix	Containers: # of VOA Vials (HCl and unpres)	# of Amber Glass (8oz jars)	# of Clear Glass	# of Plastic	Analyses: TPHGRO (MTBE-NAPHTHALENE)		TPH DRO (EX-CHO) TOTAL SOLIDS						QA/QC Reporting Level
21	FD01-101014	10/10	0000	G	SO	1	1	—	—	1		1						
22	03SB005 0610	10/10	1130	G	SO	1	1	—	—	1		1						On Hold
23	03SS006 0002	10/10	1145	G	SO	1	1	—	—	1		1						
24	03SB006 0304	10/10	1150	G	SO	1	1	—	—	1		1						
25	03SB006 0406	10/10	1155	G	SO	1	1	—	—	1		1						On Hold
26	03SB006 0610	10/10	1200	G	SO	1	1	—	—	1		1						On Hold
27	03SS007 0002	10/10	1215	G	SO	3	2	—	—	3		2						Lab QC volume
28	03SB007 0304	10/10	1220	G	SO	1	1	—	—	1		1						
29	03SB007 0406	10/10	1225	G	SO	1	1	—	—	1		1						On Hold
30	03SB007 0610	10/10	1230	G	SO	1	1	—	—	1		1						On Hold

State-specific reporting standards: Report to lowest MDL

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kayleen Wood/K. Jalkut		10/10/14	1630	3.1°c
				2.5°c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1907

SPECTRUM ANALYTICAL, INC.
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Page 4 of 4

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling: Quick Turn
TAT- Ind icate Date Needed: _____
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/o Tetra Tech Inc
(401 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH Delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P Sawyer

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Methanol (5ml) 12= _____

List preservative code below: 11 – 2 –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vial)	# of Amber Glass (40z, 1L)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (C6-C10 Gasoline)	TPH DRO (C9-C40) TO TAL SOLIDS	TPH GRO (C6-C10 Gasoline)	TPH DRO (C9-C40) 1L Amber	QA/QC Reporting Level
N1907		2014												
31	03SS0080002	10/10	1245	G	SO	1	1	–	–	1		1		
32	03SB0080204	10/10	1250	G	SO	1	1	–	–	1		1		
33	03SB0080406	10/10	1255	G	SO	1	1	–	–	1		1		On Hold
34	03SB0080610	10/10	1300	G	SO	1	1	–	–	1		1		On Hold
35	03SS0090002	10/10	1315	G	SO	1	1	–	–	1		1		
36	03SB0090204	10/10	1320	G	SO	1	1	–	–	1		1		
37	03SB0090406	10/10	1325	G	SO	1	1	–	–	1		1		On Hold
38	03SB0090610	10/10	1330	G	SO	1	1	–	–	1		1		On Hold
39	FD02-101014	10/10	0000	G	SO	1	1	–	–	1		1		
40	RB01-101014	10/10	1545	G	QC	2	2*	–	–	–		–		* 1Lamber bottle

Refer to Lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kjalkut/K. Jalkut		10/10/14	1630	2.5c
				3.1c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Edward Lawler [Warwick]

From: Sinagoga, Leeann [LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 9:27 AM
To: Edward Lawler [RI]; Jennifer Emerson [RI]; Agnes Huntley [RI]
Cc: Anderson, Scott; Ciofani, Leigh Ann; Jalkut, Kayleen; Dale, Jeffrey M CIV NAVFAC MIDLANT, EV (jeffrey.m.dale@navy.mil); Barney, David A CIV OASN (EI&E), BRAC PMO NE (david.a.barney@navy.mil); Logan, Joe
Subject: FW: TPH Results

N1907 - ✓
N1911 - ✓
N1914 → ✓
N1931 → ✓

Good Morning Ed,

I have looked over the GRO/DRO data sent on Friday.

Since we are getting a few hits > the RIDEM 500 mg/kg DRO res DEC standard, we've decided to analyze all samples for GRO/DRO.

So, please analyze all soil samples submitted (including those currently on-hold).

If you can, please continue to send preliminary results for both waters and soils.... Getting a preliminary look at the data is extremely helpful.

Thanks very much for your time and support,

Lee Ann

PS THANKS MUCH TO JENNIFER AND AGNES FOR PITCHING IN LAST WEEK WHILE YOU WERE GONE!

Lee Ann Sinagoga | Department Manager/Chemistry & Risk Assessment
Direct: 412.921.8887 | Main: 412.921.7090 | Fax: 412.921.4040
leeann.sinagoga@tetratech.com

Tetra Tech | Chemistry & Risk Assessment
661 Andersen Drive | Pittsburgh, PA 15220 | www.tetratech.com

-----Original Message-----
From: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV [mailto:jeffrey.m.dale@navy.mil]
Sent: Monday, October 20, 2014 9:13 AM
To: Sinagoga, Leeann
Cc: Anderson, Scott
Subject: RE: TPH Results

Agree 100% with you.
Thanks - got your email yesterday but have a deadline of today.
Jeff

-----Original Message-----
From: Sinagoga, Leeann [mailto:LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 8:52 AM
To: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV
Cc: Anderson, Scott
Subject: RE: TPH Results

Hi Jeff,

Just to follow up on my message yesterday...

Sedlmyer, Edward

From: Edward Lawler [RI] <elawler@spectrum-analytical.com>
Sent: Tuesday, November 11, 2014 10:38 AM
To: Sedlmyer, Edward
Subject: RE: SDG N1907 Dilution for EPH C9-C40 for sample N1907-18 (03SS0050002)

Ed—

No, that sample was not analyzed undiluted. It wasn't diluted due to elevated TPH in the analytical range, but due to co-extracted high boiling compounds that give us problems (by condensing and "gumming-up" the injection port during analysis). The extract was dark and somewhat viscous, so it was diluted prior to injection.

--Ed

From: Sedlmyer, Edward [mailto:Edward.Sedlmyer@tetratech.com]
Sent: Tuesday, November 11, 2014 9:40 AM
To: Edward Lawler [RI]
Subject: SDG N1907 Dilution for EPH C9-C40 for sample N1907-18 (03SS0050002)

Good morning Ed,

I was looking at data for SDG N1907 and the EPH (C9-C40) dilution result for sample N1907-18 (03SS0050002) is nondetect. Was the sample analyzed undiluted? Why was the sample diluted?

Thanks

Edward Sedlmyer | Chemist
Direct: 412.921.8704 | Main: 412.921.7090 | Fax: 412.921.4040
edward.sedlmyer@tetratech.com

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661 Andersen Drive Foster Plaza 7 | Pittsburgh, PA 15220-2700 | www.tetratech.com


Live Green, Work Green, Save Green

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 01
Reviewed By: KI	Log-in Date 10/10/2014
Work Order: N1907	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	3.1 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/10/2014
12. Time Received	16:30

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1907-01						M	
N1907-02						M	
N1907-03						M	
N1907-04						M	
N1907-05						M	
N1907-06						M	
N1907-07						M	
N1907-08						M	
N1907-09						M	
N1907-10						M	
N1907-11						M	
N1907-12						M	
N1907-13						M	
N1907-14						M	
N1907-15						M	
N1907-16						M	
N1907-17						M	
N1907-18						M	
N1907-19						M	
N1907-20						M	
N1907-21						M	
N1907-22						M	
N1907-23						M	
N1907-24						M	
N1907-25						M	
N1907-26						M	
N1907-27						M	
N1907-28						M	
N1907-29						M	
N1907-30						M	
N1907-31						M	
N1907-32						M	
N1907-33						M	
N1907-34						M	

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/10/2014
Work Order: N1907	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.1 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/10/2014
12. Time Received	16:30

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1907-35						M	
N1907-36						M	
N1907-37						M	
N1907-38						M	
N1907-39						M	
N1907-40						H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

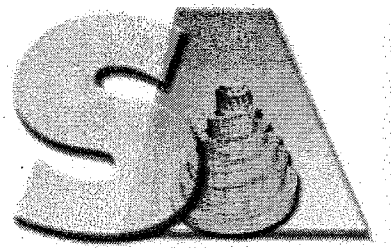
Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil A= Air
UA = Unpreserved Aqueous H = HCl
M = MeOH E = Encore
N = NaHSO4 F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

* Volatiles *

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1907

SW846 8015D GRO, Gasoline Range Organic (GRO) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D GRO

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B
Soil Samples were prepared following procedures in laboratory test code: SW5035

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: V4
Instrument Type: GC-FID/PID
Description: HP5890 A
Manufacturer: Hewlett-Packard
Model: 5890
GC Column used: 30 m X 0.53 mm ID [um thickness] RTX-502.2 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: 03SS0070002 (N1907-27BMS) and 03SS0070002 (N1907-27BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

NA--Supervisor needs to explain why no internal standards were detected during the generation of this narrative.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

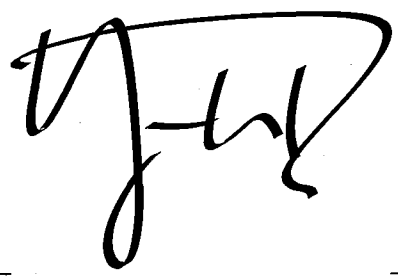
No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

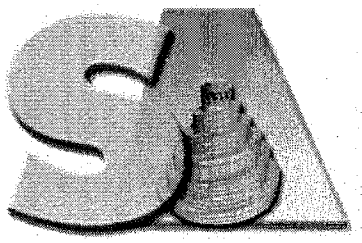
· M1 peak tailing or fronting
· M2 peak co-elution
· M3 rising or falling baseline
· M4 retention time shift
· M5 miscellaneous - under this category, the justification is explained
· M6 software did not integrate peak
· M7 partial peak integration

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____10/30/2014_____



Data Flag/Qualifiers (Page 1 of 2):

U — Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J — This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

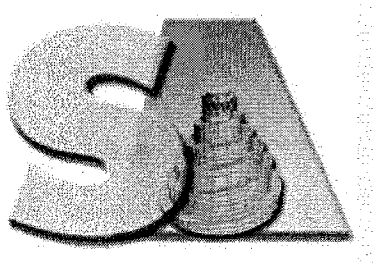
B — This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D — For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E — This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P — This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A — Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

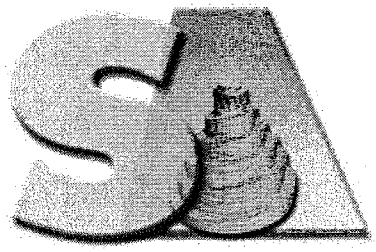


Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



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Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

CLIENT: Tetra Tech, Inc.
Work Order: N1907
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79492** SampType: **MBLK** TestCode: **GRO_S** Prep Date: **10/15/14 8:25** Run ID: **V4_141015A**
Client ID: **MB-79492** Batch ID: **79492** Units: **ug/Kg** Analysis Date: **10/15/14 9:34** SeqNo: **2167773**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	18.37		250	20.00	0	91.9	79	118	0			

Sample ID: **MB-79528** SampType: **MBLK** TestCode: **GRO_S** Prep Date: **10/16/14 7:23** Run ID: **V4_141016A**
Client ID: **MB-79528** Batch ID: **79528** Units: **ug/Kg** Analysis Date: **10/16/14 9:02** SeqNo: **2167811**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	19.22		250	20.00	0	96.1	79	118	0			

Sample ID: **MB-79586** SampType: **MBLK** TestCode: **GRO_S** Prep Date: **10/20/14 7:56** Run ID: **V4_141020A**
Client ID: **MB-79586** Batch ID: **79586** Units: **ug/Kg** Analysis Date: **10/20/14 9:29** SeqNo: **2170644**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	18.05		250	20.00	0	90.3	79	118	0			

Sample ID: **MB-79621** SampType: **MBLK** TestCode: **GRO_S** Prep Date: **10/21/14 7:48** Run ID: **V4_141021A**
Client ID: **MB-79621** Batch ID: **79621** Units: **ug/Kg** Analysis Date: **10/21/14 10:03** SeqNo: **2169955**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	18.75		250	20.00	0	93.7	79	118	0			

Sample ID: **LCS-79492** SampType: **LCS** TestCode: **GRO_S** Prep Date: **10/15/14 8:25** Run ID: **V4_141015A**
Client ID: **LCS-79492** Batch ID: **79492** Units: **ug/Kg** Analysis Date: **10/15/14 9:09** SeqNo: **2167772**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	24210	2500 ^	2500	25000	0	96.8	80	120	0			
Surrogate: Bromofluorobenzene	18.22		250	20.00	0	91.1	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1907
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: LCS-79528	SampType: LCS	TestCode: GRO_S	Prep Date: 10/16/14 7:23	Run ID: V4_141016A
Client ID: LCS-79528	Batch ID: 79528	Units: ug/Kg	Analysis Date: 10/16/14 8:35	SeqNo: 2167810

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	27350	2500 ^	2500	25000	0	109	80	120	0			
Surrogate: Bromofluorobenzene	22.62		250	20.00	0	113	79	118	0			

Sample ID: LCS-79586	SampType: LCS	TestCode: GRO_S	Prep Date: 10/20/14 7:56	Run ID: V4_141020A
Client ID: LCS-79586	Batch ID: 79586	Units: ug/Kg	Analysis Date: 10/20/14 9:53	SeqNo: 2170645

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	26220	2500 ^	2500	25000	0	105	80	120	0			
Surrogate: Bromofluorobenzene	22.40		250	20.00	0	112	79	118	0			

Sample ID: LCS-79621	SampType: LCS	TestCode: GRO_S	Prep Date: 10/21/14 7:48	Run ID: V4_141021A
Client ID: LCS-79621	Batch ID: 79621	Units: ug/Kg	Analysis Date: 10/21/14 9:41	SeqNo: 2169954

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	25390	2500 ^	2500	25000	0	102	80	120	0			
Surrogate: Bromofluorobenzene	19.48		250	20.00	0	97.4	79	118	0			

Sample ID: N1907-27BMS	SampType: MS	TestCode: GRO_S	Prep Date: 10/15/14 8:25	Run ID: V4_141015A
Client ID: 03SS0070002	Batch ID: 79492	Units: ug/Kg	Analysis Date: 10/15/14 15:28	SeqNo: 2167788

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	14700	1800 ^	1800	17990	0	81.7	60	140	0			
Surrogate: Bromofluorobenzene	19.16		180	20.00	0	95.8	79	118	0			

Sample ID: N1907-27BMSD	SampType: MSD	TestCode: GRO_S	Prep Date: 10/15/14 8:25	Run ID: V4_141015A
Client ID: 03SS0070002	Batch ID: 79492	Units: ug/Kg	Analysis Date: 10/15/14 15:50	SeqNo: 2167789

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	15010	1800 ^	1800	17570	0	85.4	60	140	14700	2.07	20	
Surrogate: Bromofluorobenzene	19.30		180	20.00	0	96.5	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1907
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79493**	SampType: **MBLK**	TestCode: **GRO_W**			Prep Date: **10/14/14 8:26**			Run ID: **V4_141014A**			
Client ID: **MB-79493**	Batch ID: **79493**	Units: **ug/L**			Analysis Date: **10/14/14 11:51**			SeqNo: **2168177**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	19.29		5.0	20.00	0	96.4	87	112	0			

Sample ID: **LCS-79493**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **10/14/14 8:26**			Run ID: **V4_141014A**			
Client ID: **LCS-79493**	Batch ID: **79493**	Units: **ug/L**			Analysis Date: **10/14/14 11:12**			SeqNo: **2168176**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	528.5	100 ^	100	500.0	0	106	80	120	0			
Surrogate: Bromofluorobenzene	18.07		5.0	20.00	0	90.4	87	112	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
m14.10.24.0936 J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

Data File: \\avogadro\organics\V4.i\141014.B\V4D07881.D
Report Date: 22-Oct-2014 15:38

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07881.D
Analysis Type: WATER
Lab Sample ID: VSTD0504F
Method: \\avogadro\organics\V4.i\141014.B\v4GRO.m

Injection Date: 14-OCT-2014 10:47
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88401	0.010	2.00789	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	31174	0.010	8.49198	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141014.B\V4D07899.D
Report Date: 22-Oct-2014 15:38

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 14-OCT-2014 19:14
Lab File ID: V4D07899.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504G Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141014.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	83226	0.010	7.74422	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32150	0.010	5.62480	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141015.B\V4D07910.D
Report Date: 17-Oct-2014 10:09

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07910.D
Analysis Type: WATER
Lab Sample ID: VSTD0504H
Method: \\avogadro\organics\V4.i\141015.B\v4GRO.m

Injection Date: 15-OCT-2014 08:47
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	77364	0.010	14.24209	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	29283	0.010	14.04228	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141015.B\V4D07931.D
Report Date: 17-Oct-2014 10:09

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07931.D
Analysis Type: WATER
Lab Sample ID: VSTD0504I
Method: \\avogadro\organics\V4.i\141015.B\v4GRO.m

Injection Date: 15-OCT-2014 16:57
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	86354	0.010	4.27652	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	34575	0.010	-1.49111	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141016.B\V4D07932.D
Report Date: 17-Oct-2014 10:09

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07932.D
Analysis Type: WATER
Lab Sample ID: VSTD0504J
Method: \\avogadro\organics\V4.i\141016.B\v4GRO.m

Injection Date: 16-OCT-2014 08:13
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	89665	0.010	0.60692	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32642	0.010	4.18219	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141016.B\V4D07956.D
Report Date: 21-Oct-2014 10:32

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 16-OCT-2014 17:24
Lab File ID: V4D07956.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504K Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141016.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88851	0.010	1.50858	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	33297	0.010	2.25904	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141020.B\V4D07984.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 20-OCT-2014 09:08
Lab File ID: V4D07984.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504N Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141020.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88180	0.010	2.25272	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32958	0.010	3.25518	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141020.B\V4D08001.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08001.D
Analysis Type: WATER
Lab Sample ID: VSTD05040
Method: \\avogadro\organics\V4.i\141020.B\v4GRO.m

Injection Date: 20-OCT-2014 15:49
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	85226	0.010	5.52707	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32676	0.010	4.08179	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141021.B\V4D08005.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08005.D
Analysis Type: WATER
Lab Sample ID: VSTD0504P
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

Injection Date: 21-OCT-2014 08:46
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88671	0.010	1.70891	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32210	0.010	5.45102	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141021.B\V4D08024.D
Report Date: 23-Oct-2014 08:15

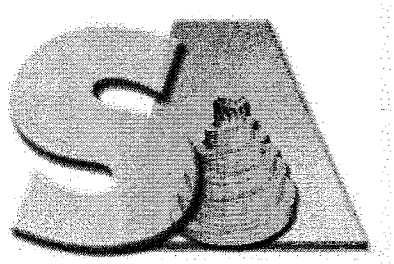
Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08024.D
Analysis Type: WATER
Lab Sample ID: VSTD0504Q
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

Injection Date: 21-OCT-2014 17:14
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88143	0.010	2.29429	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32981	0.010	3.18576	20.00000	Averaged



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

* Total Petroleum Hydrocarbons *

646 Camp Ave · North Kingstown, RI 02852-4008 · 401-732-3400 · FAX 401-732-3499
www.spectrum-analytical.com

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1907

SW846 8015D TPH, Total Petroleum Hydrocarbons (TPH) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D TPH

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C
Soil Samples were prepared following procedures in laboratory test code: SW3550B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: F1
Instrument Type: GC-FID

Description: HP6890
Manufacturer: Hewlett-Packard
Model: 6890
GC Column used: 30 m X 0.32 mm ID [0.25 um thickness] Rtx-5MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: 03SS0070002 (N1907-27AMS) and 03SS0070002 (N1907-27AMSD).

Percent recoveries were within the QC limits with the following exceptions:

03SS0070002 (N1907-27AMSD), recovery is above criteria for Extractable Total Petroleum Hydrocarbon at 152% with criteria of (50-150).

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

The following samples were analyzed at dilution:

03SB0010204 (N1907-03A) : Dilution Factor: 5
03SS0020002 (N1907-06A) : Dilution Factor: 5

03SS0030002 (N1907-10A) : Dilution Factor: 5
03SS0040002 (N1907-14A) : Dilution Factor: 5
03SS0050002 (N1907-18A) : Dilution Factor: 5
03SS0070002 (N1907-27A) : Dilution Factor: 5
03SS0070002 (N1907-27AMS) : Dilution Factor: 25
03SS0070002 (N1907-27AMSD) : Dilution Factor: 25
03SS0080002 (N1907-31A) : Dilution Factor: 5
03SS0090002 (N1907-35A) : Dilution Factor: 5

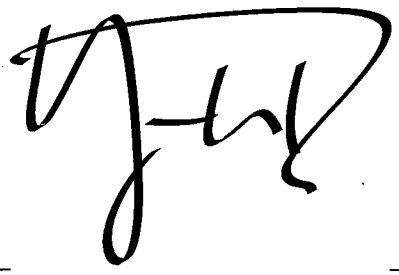
F. Samples:

No other unusual occurrences were noted during sample analysis.

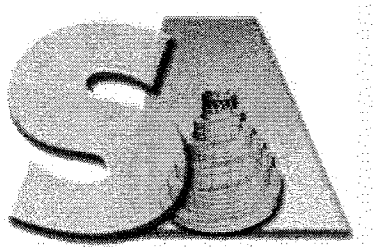
G. Manual Integration

No sample in this SDG were performed with manual integration.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____  _____

Date:_____10/30/2014_____



SPECTRUM ANALYTICAL, INC.
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Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

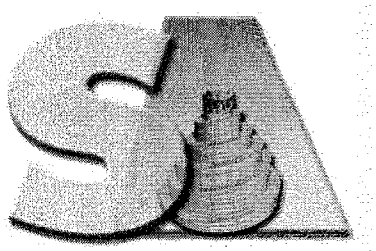
B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

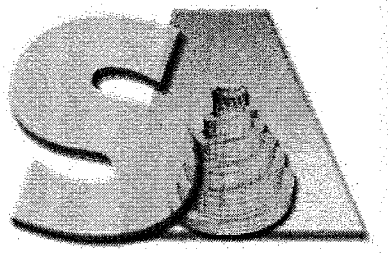


Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

CLIENT: Tetra Tech, Inc.
Work Order: N1907
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79497**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/15/14 7:14**	Run ID: **F1_141016B**
Client ID: **MB-79497**	Batch ID: **79497**	Units: **mg/Kg**	Analysis Date: **10/16/14 15:12**	SeqNo: **2168214**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	2.950		0.83	3.333	0	88.5	50	150	0			

Sample ID: **MB-79624**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:20**	Run ID: **F1_141024A**
Client ID: **MB-79624**	Batch ID: **79624**	Units: **mg/Kg**	Analysis Date: **10/24/14 11:44**	SeqNo: **2173283**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	2.524		0.83	3.333	0	75.7	50	150	0			

Sample ID: **LCS-79497**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/15/14 7:14**	Run ID: **F1_141016B**
Client ID: **LCS-79497**	Batch ID: **79497**	Units: **mg/Kg**	Analysis Date: **10/16/14 15:33**	SeqNo: **2168215**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	137.4	7.0 ^	7.0	166.7	0	82.4	60	140	0			
Surrogate: ortho-Terphenyl	2.821		0.83	3.333	0	84.6	50	150	0			

Sample ID: **LCS-79624**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:20**	Run ID: **F1_141024A**
Client ID: **LCS-79624**	Batch ID: **79624**	Units: **mg/Kg**	Analysis Date: **10/24/14 12:05**	SeqNo: **2173284**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	115.5	7.0 ^	7.0	166.7	0	69.3	60	140	0			
Surrogate: ortho-Terphenyl	2.226		0.83	3.333	0	66.8	50	150	0			

Sample ID: **LCSD-79624**	SampType: **LCSD**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:20**	Run ID: **F1_141024A**
Client ID: **LCSD-79624**	Batch ID: **79624**	Units: **mg/Kg**	Analysis Date: **10/24/14 12:26**	SeqNo: **2173285**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	128.0	7.0 ^	7.0	166.7	0	76.8	60	140	115.5	10.3	20	
Surrogate: ortho-Terphenyl	2.440		0.83	3.333	0	73.2	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank; J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1907
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

N1907

Sample ID: **N1907-27AMS**	SampType: **MS**	TestCode: **TPH_S**	Prep Date: **10/15/14 7:14**	Run ID: **F1_141017A**
Client ID: **03SS0070002**	Batch ID: **79497**	Units: **mg/Kg**	Analysis Date: **10/17/14 10:52**	SeqNo: **2168368**

SAMPLE CONC

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	712.0	180 ^	180	171.8	539.7	100	50	150	0			
Surrogate: ortho-Terphenyl	2.221		21	3.436	0	64.7	50	150	0			

Sample ID: **N1907-27AMSD**	SampType: **MSD**	TestCode: **TPH_S**	Prep Date: **10/15/14 7:14**	Run ID: **F1_141017A**
Client ID: **03SS0070002**	Batch ID: **79497**	Units: **mg/Kg**	Analysis Date: **10/17/14 11:11**	SeqNo: **2168369**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	804.6	180 ^	180	174.1	539.7	152	50	150	712.0	12.2	30	S
Surrogate: ortho-Terphenyl	2.706		22	3.482	0	77.7	50	150	0			

o.k. Sample amt > 5X spike amt.

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

N1907

CLIENT: Tetra Tech, Inc.
Work Order: N1907
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_W

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79558**	SampType: **MBLK**	TestCode: **TPH_W**			Prep Date: **10/17/14 14:44**			Run ID: **F1_141020A**				
Client ID: **MB-79558**	Batch ID: **79558**	Units: **mg/L**			Analysis Date: **10/20/14 16:12**			SeqNo: **2172914**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	0.20 ^	0.20									
Surrogate: ortho-Terphenyl	0.09708		0.025	0.1000	0	97.1	50	150	0			
Sample ID: **LCS-79558**	SampType: **LCS**	TestCode: **TPH_W**			Prep Date: **10/17/14 14:44**			Run ID: **F1_141020A**				
Client ID: **LCS-79558**	Batch ID: **79558**	Units: **mg/L**			Analysis Date: **10/20/14 16:33**			SeqNo: **2172916**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	3.999	0.20 ^	0.20	5.000	0	80.0	60	140	0			
Surrogate: ortho-Terphenyl	0.07974		0.025	0.1000	0	79.7	50	150	0			
Sample ID: **LCSD-79558**	SampType: **LCSD**	TestCode: **TPH_W**			Prep Date: **10/17/14 14:44**			Run ID: **F1_141020A**				
Client ID: **LCSD-79558**	Batch ID: **79558**	Units: **mg/L**			Analysis Date: **10/20/14 16:54**			SeqNo: **2172917**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.243	0.20 ^	0.20	5.000	0	84.9	60	140	3.999	5.93	20	
Surrogate: ortho-Terphenyl	0.08501		0.025	0.1000	0	85.0	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Response Factor Report FID1

Method Path : O:\F1.I\QMETHODS\
Method File : TPH0717.M
Title : TPH, ETPH, DRO, Fuel ID, ORO
Last Update : Thu Jul 17 14:13:45 2014
Response Via : Initial Calibration

Calibration Files
5 =F1J3033.D 20 =F1J3034.D 50 =F1J3035.D
80 =F1J3036.D 100 =F1J3037.D 120 =F1J3038.D

		Compound	5	20	50	80	100	120	Avg		%RSD
1)	S	1-Chlorooctadeca							0.000		-1.00
2)	S	ortho-Terphenyl	2.830	3.103	2.910	3.255	3.307	3.086	3.084	E5	5.33
3)	H	DRO C10 to C28	2.842	2.831	2.599	3.089	3.059	2.824	2.875	E5	5.59
4)	H	TPH C9 to C36	2.898	2.856	2.622	3.123	3.088	2.856	2.907	E5	5.59
5)	H	Gasoline							0.000		-1.00
6)	H	Jet Fuel							0.000		-1.00
7)	H	Motor Oil/Other							0.000		-1.00
8)	H	Number 2 Fuel							0.000		-1.00
9)	H	Number 4 Fuel							0.000		-1.00
10)	H	Number 6 Fuel							0.000		-1.00
11)	I	5a-Androstane	----------ISTD----------								
12)	S	1-Chlorooctadeca							0.000		-1.00
13)	S	ortho-Terphenyl	0.939	1.011	1.065	1.097	1.063	1.071	1.050		4.86
14)	T	C9 Nonane	0.797	0.784	0.809	0.898	0.822	0.834	0.834		4.68
15)	TD	C10 Decane	0.815	0.807	0.837	0.927	0.853	0.863	0.861		4.85
16)	TD	C12 Dodecane	0.854	0.843	0.879	0.963	0.893	0.902	0.899		4.56
17)	TD	C14 Tetradecane	0.890	0.873	0.913	0.992	0.928	0.932	0.931		4.21
18)	TD	C16 Hexadecane	0.951	0.914	0.946	1.027	0.967	0.966	0.968		3.55
19)	TD	C18 Octadecane	0.940	0.919	0.950	1.033	0.979	0.970	0.972		3.69
20)	TD	C20 Eicosane	0.971	0.945	0.978	1.066	1.015	1.002	1.002		3.77
21)	TD	C22 Docosane	0.977	0.968	0.987	1.081	1.031	1.019	1.016		3.72
22)	TD	C24 Tetracosane	0.997	0.974	0.995	1.092	1.042	1.033	1.028		3.68
23)	TD	C26 Hexacosane	1.011	0.987	1.010	1.110	1.060	1.053	1.045		3.81
24)	TD	C28 Octacosane	1.024	0.993	1.016	1.119	1.067	1.062	1.054		3.85
25)	T	C30 Triacontane	1.017	1.006	1.033	1.138	1.083	1.080	1.069		4.26
26)	T	C32 Dotriaconta	0.986	0.987	1.021	1.123	1.066	1.065	1.051		4.63
27)	T	C36 Hexatriacon	1.229	1.028	1.057	1.162	1.095	1.096	1.113		5.57
28)	H	DRO C10 to C28	0.943	0.922	0.951	1.041	0.984	0.980	0.978		3.91
29)	H	TPH C8 to C40 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
30)	H	TPH C9 to C36 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
31)		----------							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File: \\Avogadro\Organics\F1.I\141016B.B\F1J3511.D
Lab Smp Id: FSTD1001T Client Smp ID: FSTD1001T
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 16 Oct 2014 14:12 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 17 07:42:31 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	323.198	E3	-4.8	100	0.00
3	H	DRO C10 to C28	287.452	298.781	E3	-3.9	100	0.00
4	H	TPH C9 to C40	290.717	306.712	E3	-5.5	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.062		-1.1	100	0.00
14		C9 Nonane	0.834	0.794		4.8	100	0.00
15		C10 Decane	0.861	0.847		1.6	100	0.00
16		C12 Dodecane	0.899	0.883		1.8	100	0.00
17		C14 Tetradecane	0.931	0.915		1.7	100	0.00
18		C16 Hexadecane	0.968	0.950		1.9	100	0.00
19		C18 Octadecane	0.972	0.958		1.4	100	0.00
20		C20 Eicosane	1.002	1.000		0.2	100	0.00
21		C22 Docosane	1.016	1.023		-0.7	100	0.00
22		C24 Tetracosane	1.028	1.037		-0.9	100	0.00
23		C26 Hexacosane	1.045	1.087		-4.0	100	0.00
24		C28 Octacosane	1.054	1.113		-5.6	100	0.00
25		C30 Triacontane	1.069	1.147		-7.3	100	0.00
26		C32 Dotriacontane	1.051	1.142		-8.7	100	0.00
27		C36 Hexatriacontane	1.113	1.208		-8.5	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.981		-0.3	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.007		-1.8	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.007		-1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141016B.B\F1J3524.D
Lab Smp Id: FSTD1001U Client Smp ID: FSTD1001U
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 16 Oct 2014 18:38 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 17 07:44:33 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	357.250 E3	-15.8	111	0.00
3	H	DRO C10 to C28	287.452	330.682 E3	-15.0	111	0.00
4	H	TPH C9 to C40	290.717	339.100 E3	-16.6	111	0.00
11	I	5a-Androstane	1.000	1.000	0.0	110	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.063	-1.2	111	0.00
14		C9 Nonane	0.834	0.802	3.8	112	0.00
15		C10 Decane	0.861	0.853	0.9	111	0.00
16		C12 Dodecane	0.899	0.886	1.4	111	0.00
17		C14 Tetradecane	0.931	0.920	1.2	111	0.00
18		C16 Hexadecane	0.968	0.955	1.3	111	0.00
19		C18 Octadecane	0.972	0.959	1.3	111	0.00
20		C20 Eicosane	1.002	1.001	0.1	110	0.00
21		C22 Docosane	1.016	1.024	-0.8	111	0.00
22		C24 Tetracosane	1.028	1.039	-1.1	111	0.00
23		C26 Hexacosane	1.045	1.089	-4.2	111	0.00
24		C28 Octacosane	1.054	1.112	-5.5	110	0.00
25		C30 Triacontane	1.069	1.143	-6.9	110	0.00
26		C32 Dotriacontane	1.051	1.138	-8.3	110	0.00
27		C36 Hexatriacontane	1.113	1.202	-8.0	110	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.984	-0.6	111	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.009	-2.0	111	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.009	-2.0	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141016B.B\F1J3536.D
Lab Smp Id: FSTD1001V Client Smp ID: FSTD1001V
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 16 Oct 2014 22:44 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 17 07:45:28 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	310.719 E3	-0.7	96	0.00
3	H	DRO C10 to C28	287.452	283.058 E3	1.5	95	0.00
4	H	TPH C9 to C40	290.717	291.264 E3	-0.2	95	0.00
11	I	5a-Androstane	1.000	1.000	0.0	96	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.064	-1.3	96	0.00
14		C9 Nonane	0.834	0.813	2.5	98	0.00
15		C10 Decane	0.861	0.867	-0.7	98	0.00
16		C12 Dodecane	0.899	0.897	0.2	97	0.00
17		C14 Tetradecane	0.931	0.920	1.2	96	0.00
18		C16 Hexadecane	0.968	0.943	2.6	95	0.00
19		C18 Octadecane	0.972	0.944	2.9	94	0.00
20		C20 Eicosane	1.002	0.978	2.4	94	0.00
21		C22 Docosane	1.016	0.995	2.1	93	0.00
22		C24 Tetracosane	1.028	1.007	2.0	93	0.00
23		C26 Hexacosane	1.045	1.056	-1.1	93	0.00
24		C28 Octacosane	1.054	1.086	-3.0	94	0.00
25		C30 Triacontane	1.069	1.126	-5.3	94	0.00
26		C32 Dotriacontane	1.051	1.131	-7.6	95	0.00
27		C36 Hexatriacontane	1.113	1.201	-7.9	95	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.969	0.9	95	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.997	-0.8	95	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.997	-0.8	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141016B.B\F1J3546.D
Lab Smp Id: FSTD1001W Client Smp ID: FSTD1001W
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 17 Oct 2014 2:08 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 17 07:48:46 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.709	E3	0.9	95	0.00
3	H	DRO C10 to C28	287.452	278.947	E3	3.0	93	0.00
4	H	TPH C9 to C40	290.717	289.836	E3	0.3	94	0.00
11	I	5a-Androstane	1.000	1.000		0.0	95	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.058		-0.8	95	0.00
14		C9 Nonane	0.834	0.809		3.0	97	0.00
15		C10 Decane	0.861	0.862		-0.1	97	0.00
16		C12 Dodecane	0.899	0.887		1.3	95	0.00
17		C14 Tetradecane	0.931	0.907		2.6	94	0.00
18		C16 Hexadecane	0.968	0.927		4.2	93	0.00
19		C18 Octadecane	0.972	0.931		4.2	92	0.00
20		C20 Eicosane	1.002	0.965		3.7	92	0.00
21		C22 Docosane	1.016	0.986		3.0	92	0.00
22		C24 Tetracosane	1.028	1.006		2.1	92	0.00
23		C26 Hexacosane	1.045	1.065		-1.9	93	0.00
24		C28 Octacosane	1.054	1.114		-5.7	95	0.00
25		C30 Triacontane	1.069	1.160		-8.5	96	0.00
26		C32 Dotriacontane	1.051	1.172		-11.5	97	0.00
27		C36 Hexatriacontane	1.113	1.246		-11.9	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.965		1.3	93	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.003		-1.4	94	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.003		-1.4	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141017A.B\F1J3551.D
Lab Smp Id: FSTD1001X Client Smp ID: FSTD1001X
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 17 Oct 2014 8:49 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 17 09:07:29 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	322.532 E3	-4.6	100	0.00
3	H	DRO C10 to C28	287.452	291.296 E3	-1.3	100	0.00
4	H	TPH C9 to C40	290.717	301.021 E3	-3.5	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.059	-0.9	100	0.00
14		C9 Nonane	0.834	0.794	4.8	100	0.00
15		C10 Decane	0.861	0.848	1.5	100	0.00
16		C12 Dodecane	0.899	0.879	2.2	100	0.00
17		C14 Tetradecane	0.931	0.902	3.1	100	0.00
18		C16 Hexadecane	0.968	0.924	4.5	100	0.00
19		C18 Octadecane	0.972	0.925	4.8	100	0.00
20		C20 Eicosane	1.002	0.962	4.0	100	0.00
21		C22 Docosane	1.016	0.982	3.3	100	0.00
22		C24 Tetracosane	1.028	1.001	2.6	100	0.00
23		C26 Hexacosane	1.045	1.054	-0.9	100	0.00
24		C28 Octacosane	1.054	1.088	-3.2	100	0.00
25		C30 Triacontane	1.069	1.136	-6.3	100	0.00
26		C32 Dotriacontane	1.051	1.138	-8.3	100	0.00
27		C36 Hexatriacontane	1.113	1.206	-8.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.957	2.1	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.989	0.0	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.989	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141017A.B\F1J3563.D
Lab Smp Id: FSTD1001Y Client Smp ID: FSTD1001Y
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 17 Oct 2014 12:53 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 17 13:10:15 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	314.024	E3	-1.8	97	0.00
3	H	DRO C10 to C28	287.452	285.477	E3	0.7	98	0.00
4	H	TPH C9 to C40	290.717	296.022	E3	-1.8	98	0.00
11	I	5a-Androstane	1.000	1.000		0.0	98	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.056		-0.6	97	0.00
14		C9 Nonane	0.834	0.799		4.2	98	0.00
15		C10 Decane	0.861	0.850		1.3	98	0.00
16		C12 Dodecane	0.899	0.880		2.1	98	0.00
17		C14 Tetradecane	0.931	0.904		2.9	98	0.00
18		C16 Hexadecane	0.968	0.925		4.4	98	0.00
19		C18 Octadecane	0.972	0.927		4.6	98	0.00
20		C20 Eicosane	1.002	0.962		4.0	98	0.00
21		C22 Docosane	1.016	0.979		3.6	97	0.00
22		C24 Tetracosane	1.028	1.003		2.4	98	0.00
23		C26 Hexacosane	1.045	1.064		-1.8	99	0.00
24		C28 Octacosane	1.054	1.106		-4.9	99	0.00
25		C30 Triacontane	1.069	1.154		-8.0	99	0.00
26		C32 Dotriacontane	1.051	1.162		-10.6	100	0.00
27		C36 Hexatriacontane	1.113	1.222		-9.8	99	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.960		1.8	98	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.995		-0.6	98	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.995		-0.6	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3633.D
Lab Smp Id: FSTD1001F Client Smp ID: FSTD1001F
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 15:30 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 20 16:36:05 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	317.256	E3	-2.9	102	0.00
3	H	DRO C10 to C28	287.452	292.700	E3	-1.8	101	0.00
4	H	TPH C9 to C40	290.717	288.566	E3	0.7	101	0.00
11	I	5a-Androstane	1.000	1.000		0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074		-2.3	102	0.00
14		C9 Nonane	0.834	0.748		10.3	102	0.00
15		C10 Decane	0.861	0.801		7.0	102	0.00
16		C12 Dodecane	0.899	0.892		0.8	103	0.00
17		C14 Tetradecane	0.931	0.965		-3.7	103	0.00
18		C16 Hexadecane	0.968	1.017		-5.1	103	0.00
19		C18 Octadecane	0.972	1.022		-5.1	102	0.00
20		C20 Eicosane	1.002	1.048		-4.6	102	0.00
21		C22 Docosane	1.016	1.049		-3.2	100	0.00
22		C24 Tetracosane	1.028	1.044		-1.6	100	0.00
23		C26 Hexacosane	1.045	1.043		0.2	100	0.00
24		C28 Octacosane	1.054	1.031		2.2	100	0.00
25		C30 Triacontane	1.069	1.028		3.8	100	0.00
26		C32 Dotriacontane	1.051	0.996		5.2	100	0.00
27		C36 Hexatriacontane	1.113	0.997		10.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.991		-1.3	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.977		1.2	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.977		1.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3646.D
Lab Smp Id: FSTD1001G Client Smp ID: FSTD1001G
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 20:01 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 21 09:05:41 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	326.840	E3	-6.0	106	0.00
3	H	DRO C10 to C28	287.452	302.026	E3	-5.1	105	0.00
4	H	TPH C9 to C40	290.717	298.887	E3	-2.8	105	0.00
11	I	5a-Androstane	1.000	1.000		0.0	105	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.071		-2.0	106	0.00
14		C9 Nonane	0.834	0.738		11.5	104	0.00
15		C10 Decane	0.861	0.790		8.2	104	0.00
16		C12 Dodecane	0.899	0.881		2.0	105	0.00
17		C14 Tetradecane	0.931	0.951		-2.1	105	0.00
18		C16 Hexadecane	0.968	1.002		-3.5	105	0.00
19		C18 Octadecane	0.972	1.018		-4.7	105	0.00
20		C20 Eicosane	1.002	1.047		-4.5	105	0.00
21		C22 Docosane	1.016	1.054		-3.7	104	0.00
22		C24 Tetracosane	1.028	1.052		-2.3	104	0.00
23		C26 Hexacosane	1.045	1.054		-0.9	104	0.00
24		C28 Octacosane	1.054	1.045		0.9	105	0.00
25		C30 Triacontane	1.069	1.045		2.2	105	0.00
26		C32 Dotriacontane	1.051	1.014		3.5	105	0.00
27		C36 Hexatriacontane	1.113	1.018		8.5	105	-0.01
28	H	DRO C10 to C28 ISTD	0.978	0.989		-1.1	105	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.979		1.0	105	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.979		1.0	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141024A.B\F1J3753.D
Lab Smp Id: FSTD1001Q Client Smp ID: FSTD1001Q
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 24 Oct 2014 10:59 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 24 11:23:10 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	325.105 E3	-5.4	100	0.00
3	H	DRO C10 to C28	287.452	306.199 E3	-6.5	100	0.00
4	H	TPH C9 to C40	290.717	310.608 E3	-6.8	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.060	-1.0	100	0.00
14		C9 Nonane	0.834	0.749	10.2	100	0.00
15		C10 Decane	0.861	0.775	10.0	100	0.00
16		C12 Dodecane	0.899	0.840	6.6	100	0.00
17		C14 Tetradecane	0.931	0.908	2.5	100	0.00
18		C16 Hexadecane	0.968	0.976	-0.8	100	0.00
19		C18 Octadecane	0.972	1.000	-2.9	100	0.00
20		C20 Eicosane	1.002	1.053	-5.1	100	0.00
21		C22 Docosane	1.016	1.075	-5.8	100	0.00
22		C24 Tetracosane	1.028	1.088	-5.8	100	0.00
23		C26 Hexacosane	1.045	1.130	-8.1	100	0.00
24		C28 Octacosane	1.054	1.141	-8.3	100	0.00
25		C30 Triacontane	1.069	1.158	-8.3	100	0.00
26		C32 Dotriacontane	1.051	1.134	-7.9	100	0.00
27		C36 Hexatriacontane	1.113	1.156	-3.9	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.999	-2.1	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.013	-2.4	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.013	-2.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141024A.B\F1J3765.D
Lab Smp Id: FSTD1001R Client Smp ID: FSTD1001R
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 24 Oct 2014 15:11 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 24 15:32:37 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	309.817	E3	-0.5	95	0.00
3	H	DRO C10 to C28	287.452	291.028	E3	-1.2	95	0.00
4	H	TPH C9 to C40	290.717	295.220	E3	-1.5	95	0.00
11	I	5a-Androstane	1.000	1.000		0.0	94	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074		-2.3	95	0.00
14		C9 Nonane	0.834	0.830		0.5	104	0.00
15		C10 Decane	0.861	0.853		0.9	104	0.00
16		C12 Dodecane	0.899	0.910		-1.2	102	0.00
17		C14 Tetradecane	0.931	0.956		-2.7	99	0.00
18		C16 Hexadecane	0.968	1.000		-3.3	96	0.00
19		C18 Octadecane	0.972	1.003		-3.2	94	0.00
20		C20 Eicosane	1.002	1.041		-3.9	93	0.00
21		C22 Docosane	1.016	1.055		-3.8	92	0.00
22		C24 Tetracosane	1.028	1.059		-3.0	92	0.00
23		C26 Hexacosane	1.045	1.100		-5.3	92	0.00
24		C28 Octacosane	1.054	1.115		-5.8	92	0.00
25		C30 Triacontane	1.069	1.135		-6.2	92	0.00
26		C32 Dotriacontane	1.051	1.119		-6.5	93	0.00
27		C36 Hexatriacontane	1.113	1.155		-3.8	94	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.009		-3.2	95	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.024		-3.5	95	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.024		-3.5	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141024A.B\F1J3777.D
Lab Smp Id: FSTD1001S Client Smp ID: FSTD1001S
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 24 Oct 2014 19:21 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 27 08:29:33 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	330.642 E3	-7.2	102	0.00
3	H	DRO C10 to C28	287.452	308.288 E3	-7.2	101	0.00
4	H	TPH C9 to C40	290.717	311.948 E3	-7.3	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.075	-2.4	102	0.00
14		C9 Nonane	0.834	0.830	0.5	111	0.00
15		C10 Decane	0.861	0.851	1.2	110	0.00
16		C12 Dodecane	0.899	0.910	-1.2	109	0.00
17		C14 Tetradecane	0.931	0.958	-2.9	106	0.00
18		C16 Hexadecane	0.968	0.997	-3.0	102	0.00
19		C18 Octadecane	0.972	1.001	-3.0	100	0.00
20		C20 Eicosane	1.002	1.036	-3.4	99	0.00
21		C22 Docosane	1.016	1.042	-2.6	97	0.00
22		C24 Tetracosane	1.028	1.048	-1.9	97	0.00
23		C26 Hexacosane	1.045	1.084	-3.7	96	0.00
24		C28 Octacosane	1.054	1.097	-4.1	96	0.00
25		C30 Triacontane	1.069	1.116	-4.4	97	0.00
26		C32 Dotriacontane	1.051	1.099	-4.6	97	0.00
27		C36 Hexatriacontane	1.113	1.132	-1.7	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.002	-2.5	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.014	-2.5	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.014	-2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141024A.B\F1J3785.D
Lab Smp Id: FSTD1001T Client Smp ID: FSTD1001T
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 24 Oct 2014 22:07 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 27 08:42:06 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	322.542	E3	-4.6	99	0.00
3	H	DRO C10 to C28	287.452	299.819	E3	-4.3	98	0.00
4	H	TPH C9 to C40	290.717	302.258	E3	-4.0	97	0.00
11	I	5a-Androstane	1.000	1.000		0.0	98	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.075		-2.4	99	0.00
14		C9 Nonane	0.834	0.834		0.0	109	0.00
15		C10 Decane	0.861	0.859		0.2	109	0.00
16		C12 Dodecane	0.899	0.916		-1.9	107	0.00
17		C14 Tetradecane	0.931	0.959		-3.0	103	0.00
18		C16 Hexadecane	0.968	0.997		-3.0	100	0.00
19		C18 Octadecane	0.972	0.996		-2.5	98	0.00
20		C20 Eicosane	1.002	1.028		-2.6	96	0.00
21		C22 Docosane	1.016	1.037		-2.1	94	0.00
22		C24 Tetracosane	1.028	1.039		-1.1	93	0.00
23		C26 Hexacosane	1.045	1.075		-2.9	93	0.00
24		C28 Octacosane	1.054	1.086		-3.0	93	0.00
25		C30 Triacontane	1.069	1.100		-2.9	93	0.00
26		C32 Dotriacontane	1.051	1.078		-2.6	93	0.00
27		C36 Hexatriacontane	1.113	1.099		1.3	93	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.999		-2.1	98	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.007		-1.8	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.007		-1.8	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

SDG N1907
SAMPLE ID 03SS0070002

SAMPLE CALC

INITIAL CF	DILUTION	COMPOUND OF INTEREST	Final Extract Volume (ul)	CONCENTRATION PPB
290717	5	182672344	1000	54705.06162
	Amt inj (ul)	**% Solids**	**Sample Volume (g)**	
	2	0.954	30.1	

TPH (C9-C40) = 540 mg/kg

pectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

rep Start Date: **10/15/2014 07:14**
Prep End Date: **10/16/2014 10:53** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79497** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
C Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | Bath Temp1 (C): N/A | Therm ID1: N/A
End Time: N/A | BalanceID: TL1 | Corr Fac: N/A | Corrected Temp: N/A

ab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
1907-24A	03SB0060204	S	30.1	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
1907-27A	03SS0070002	S	30.5	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
1907-27AMS	03SS0070002	S	30.5	1	OFW140805A	1	OFW141007A	1	AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
1907-27AMSD	03SS0070002	S	30.1	1	OFW140805A	1	OFW141007A	1	AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
1907-28A	03SB0070204	S	30	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
1907-31A	03SS0080002	S	30.2	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
1907-32A	03SB0080204	S	30.1	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
1907-35A	03SS0090002	S	30.5	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
1907-36A	03SB0090204	S	30.5	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
1907-39A	FD02-101014	S	30.5	1	OFW140805A	1			AMC	KNL	10/29/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD

alisa M Caruso 10/16/2014 Devin M Pierel 10/16/2014
alyst Reviewed Date Manager Reviewed Date

mments:

= Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-09/14

IAC 10116120Ff

N1907

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/22/2014 07:20**

Prep End Date: **10/23/2014 09:50** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**

Prep Batch ID: **79624** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DK494	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: TL1	Start Time: N/A	Cycles/Hour 0	Sonicator Tuned? Yes	Bath Temp1 (C): N/A	Therm ID1: N/A
	End Time: N/A		BalanceID: TL1	Corr Fac: N/A	Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79624	BatchQC		30	1	OFW141016A	1			DMP	TM			10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
LCS-79624	BatchQC		30	1	OFW141016A	1	OFW141007A	1	DMP	TM			10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
LCSD-79624	BatchQC		30	1	OFW141016A	1	OFW141007A	1	DMP	TM			10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1
N1907-04A	03SB0010406	S	30.5	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1907-05A	03SB0010610	S	30.5	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1907-08A	03SB0020406	S	30.1	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1907-09A	03SB0020610	S	30.4	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1907-12A	03SB0030406	S	30	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1907-13A	03SB0030610	S	30.2	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1907-16A	03SB0040406	S	30	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1907-17A	03SB0040610	S	30.5	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1907-20A	03SB0050406	S	30.4	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1907-22A	03SB0050610	S	30.4	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1907-25A	03SB0060406	S	30.3	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD

Logbook ID: 50.0147-10/14

AC 10/23/2014

N1907

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/22/2014 07:20**
Prep End Date: **10/23/2014 09:50** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: mL / g
Prep Batch ID: **79624** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A End Time: N/A | Cycles/Hour 0 | Sonicator Tuned? Yes BalanceID: TL1 | Bath Temp1 (C): N/A Corr Fac: N/A | Therm ID1: N/A Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
N1907-26A	03SB0060610	S	30.1	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1907-29A	03SB0070406	S	30.2	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1907-30A	03SB0070610	S	30.2	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1907-33A	03SB0080406	S	30.5	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1907-34A	03SB0080610	S	30.1	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1907-37A	03SB0090406	S	30.1	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1907-38A	03SB0090610	S	30.4	1	OFW141016A	1			DMP	TM	10/29/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD

Analisa M Caruso 10/23/2014
Analyst Reviewed Date

Devin M Pierel 10/23/2014
Manager Reviewed Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-10/14

AC 10/23/2014

Data File: \\Avogadro\Organics\F1.I\141016B.B\F1J3539.D
Lab Smp Id: N1907-27A BN: 79497 Client Smp ID: 03SS0070002
Misc : | TPH 5X DIL Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 16 Oct 2014 23:45 Operator: TM
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Oct 17 08:13:29 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Compound	R.T.	Response	Conc Units
Internal Standards			
11) I 5a-Androstane	6.81	2382861	40.000 ug/mL
System Monitoring Compounds			
2) S ortho-Terphenyl	6.34	1563286	5.069 ug/mL
Spiked Amount 100.000		Recovery =	5.07%
Target Compounds			
4) H TPH C9 to C40	1.30	182672344	628.351 ug/mL
Integration Range:		1.30 to 12.70 minutes	
Raw Range Area:		273523690	
Corrected Range Area (IS,SS):		269577543	
Instrument Blank Area (F1J3537):		86905199	

Corrected Range Area = Raw Range Area - Internal and Surrogate Area
Reported Area = Corrected Range Area - Instrument Blank Area

(f)=RT Delta > 1/2 Window (m)=manual int.

$$\frac{182672344 \times 5}{290717 \times 30.5 \times 0.9543} = 539.7 \text{ mg/kg}$$

TPH = 540 mg/kg

TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **S. ANDERSON** **DATE:** **DECEMBER 22, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – TPH (C9-C40) and GRO**
FRMR NCBC DAVISVILLE, CTO WE01
SDG N1911

SAMPLES:

38/Soil/TPH (C9-C40)/GRO

03SB009A0204	03SB009A0406	03SB009A0610
03SB0100204	03SB0100406	03SB0100610
03SB0110204	03SB0110406	03SB0110610
03SB0120204	03SB0120406	03SB0120610
03SB0130204	03SB0130406	03SB0130610
03SB0140204	03SB0140406	03SB0140610
03SB0150204	03SB0150406	03SB0150610
03SB0160204	03SB0160406	03SB0160610
03SS007A0002	03SS007A0204	03SS007A0406
03SS007A0610	03SS009A0002	03SS0100002
03SS0110002	03SS0120002	03SS0130002
03SS0140002	03SS0150002	03SS0160002
03SS0170002	FD03-101314	

1/Aqueous/GRO

TB02-101314

OVERVIEW

The sample set for FRMR NCBC Davisville, CTO WE01, SDG N1911 consisted of thirty-eight (38) soil samples and one (1) trip blank. The samples were analyzed for total petroleum hydrocarbons (TPH) (C9-C40) and gasoline range organics (GRO). The trip blank sample (TB02-101314) was analyzed for GRO only. One (1) field duplicate sample pair was included in this sample delivery group (SDG): 03SB0160204 / FD03-101314.

The samples were collected by Tetra Tech on October 13, 2014 and analyzed by Spectrum Analytical, Inc. for all fractions. All analyses were conducted in accordance with EPA SW-846 Method 8015D analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Blank Results
* • Initial and Continuing Calibration
* • Surrogate Spike Recoveries
* • Internal Standards
  • Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
  • Matrix Spike / Matrix Spike Duplicate (MS/MSD) Results

* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

LCS/LCSD

The LCS/LCSD relative percent difference (RPD) for GRO exceeded the quality control limit for batch 79651. No action was taken on this basis because the percent recoveries for the LCS and LCSD were acceptable.

MS/MSD

The TPH (C9-C40) MS/MSD performed on sample 03SS0160002 had percent recoveries greater than the quality control limit in the MS and MSD. The detected TPH (C9-C40) result for sample 03SS0160002 was qualified as estimated (J).

ADDITIONAL COMMENTS

Sample 03SB0140610 were analyzed at a ten-fold dilution due to a GRO concentration greater than the linear calibration range of the instrument.

Samples 03SS0140002 and 03SS0160002 were analyzed at five-fold dilutions due to TPH (C9-C40) concentrations greater than the linear calibration range of the instrument.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: MS/MSD percent recovery noncompliance resulted in the qualification of TPH (C9-C40) data for one sample.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	03SB009A0204						03SB009A0406					
SDG: N1911	LAB_ID	N1911-07A						N1911-08A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.4			94.4			95.3			94.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					640	U					590	U	
TPH (C09-C40)		47						250					

PROJ_NO: 01813	NSAMPLE	03SB009A0610						03SB0100204					
SDG: N1911	LAB_ID	N1911-09A						N1911-03A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.3			94.3			90.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					2300						710	U	
TPH (C09-C40)		200						15					

PROJ_NO: 01813	NSAMPLE	03SB0100406						03SB0100610					
SDG: N1911	LAB_ID	N1911-04A						N1911-05A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.5			93.5			94.2			94.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					740	U					710	U	
TPH (C09-C40)		300						120					

PROJ_NO: 01813	NSAMPLE	03SB0110204						03SB0110406					
SDG: N1911	LAB_ID	N1911-15A						N1911-16A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.4			96.4			97.6			97.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					690	U					580	U	
TPH (C09-C40)		11						9					

PROJ_NO: 01813	NSAMPLE	03SB0110610						03SB0120204					
SDG: N1911	LAB_ID	N1911-17A						N1911-19A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.5			93.5			96.4			96.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					700	U					600	U	
TPH (C09-C40)		55						16					

PROJ_NO: 01813	NSAMPLE	03SB0120406						03SB0120610					
SDG: N1911	LAB_ID	N1911-20A						N1911-21A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	97.3			97.3			90.8			90.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					680	U					720	U	
TPH (C09-C40)		47						16					

PROJ_NO: 01813	NSAMPLE	03SB0130204						03SB0130406					
SDG: N1911	LAB_ID	N1911-28A						N1911-29A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			91.6			91.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					660	U					710	U	
TPH (C09-C40)		36						81					

PROJ_NO: 01813	NSAMPLE	03SB0130610						03SB0140204					
SDG: N1911	LAB_ID	N1911-30A						N1911-32A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.4			95.4			96.1			96.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					600	U					640	U	
TPH (C09-C40)		390						220					

PROJ_NO: 01813	NSAMPLE	03SB0140406						03SB0140610			03SB0140610DL		
SDG: N1911	LAB_ID	N1911-33A						N1911-34A			N1911-34BDL		
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014			10/13/2014		
MEDIA: SOIL	QC_TYPE	NM						NM			NM		
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.3			96.3			92.3			92.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					19000						460000		
TPH (C09-C40)		230						160					

PROJ_NO: 01813	NSAMPLE	03SB0150204						03SB0150406					
SDG: N1911	LAB_ID	N1911-36A						N1911-37A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.7			95.7			96.1			96.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					790	U					570	U	
TPH (C09-C40)		26						84					

PROJ_NO: 01813	NSAMPLE	03SB0150610						03SB0160204					
SDG: N1911	LAB_ID	N1911-38A						N1911-23A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.1			94.1			93.9			93.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					760	U					860	U	
TPH (C09-C40)		79						17					

PROJ_NO: 01813	NSAMPLE	03SB0160406						03SB0160610					
SDG: N1911	LAB_ID	N1911-24A						N1911-25A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.7			93.7			93.0			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					590	U					570	U	
TPH (C09-C40)		8.4						13					

PROJ_NO: 01813	NSAMPLE	03SS007A0002						03SS007A0204					
SDG: N1911	LAB_ID	N1911-10A						N1911-11A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.4			94.4			94.8			94.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					690	U					640	U	
TPH (C09-C40)		16						8.7					

PROJ_NO: 01813	NSAMPLE	03SS007A0406						03SS007A0610					
SDG: N1911	LAB_ID	N1911-12A						N1911-13A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.1			95.1			93.4			93.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					730	U					640	U	
TPH (C09-C40)		89						11					

PROJ_NO: 01813	NSAMPLE	03SS009A0002						03SS0100002					
SDG: N1911	LAB_ID	N1911-06A						N1911-02A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.3			95.3			94.4			94.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					640	U	
TPH (C09-C40)		63						120					

PROJ_NO: 01813	NSAMPLE	03SS0110002						03SS0120002					
SDG: N1911	LAB_ID	N1911-14A						N1911-18A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.4			94.4			95.3			95.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					640	U	
TPH (C09-C40)		120						240					

PROJ_NO: 01813	NSAMPLE	03SS0130002						03SS0140002					
SDG: N1911	LAB_ID	N1911-27A						N1911-31A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.3			93.3			94.0			94.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					720	U					900	U	
TPH (C09-C40)		78						1000					

PROJ_NO: 01813	NSAMPLE	03SS0150002						03SS0160002					
SDG: N1911	LAB_ID	N1911-35A						N1911-22A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.2			92.2			95.7			95.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					860	U					690	U	
TPH (C09-C40)		330						49	J	D			

PROJ_NO: 01813	NSAMPLE	03SS0170002						FD03-101314					
SDG: N1911	LAB_ID	N1911-39A						N1911-26A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.7			94.7			93.5			93.5		
	DUP_OF							03SB0160204			03SB0160204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					630	U					670	U	
TPH (C09-C40)		40						14					

PROJ_NO: 01813	NSAMPLE	TB02-101314		
SDG: N1911	LAB_ID	N1911-01A		
FRACTION: PET	SAMP_DATE	10/13/2014		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	100.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		1000	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client: Tetra Tech, Inc.
Client Sample ID: 03SB009A0204
Lab ID: N1911-07

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/16/2014 12:51	79528
Surrogate: Bromofluorobenzene	105			79-118	%REC	1	10/16/2014 12:51	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB009A0406
Lab ID: N1911-08

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/22/2014 12:03	79638
Surrogate: Bromofluorobenzene	97.5			79-118	%REC	1	10/22/2014 12:03	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB009A0610
Lab ID: N1911-09

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	2300		1500 ^	1500	ug/Kg	1	10/22/2014 12:24	79638
Surrogate: Bromofluorobenzene	100			79-118	%REC	1	10/22/2014 12:24	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0100204
Lab ID: N1911-03

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 9:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/16/2014 12:05	79528
Surrogate: Bromofluorobenzene	87.9			79-118	%REC	1	10/16/2014 12:05	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0100406
Lab ID: N1911-04
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 9:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/22/2014 11:17	79638
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/22/2014 11:17	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0100610
Lab ID: N1911-05

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 9:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/22/2014 11:39	79638
Surrogate: Bromofluorobenzene	92.4			79-118	%REC	1	10/22/2014 11:39	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0110204
Lab ID: N1911-15

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_S**		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/16/2014 15:52	79528
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/16/2014 15:52	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0110406
Lab ID: N1911-16
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/22/2014 14:25	79638
Surrogate: Bromofluorobenzene	95.4			79-118	%REC	1	10/22/2014 14:25	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0110610
Lab ID: N1911-17
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/22/2014 14:49	79638
Surrogate: Bromofluorobenzene	98.1			79-118	%REC	1	10/22/2014 14:49	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0120204 Project: CED Area, WE01-Davisville
Lab ID: N1911-19 Collection Date: 10/13/14 10:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/17/2014 9:22	79548
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/17/2014 9:22	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0120406
Lab ID: N1911-20
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/22/2014 15:14	79638
Surrogate: Bromofluorobenzene	79.7			79-118	%REC	1	10/22/2014 15:14	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0120610
Lab ID: N1911-21

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/22/2014 15:36	79638
Surrogate: Bromofluorobenzene	92.1			79-118	%REC	1	10/22/2014 15:36	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0130204
Lab ID: N1911-28
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 12:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/17/2014 11:29	79548
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/17/2014 11:29	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0130406
Lab ID: N1911-29
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 12:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/22/2014 16:44	79638
Surrogate: Bromofluorobenzene	95.0			79-118	%REC	1	10/22/2014 16:44	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0130610
Lab ID: N1911-30

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 12:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/23/2014 9:26	79651
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/23/2014 9:26	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0140204
Lab ID: N1911-32
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/17/2014 12:13	79548
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/17/2014 12:13	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0140406 Project: CED Area, WE01-Davisville
Lab ID: N1911-33 Collection Date: 10/13/14 13:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	19000		1700 ^	1700	ug/Kg	1	10/23/2014 9:49	79651
Surrogate: Bromofluorobenzene	83.3			79-118	%REC	1	10/23/2014 9:49	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0140610
Lab ID: N1911-34
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	410000	E	2200 ^	2200	ug/Kg	1	10/23/2014 10:11	79651
Surrogate: Bromofluorobenzene	1430	S		79-118	%REC	1	10/23/2014 10:11	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0140610
Lab ID: N1911-34

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_S**		
Gasoline Range Organics	460000		22000 ^	22000	ug/Kg	10	10/23/2014 16:00	79651
Surrogate: Bromofluorobenzene	98.0			79-118	%REC	10	10/23/2014 16:00	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0150204
Lab ID: N1911-36
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/17/2014 13:04	79548
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/17/2014 13:04	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0150406
Lab ID: N1911-37

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1400 ^	1400	ug/Kg	1	10/23/2014 15:17	79651
Surrogate: Bromofluorobenzene	97.5			79-118	%REC	1	10/23/2014 15:17	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0150610
Lab ID: N1911-38

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/23/2014 15:38	79651
Surrogate: Bromofluorobenzene	98.7			79-118	%REC	1	10/23/2014 15:38	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0160204 Project: CED Area, WE01-Davisville
Lab ID: N1911-23 Collection Date: 10/13/14 11:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2100 ^	2100	ug/Kg	1	10/17/2014 10:10	79548
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/17/2014 10:10	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0160406
Lab ID: N1911-24

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/22/2014 15:59	79638
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/22/2014 15:59	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0160610
Lab ID: N1911-25
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1400 ^	1400	ug/Kg	1	10/22/2014 16:22	79638
Surrogate: Bromofluorobenzene	97.0			79-118	%REC	1	10/22/2014 16:22	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0002 Project: CED Area, WE01-Davisville
Lab ID: N1911-10 Collection Date: 10/13/14 10:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/16/2014 13:14	79528
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/16/2014 13:14	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0204
Lab ID: N1911-11

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/16/2014 15:06	79528
Surrogate: Bromofluorobenzene	105			79-118	%REC	1	10/16/2014 15:06	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0406
Lab ID: N1911-12

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/22/2014 12:54	79638
Surrogate: Bromofluorobenzene	92.4			79-118	%REC	1	10/22/2014 12:54	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0610
Lab ID: N1911-13

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/22/2014 13:17	79638
Surrogate: Bromofluorobenzene	95.4			79-118	%REC	1	10/22/2014 13:17	79638

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS009A0002
Lab ID: N1911-06
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 9:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/16/2014 12:27	79528
Surrogate: Bromofluorobenzene	109			79-118	%REC	1	10/16/2014 12:27	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0100002
Lab ID: N1911-02
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 9:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/16/2014 11:40	79528
Surrogate: Bromofluorobenzene	107			79-118	%REC	1	10/16/2014 11:40	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0110002
Lab ID: N1911-14

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/16/2014 15:29	79528
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/16/2014 15:29	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0120002
Lab ID: N1911-18
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/16/2014 16:15	79528
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/16/2014 16:15	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0130002
Lab ID: N1911-27

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 12:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/17/2014 11:08	79548
Surrogate: Bromofluorobenzene	88.5			79-118	%REC	1	10/17/2014 11:08	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0140002 Project: CED Area, WE01-Davisville
Lab ID: N1911-31 Collection Date: 10/13/14 13:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2200 ^	2200	ug/Kg	1	10/17/2014 11:51	79548
Surrogate: Bromofluorobenzene	97.2			79-118	%REC	1	10/17/2014 11:51	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0150002 Project: CED Area, WE01-Davisville
Lab ID: N1911-35 Collection Date: 10/13/14 13:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2100 ^	2100	ug/Kg	1	10/17/2014 12:36	79548
Surrogate: Bromofluorobenzene	100			79-118	%REC	1	10/17/2014 12:36	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0160002 Project: CED Area, WE01-Davisville
Lab ID: N1911-22 Collection Date: 10/13/14 11:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/17/2014 9:47	79548
Surrogate: Bromofluorobenzene	109			79-118	%REC	1	10/17/2014 9:47	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0170002
Lab ID: N1911-39

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/17/2014 13:27	79548
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/17/2014 13:27	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: FD03-101314
Lab ID: N1911-26
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/17/2014 10:39	79548
Surrogate: Bromofluorobenzene	92.9			79-118	%REC	1	10/17/2014 10:39	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: TB02-101314
Lab ID: N1911-01

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 8:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2500 ^	2500	ug/Kg	1	10/16/2014 11:16	79528
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/16/2014 11:16	79528

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0002
Lab ID: N1911-10

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	16		7.4 ^	7.4	mg/Kg	1	10/29/2014 12:00	79718
Surrogate: ortho-Terphenyl	89.7			50-150	%REC	1	10/29/2014 12:00	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0204
Lab ID: N1911-11
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	8.7		7.4 ^	7.4	mg/Kg	1	10/29/2014 12:21	79718
Surrogate: ortho-Terphenyl	80.6			50-150	%REC	1	10/29/2014 12:21	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0406 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-12 **Collection Date:** 10/13/14 10:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	89		7.3 ^	7.3	mg/Kg	1	10/27/2014 19:30	79625
Surrogate: ortho-Terphenyl	78.5			50-150	%REC	1	10/27/2014 19:30	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS007A0610
Lab ID: N1911-13

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	11		7.4 ^	7.4	mg/Kg	1	10/27/2014 16:42	79625
Surrogate: ortho-Terphenyl	69.9			50-150	%REC	1	10/27/2014 16:42	79625

Client: Tetra Tech, Inc.
Client Sample ID: 03SS009A0002 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-06 **Collection Date:** 10/13/14 9:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID							**TPH_S**	
Extractable Total Petroleum Hydrocarbon	63		7.3 ^	7.3	mg/Kg	1	10/29/2014 16:12	79718
Surrogate: ortho-Terphenyl	68.4			50-150	%REC	1	10/29/2014 16:12	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0100002 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-02 **Collection Date:** 10/13/14 9:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	120		7.3 ^	7.3	mg/Kg	1	10/29/2014 15:09	79718
Surrogate: ortho-Terphenyl	111			50-150	%REC	1	10/29/2014 15:09	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0110002 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-14 **Collection Date:** 10/13/14 11:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	120		7.4 ^	7.4	mg/Kg	1	10/29/2014 19:23	79718
Surrogate: ortho-Terphenyl	56.4			50-150	%REC	1	10/29/2014 19:23	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0120002 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-18 **Collection Date:** 10/13/14 10:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	240		7.2 ^	7.2	mg/Kg	1	10/29/2014 19:44	79718
Surrogate: ortho-Terphenyl	87.2			50-150	%REC	1	10/29/2014 19:44	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0130002 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-27 **Collection Date:** 10/13/14 12:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	78		7.4 ^	7.4	mg/Kg	1	10/29/2014 21:09	79718
Surrogate: ortho-Terphenyl	84.4			50-150	%REC	1	10/29/2014 21:09	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0140002
Lab ID: N1911-31

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	1000		37 ^	37	mg/Kg	5	10/29/2014 21:30	79718
Surrogate: ortho-Terphenyl	86.8			50-150	%REC	5	10/29/2014 21:30	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0150002 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-35 **Collection Date:** 10/13/14 13:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	330		7.6 ^	7.6	mg/Kg	1	10/29/2014 22:12	79718
Surrogate: ortho-Terphenyl	119			50-150	%REC	1	10/29/2014 22:12	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0160002 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-22 **Collection Date:** 10/13/14 11:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	49		36 ^	36	mg/Kg	5	10/30/2014 13:56	79718
Surrogate: ortho-Terphenyl	59.1			50-150	%REC	5	10/30/2014 13:56	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/05/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0170002
Lab ID: N1911-39

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	40		7.3 ^	7.3	mg/Kg	1	10/29/2014 17:36	79718
Surrogate: ortho-Terphenyl	109			50-150	%REC	1	10/29/2014 17:36	79718

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB009A0204
Lab ID: N1911-07
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	47		7.3 ^	7.3	mg/Kg	1	10/29/2014 16:33	79718
Surrogate: ortho-Terphenyl	81.1			50-150	%REC	1	10/29/2014 16:33	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB009A0406
Lab ID: N1911-08

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	250		7.3 ^	7.3	mg/Kg	1	10/27/2014 18:48	79625
Surrogate: ortho-Terphenyl	87.4			50-150	%REC	1	10/27/2014 18:48	79625

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB009A0610 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-09 **Collection Date:** 10/13/14 10:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	200		7.4 ^	7.4	mg/Kg	1	10/27/2014 19:09	79625
Surrogate: ortho-Terphenyl	75.7			50-150	%REC	1	10/27/2014 19:09	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0100204 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-03 **Collection Date:** 10/13/14 9:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	15		7.7 ^	7.7	mg/Kg	1	10/29/2014 11:39	79718
Surrogate: ortho-Terphenyl	99.9			50-150	%REC	1	10/29/2014 11:39	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0100406
Lab ID: N1911-04
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 9:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	300		7.4 ^	7.4	mg/Kg	1	10/27/2014 18:06	79625
Surrogate: ortho-Terphenyl	75.9			50-150	%REC	1	10/27/2014 18:06	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0100610
Lab ID: N1911-05
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 9:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	120		7.3 ^	7.3	mg/Kg	1	10/27/2014 18:27	79625
Surrogate: ortho-Terphenyl	85.1			50-150	%REC	1	10/27/2014 18:27	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0110204 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-15 **Collection Date:** 10/13/14 11:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	11		7.2 ^	7.2	mg/Kg	1	10/29/2014 12:42	79718
Surrogate: ortho-Terphenyl	82.0			50-150	%REC	1	10/29/2014 12:42	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0110406
Lab ID: N1911-16
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	9.0		7.1 ^	7.1	mg/Kg	1	10/27/2014 15:40	79625
Surrogate: ortho-Terphenyl	57.2			50-150	%REC	1	10/27/2014 15:40	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0110610 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-17 **Collection Date:** 10/13/14 11:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	55		7.4 ^	7.4	mg/Kg	1	10/27/2014 19:51	79625
Surrogate: ortho-Terphenyl	62.7			50-150	%REC	1	10/27/2014 19:51	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0120204 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-19 **Collection Date:** 10/13/14 10:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	16		7.2 ^	7.2	mg/Kg	1	10/29/2014 13:03	79718
Surrogate: ortho-Terphenyl	103			50-150	%REC	1	10/29/2014 13:03	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0120406
Lab ID: N1911-20
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	47		7.1 ^	7.1	mg/Kg	1	10/27/2014 20:12	79625
Surrogate: ortho-Terphenyl	77.3			50-150	%REC	1	10/27/2014 20:12	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0120610
Lab ID: N1911-21
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 10:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	16		7.6 ^	7.6	mg/Kg	1	10/27/2014 21:56	79625
Surrogate: ortho-Terphenyl	102			50-150	%REC	1	10/27/2014 21:56	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0130204
Lab ID: N1911-28
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 12:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	36		7.5 ^	7.5	mg/Kg	1	10/29/2014 17:15	79718
Surrogate: ortho-Terphenyl	98.8			50-150	%REC	1	10/29/2014 17:15	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0130406 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-29 **Collection Date:** 10/13/14 12:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	81		7.6 ^	7.6	mg/Kg	1	10/27/2014 22:16	79625
Surrogate: ortho-Terphenyl	87.3			50-150	%REC	1	10/27/2014 22:16	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0130610 **Project:** CED Area, WE01-Davisville
Lab ID: N1911-30 **Collection Date:** 10/13/14 12:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	390		7.2 ^	7.2	mg/Kg	1	10/27/2014 22:37	79625
Surrogate: ortho-Terphenyl	74.4			50-150	%REC	1	10/27/2014 22:37	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0140204
Lab ID: N1911-32
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	220		7.2 ^	7.2	mg/Kg	1	10/29/2014 21:51	79718
Surrogate: ortho-Terphenyl	77.5			50-150	%REC	1	10/29/2014 21:51	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0140406
Lab ID: N1911-33

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	230		7.3 ^	7.3	mg/Kg	1	10/27/2014 22:58	79625
Surrogate: ortho-Terphenyl	102			50-150	%REC	1	10/27/2014 22:58	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0140610
Lab ID: N1911-34
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	160		7.5 ^	7.5	mg/Kg	1	10/27/2014 23:18	79625
Surrogate: ortho-Terphenyl	93.6			50-150	%REC	1	10/27/2014 23:18	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0150204
Lab ID: N1911-36

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	26		7.3 ^	7.3	mg/Kg	1	10/29/2014 17:58	79718
Surrogate: ortho-Terphenyl	92.3			50-150	%REC	1	10/29/2014 17:58	79718

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0150406
Lab ID: N1911-37
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	84		7.2 ^	7.2	mg/Kg	1	10/27/2014 23:39	79625
Surrogate: ortho-Terphenyl	92.1			50-150	%REC	1	10/27/2014 23:39	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0150610
Lab ID: N1911-38
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 13:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	79		7.4 ^	7.4	mg/Kg	1	10/28/2014 0:00	79625
Surrogate: ortho-Terphenyl	79.6			50-150	%REC	1	10/28/2014 0:00	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0160204
Lab ID: N1911-23

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	17		7.4 ^	7.4	mg/Kg	1	10/29/2014 13:24	79718
Surrogate: ortho-Terphenyl	92.2			50-150	%REC	1	10/29/2014 13:24	79718

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0160406
Lab ID: N1911-24
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.4		7.4 ^	7.4	mg/Kg	1	10/28/2014 12:06	79625
Surrogate: ortho-Terphenyl	97.8			50-150	%REC	1	10/28/2014 12:06	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0160610
Lab ID: N1911-25
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 11:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	13		7.5 ^	7.5	mg/Kg	1	10/27/2014 16:22	79625
Surrogate: ortho-Terphenyl	94.0			50-150	%REC	1	10/27/2014 16:22	79625

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD03-101314
Lab ID: N1911-26
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	14		7.4 ^	7.4	mg/Kg	1	10/29/2014 13:45	79718
Surrogate: ortho-Terphenyl	92.4			50-150	%REC	1	10/29/2014 13:45	79718

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: Former NCBC Davisville SDG: N1911

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Sullivan Date: 11/19/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

Case: From NCBC Davisville SDG: N1911

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Sedbrook Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sadlon Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: K1911

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlazo

Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCRC Davisville SDG: N1911

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Ludlow Date: 11/19/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: FRMR NCBC Davisville SDG: N191

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlazo

Date: 11/19/14

See DV Report

EPA NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sedbrook Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FMR NCBC Davisville SDG: N1911

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Swallow Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? Y N

Did the laboratory analyze the initial calibration at the appropriate concentration levels? Y N

Validator: Edward Sedlay Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1941

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sedbrook Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FLMR NCBC Davisville SDG: N1911

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlazo

Date: 1/19/11

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlmyer Date: 11/19/14

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Dawsville SDG: N1911

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: Edward Sedlmyer Date: 11/19/14

see DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Sidlas Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNEBCDavisville SDG: N1911

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sedlazo Date: 4/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNCBC Dover ville SDG: N1911

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sedlazo

Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedbrook Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NC&C Daisyville SDG: N1911

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1,2,3-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward J. Lodmyer Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Lodbyer Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBE Louisville SDG: N1911

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Ledlow Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. Y N

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? Y N

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Sedlmayer Date: 11/19/04

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRAR NCBC Davisville SDG: N1911

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlmyer Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlmayer Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sellinger Date: 4/19/04

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Kelly Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Daviswille SDG: N1911

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sidlyar Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sedlmyer Date: 11/19/14

SecDV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Sedmyer Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlay Date: 11/19/19

SecDU Report

EPA NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward S. Hallinger Date: 11/19/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: FR MR NCBC Davisville SDG: N1911

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Ledbetter Date: 11/17/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Coddsville SDG: N1911

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlmayer Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Ludlum Date: 11/19/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1911

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Sedlazo

Date: 11/19/19

APPENDIX D

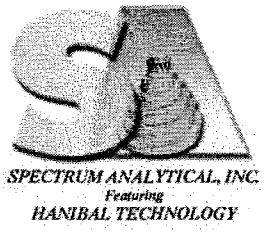
SUPPORT DOCUMENTATION

FORMER NCBC DAVISVILLE
SOIL DATA
N1911

FRACTION	CHEMICAL	03SB0160204	UNITS	FD03-101314	RPD	D
PET	TPH (C09-C40)	17	MG/KG	14	19.35	3.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Report Date:
07-Nov-14 16:45



☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Attn: Amy Thomson

Work Order: N1911
Project : CED Area, WE01-Davisville
Project #:

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1911-01	TB02-101314	Soil	13-Oct-14 08:00	14-Oct-14 07:40
N1911-02	03SS0100002	Soil	13-Oct-14 09:30	14-Oct-14 07:40
N1911-03	03SB0100204	Soil	13-Oct-14 09:35	14-Oct-14 07:40
N1911-04	03SB0100406	Soil	13-Oct-14 09:40	14-Oct-14 07:40
N1911-05	03SB0100610	Soil	13-Oct-14 09:45	14-Oct-14 07:40
N1911-06	03SS009A0002	Soil	13-Oct-14 09:55	14-Oct-14 07:40
N1911-07	03SB009A0204	Soil	13-Oct-14 10:00	14-Oct-14 07:40
N1911-08	03SB009A0406	Soil	13-Oct-14 10:05	14-Oct-14 07:40
N1911-09	03SB009A0610	Soil	13-Oct-14 10:10	14-Oct-14 07:40
N1911-10	03SS007A0002	Soil	13-Oct-14 10:15	14-Oct-14 07:40
N1911-11	03SS007A0204	Soil	13-Oct-14 10:20	14-Oct-14 07:40
N1911-12	03SS007A0406	Soil	13-Oct-14 10:25	14-Oct-14 07:40
N1911-13	03SS007A0610	Soil	13-Oct-14 10:30	14-Oct-14 07:40
N1911-14	03SS0110002	Soil	13-Oct-14 11:10	14-Oct-14 07:40
N1911-15	03SB0110204	Soil	13-Oct-14 11:15	14-Oct-14 07:40
N1911-16	03SB0110406	Soil	13-Oct-14 11:20	14-Oct-14 07:40
N1911-17	03SB0110610	Soil	13-Oct-14 11:25	14-Oct-14 07:40
N1911-18	03SS0120002	Soil	13-Oct-14 10:40	14-Oct-14 07:40
N1911-19	03SB0120204	Soil	13-Oct-14 10:45	14-Oct-14 07:40
N1911-20	03SB0120406	Soil	13-Oct-14 10:50	14-Oct-14 07:40
N1911-21	03SB0120610	Soil	13-Oct-14 10:55	14-Oct-14 07:40
N1911-22	03SS0160002	Soil	13-Oct-14 11:40	14-Oct-14 07:40
N1911-23	03SB0160204	Soil	13-Oct-14 11:45	14-Oct-14 07:40
N1911-24	03SB0160406	Soil	13-Oct-14 11:50	14-Oct-14 07:40
N1911-25	03SB0160610	Soil	13-Oct-14 11:55	14-Oct-14 07:40
N1911-26	FD03-101314	Soil	13-Oct-14 00:00	14-Oct-14 07:40
N1911-27	03SS0130002	Soil	13-Oct-14 12:10	14-Oct-14 07:40
N1911-28	03SB0130204	Soil	13-Oct-14 12:15	14-Oct-14 07:40
N1911-29	03SB0130406	Soil	13-Oct-14 12:20	14-Oct-14 07:40
N1911-30	03SB0130610	Soil	13-Oct-14 12:25	14-Oct-14 07:40
N1911-31	03SS0140002	Soil	13-Oct-14 13:00	14-Oct-14 07:40
N1911-32	03SB0140204	Soil	13-Oct-14 13:05	14-Oct-14 07:40
N1911-33	03SB0140406	Soil	13-Oct-14 13:10	14-Oct-14 07:40
N1911-34	03SB0140610	Soil	13-Oct-14 13:15	14-Oct-14 07:40
N1911-35	03SS0150002	Soil	13-Oct-14 13:30	14-Oct-14 07:40
N1911-36	03SB0150204	Soil	13-Oct-14 13:35	14-Oct-14 07:40
N1911-37	03SB0150406	Soil	13-Oct-14 13:40	14-Oct-14 07:40
N1911-38	03SB0150610	Soil	13-Oct-14 13:45	14-Oct-14 07:40
N1911-39	03SS0170002	Soil	13-Oct-14 14:00	14-Oct-14 07:40

Report Date:
07-Nov-14 16:45

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1911
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

N1911

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 7

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/o Tetra Tech Inc
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N Kingstown State: RI
Sampler(s): K Jaikut P Seward W Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | – |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1911

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (40z jars)	# of Clear Glass	# of Plastic	Analyses: TPHGRO (MTBE-NAPHTHALENE)	TPHDRO (C9-C40) TOTAL SOILS	QA/QC Reporting Level
01	TB02-10314	10/13	0800	G	QC	1	–	–	–	1	1	
02	0355010 0002	10/13	0930	G	SO	3	2	–	–	3	2	Lab QC volume # 2
03	035B01002 04	10/13	0935	G	SO	1	1	–	–	1	1	
04	03 SB0100406	10/13	0940	G	SO	1	1	–	–	1	1	On Hold
05	03 SB0100610	10/13	0945	G	SO	1	1	–	–	1	1	On Hold
06	~~035B009a~~ KJ 10/13											
07	0355009a0002	10/13	0955	G	SO	1	1	–	–	1	1	
08	035B009a0204	10/13	1000	G	SO	1	1	–	–	1	1	
09	03 SB 009a 0406	10/13	1005	G	SO	1	1	–	–	1	1	On Hold
10	03 SB009a0610	10/13	1010	G	SO	1	1	–	–	1	1	On Hold

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to Lab Comment

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Pryor	K Jaikut	10-14-14	0740	3.1, 3.9

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

JR

N1911

SPECTRUM ANALYTICAL, INC.
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Page 2 of 7

CHAIN OF CUSTODY RECORD

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- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. S. Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Talbot P. Seward W Bryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml Methanol 12= _____

List preservative code below: 11 | | – | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1911

	Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40 mL vials)	# of Amber Glass (402 Jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-NAPHTHALENE)		TPH DRO (C9-C40) TOTAL SOLIDS						QA/QC Reporting Level / State-specific reporting standards:
10	11	03SS007a 0002	10/13	1015	G	SO	1	1			1		1						
11	12	03SS007a 0204	10/13	1020	G	SO	1	1			1		1						
12	13	03SS007a 0406	10/13	1025	G	SO	1	1			1		1						On Hold
13	14	03SS007a 0610	10/13	1030	G	SO	1	1			1		1						On Hold
14	15	03SS011 0002	10/13	1110	G	SO	1	1			1		1						
15	16	03SB011 0204	10/13	1115	G	SO	1	1			1		1						
16	17	03SB011 0406	10/13	1120	G	SO	1	1			1		1						On Hold
17	18	03SB011 0610	10/13	1125	G	SO	1	1			1		1						On Hold
18	19	03SS012 0002	10/13	1040	G	SO	1	1			1		1						
19	20	03SB012 0204	10/13	1045	G	SO	1	1			1		1						

Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt R		10-14-14	0740	3.1, 3.9

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Page 9 of 460

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FR

Revised Feb 2013

N1911

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Featuring
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CHAIN OF CUSTODY RECORD

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Report To: Scott Anderson
c/o Tetra Tech, Inc
6961 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P. Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | – |

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DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1911 (Cancelled)

Lab Id	Sample Id:	Date: 2014	Time:	Type	Matrix	# of VOA Vials (4 preserved)	# of Amber Glass (4 oz jar)	# of Clear Glass	# of Plastic	TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	QA/QC Reporting Level
20 21	03SB012 0406	10/13	1050	G	SO	1	1			1	1	On Hold
21 22	03SB012 0610	10/13	1055	G	SO	1	1			1	1	On Hold
22 23	03SS016 0002	10/13	1140	G	SO	3	2			3	2	Lab QC volume #3
23 24	03SB016 0204	10/13	1145	G	SO	1	1			1	1	
24 25	03SB016 0406	10/13	1150	G	SO	1	1			1	1	On Hold
25	03SB016 0610	10/13	1155	G	SO	1	1			1	1	On Hold
26	FD03-101314	10/13	0000	G	SO	1	1			1	1	
27	03SS013 0002	10/13	1210	G	SO	1	1			1	1	
28	03SB013 0204	10/13	1215	G	SO	1	1			1	1	
29	03SB013 0406	10/13	1220	G	SO	1	1			1	1	On Hold

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Pa		10-14-14	0740	3.1, 3.5

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

JR

N1911

SPECTRUM ANALYTICAL, INC.
Featuring
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CHAIN OF CUSTODY RECORD

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☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
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· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K. Jalkut P. Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 —

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1911

Lab Id:	Sample Id:	Date: 2014	Time:	Type	Matrix	Containers: # of VOA Vials (4pt.vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids						
30	03SB0130610	10/13	1235	G	SO	1	1			1	1						On Hold
31	03SB0140002	10/13	1300	G	SO	1	1			1	1						
32	03SB0140204	10/13	1305	G	SO	1	1			1	1						
33	03SB0140406	10/13	1310	G	SO	1	1			1	1						On Hold
34	03SB014 0610	10/13	1315	G	SO	1	1			1	1						On Hold
35	03 ~~SB015~~ SS0150002	10/13	1330	G	SO	1	1			1	1						
36	03SB0150204	10/13	1335	G	SO	1	1			1	1						
37	03SB0150406	10/13	1340	G	SO	1	1			1	1						On Hold
38	03SB0150610	10/13	1345	G	SO	1	1			1	1						On Hold
39	03SS0170002	10/13	1400	G	SO	1	1			1	1						

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to Lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
		10-14-14	0740	3.1, 3.9

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

IC

Edward Lawler [Warwick]

From: Sinagoga, Leeann [LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 9:27 AM
To: Edward Lawler [RI]; Jennifer Emerson [RI]; Agnes Huntley [RI]
Cc: Anderson, Scott; Ciofani, Leigh Ann; Jalkut, Kayleen; Dale, Jeffrey M CIV NAVFAC MIDLANT, EV (jeffrey.m.dale@navy.mil); Barney, David A CIV OASN (EI&E), BRAC PMO NE (david.a.barney@navy.mil); Logan, Joe
Subject: FW: TPH Results

N1987 – ✓
N1911 – ✓
N1914 → ✓
N1931 → ✓

Good Morning Ed,

I have looked over the GRO/DRO data sent on Friday.

Since we are getting a few hits > the RIDEM 500 mg/kg DRO res DEC standard, we've decided to analyze all samples for GRO/DRO.

So, please analyze all soil samples submitted (including those currently on-hold).

If you can, please continue to send preliminary results for both waters and soils.... Getting a preliminary look at the data is extremely helpful.

Thanks very much for your time and support,

Lee Ann

PS THANKS MUCH TO JENNIFER AND AGNES FOR PITCHING IN LAST WEEK WHILE YOU WERE GONE!

Lee Ann Sinagoga | Department Manager/Chemistry & Risk Assessment
Direct: 412.921.8887 | Main: 412.921.7090 | Fax: 412.921.4040
leeann.sinagoga@tetratech.com

Tetra Tech | Chemistry & Risk Assessment
661 Andersen Drive | Pittsburgh, PA 15220 | www.tetratech.com

-----Original Message-----
From: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV [mailto:jeffrey.m.dale@navy.mil]
Sent: Monday, October 20, 2014 9:13 AM
To: Sinagoga, Leeann
Cc: Anderson, Scott
Subject: RE: TPH Results

Agree 100% with you.
Thanks - got your email yesterday but have a deadline of today.
Jeff

-----Original Message-----
From: Sinagoga, Leeann [mailto:LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 8:52 AM
To: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV
Cc: Anderson, Scott
Subject: RE: TPH Results

Hi Jeff,

Just to follow up on my message yesterday...

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: IGP	Page 01 of 01
Reviewed By: AMA	Log-in Date 10/14/2014
Work Order: N1911	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent; Intact / Broken
2. Custody Seal Nos. — N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker; Present / Absent
5. Airbill No. — Drop Off N/A
6. Sample Tags — Present / Absent; Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent
9. Cooler Temperature — 3.9 °C (3.1°C)
10. Does information on TR/COCs and sample tags agree? — Yes / No
11. Date Received at Laboratory — 10/14/2014
12. Time Received — 07:40

Sample Transfer	
Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1911-01						M	
N1911-02						M	
N1911-03						M	
N1911-04						M	
N1911-05						M	
N1911-06						M	
N1911-07						M	
N1911-08						M	
N1911-09						M	
N1911-10						M	
N1911-11						M	
N1911-12						M	
N1911-13						M	
N1911-14						M	
N1911-15						M	
N1911-16						M	
N1911-17						M	
N1911-18						M	
N1911-19						M	
N1911-20						M	
N1911-21						M	
N1911-22						M	
N1911-23						M	
N1911-24						M	
N1911-25						M	
N1911-26						M	
N1911-27						M	
N1911-28						M	
N1911-29						M	
N1911-30						M	
N1911-31						M	
N1911-32						M	
N1911-33						M	
N1911-34						M	

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form — Yes / No

Rad OK — Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: AMA	Log-in Date 10/14/2014
Work Order: N1911	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	3.9 °C 3.1e
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/14/2014
12. Time Received	07:40

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1911-35						M	
N1911-36						M	
N1911-37						M	
N1911-38						M	
N1911-39						M	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil A= Air

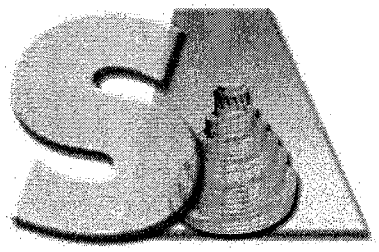
UA = Unpreserved Aqueous H = HCl

M = MeOH E = Encore

N = NaHSO4 F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

* Volatiles *

646 Camp Ave · North Kingstown, RI 02852-4008 · 401-732-3400 · FAX 401-732-3499
www.spectrum-analytical.com

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1911

SW846 8015D GRO, Gasoline Range Organic (GRO) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D GRO

IV. PREPARATION

Soil Samples were prepared following procedures in laboratory test code: SW5035

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: V4
Instrument Type: GC-FID/PID

Description: HP5890 A
Manufacturer: Hewlett-Packard
Model: 5890
GC Column used: 30 m X 0.53 mm ID [um thickness] RTX-502.2 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits with the following exceptions. Please note that the acceptance criteria allow one surrogate recovery outside of the QC limits per fraction.

03SB0140610 (N1911-34B), recovery is above criteria for Bromofluorobenzene at 1425% with criteria of (79-118).

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: 03SS0100002 (N1911-02BMS), 03SS0100002 (N1911-02BMSD), 03SS0160002 (N1911-22BMS) and 03SS0160002 (N1911-22BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

NA.

F. Dilutions:

The following samples were analyzed at dilution:

03SB0140610 (N1911-34BDL) : Dilution Factor: 10

G. Samples:

No other unusual occurrences were noted during sample analysis.

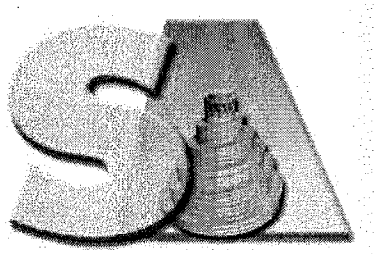
H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____



Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

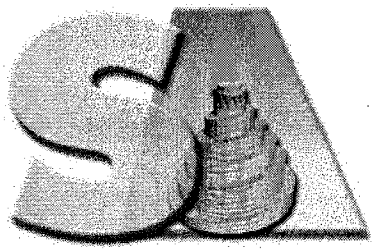
A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

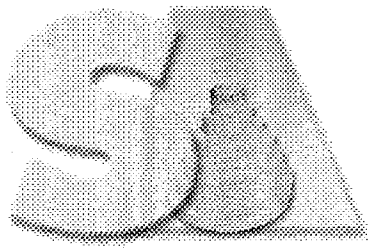
MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

* QC Summary *

646 Camp Avenue · North Kingstown, RI 02852-4008 · 401-732-3400 · FAX 401-732-3499
www.spectrum-analytical.com

CLIENT: Tetra Tech, Inc.
Work Order: N1911
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79528**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/16/14 7:23**			Run ID: **V4_141016A**			
Client ID: **MB-79528**	Batch ID: **79528**	Units: **ug/Kg**			Analysis Date: **10/16/14 9:02**			SeqNo: **2167811**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	19.22		250	20.00	0	96.1	79	118	0			

Sample ID: **MB-79548**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/17/14 7:36**			Run ID: **V4_141017A**			
Client ID: **MB-79548**	Batch ID: **79548**	Units: **ug/Kg**			Analysis Date: **10/17/14 8:59**			SeqNo: **2170594**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	15.85		250	20.00	0	79.2	79	118	0			

Sample ID: **MB-79638**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/22/14 9:44**			Run ID: **V4_141022A**			
Client ID: **MB-79638**	Batch ID: **79638**	Units: **ug/Kg**			Analysis Date: **10/22/14 10:53**			SeqNo: **2170970**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	19.41		250	20.00	0	97.1	79	118	0			

Sample ID: **MB-79651**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/23/14 7:34**			Run ID: **V4_141023A**			
Client ID: **MB-79651**	Batch ID: **79651**	Units: **ug/Kg**			Analysis Date: **10/23/14 9:03**			SeqNo: **2172202**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	21.45		250	20.00	0	107	79	118	0			

Sample ID: **LCS-79528**	SampType: **LCS**	TestCode: **GRO_S**			Prep Date: **10/16/14 7:23**			Run ID: **V4_141016A**			
Client ID: **LCS-79528**	Batch ID: **79528**	Units: **ug/Kg**			Analysis Date: **10/16/14 8:35**			SeqNo: **2167810**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	27350	2500 ^	2500	25000	0	109	80	120	0			
Surrogate: Bromofluorobenzene	22.62		250	20.00	0	113	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1911
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: LCS-79548	SampType: LCS	TestCode: GRO_S	Prep Date: 10/17/14 7:36	Run ID: V4_141017A
Client ID: LCS-79548	Batch ID: 79548	Units: ug/Kg	Analysis Date: 10/17/14 8:37	SeqNo: 2170592

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	24840	2500 ^	2500	25000	0	99.4	80	120	0			
Surrogate: Bromofluorobenzene	19.57		250	20.00	0	97.8	79	118	0			

Sample ID: LCS-79638	SampType: LCS	TestCode: GRO_S	Prep Date: 10/22/14 9:44	Run ID: V4_141022A
Client ID: LCS-79638	Batch ID: 79638	Units: ug/Kg	Analysis Date: 10/22/14 10:04	SeqNo: 2170968

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	27820	2500 ^	2500	25000	0	111	80	120	0			
Surrogate: Bromofluorobenzene	19.39		250	20.00	0	96.9	79	118	0			

Sample ID: LCS-79651	SampType: LCS	TestCode: GRO_S	Prep Date: 10/23/14 7:34	Run ID: V4_141023A
Client ID: LCS-79651	Batch ID: 79651	Units: ug/Kg	Analysis Date: 10/23/14 8:36	SeqNo: 2172201

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	25760	2500 ^	2500	25000	0	103	80	120	0			
Surrogate: Bromofluorobenzene	22.85		250	20.00	0	114	79	118	0			

Sample ID: LCSD-79638	SampType: LCSD	TestCode: GRO_S	Prep Date: 10/22/14 9:44	Run ID: V4_141022A
Client ID: LCSD-79638	Batch ID: 79638	Units: ug/Kg	Analysis Date: 10/22/14 10:28	SeqNo: 2170969

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	26960	2500 ^	2500	25000	0	108	80	120	27820	3.13	20	
Surrogate: Bromofluorobenzene	19.80		250	20.00	0	99.0	79	118	0			

Sample ID: LCSD-79651	SampType: LCSD	TestCode: GRO_S	Prep Date: 10/23/14 7:34	Run ID: V4_141023A
Client ID: LCSD-79651	Batch ID: 79651	Units: ug/Kg	Analysis Date: 10/23/14 16:24	SeqNo: 2172239

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	20140	2500 ^	2500	25000	0	80.6	80	120	25760	24.5	20	R
Surrogate: Bromofluorobenzene	22.33		250	20.00	0	112	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1911
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **N1911-02BMS**	SampType: **MS**	TestCode: **GRO_S**			Prep Date: **10/16/14 7:23**			Run ID: **V4_141016A**				
Client ID: **03SS0100002**	Batch ID: **79528**	Units: **ug/Kg**			Analysis Date: **10/16/14 16:38**			SeqNo: **2168051**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	14830	1700 ^	1700	17050	0	87.0	60	140	0			
Surrogate: Bromofluorobenzene	20.35		170	20.00	0	102	79	118	0			

Sample ID: **N1911-22BMS**	SampType: **MS**	TestCode: **GRO_S**			Prep Date: **10/17/14 7:36**			Run ID: **V4_141017A**				
Client ID: **03SS0160002**	Batch ID: **79548**	Units: **ug/Kg**			Analysis Date: **10/17/14 16:57**			SeqNo: **2170623**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	16570	1600 ^	1600	15960	0	104	60	140	0			
Surrogate: Bromofluorobenzene	19.00		160	20.00	0	95.0	79	118	0			

Sample ID: **N1911-02BMSD**	SampType: **MSD**	TestCode: **GRO_S**			Prep Date: **10/16/14 7:23**			Run ID: **V4_141016A**				
Client ID: **03SS0100002**	Batch ID: **79528**	Units: **ug/Kg**			Analysis Date: **10/16/14 17:02**			SeqNo: **2168052**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	13380	1700 ^	1700	16700	0	80.1	60	140	14830	10.3	20	
Surrogate: Bromofluorobenzene	19.72		170	20.00	0	98.6	79	118	0			

Sample ID: **N1911-22BMSD**	SampType: **MSD**	TestCode: **GRO_S**			Prep Date: **10/17/14 7:36**			Run ID: **V4_141017A**				
Client ID: **03SS0160002**	Batch ID: **79548**	Units: **ug/Kg**			Analysis Date: **10/17/14 17:19**			SeqNo: **2170624**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	16620	1600 ^	1600	16140	0	103	60	140	16570	0.296	20	
Surrogate: Bromofluorobenzene	19.13		160	20.00	0	95.6	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

Data File: \\avogadro\organics\V4.i\141016.B\V4D07932.D
Report Date: 17-Oct-2014 10:09

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07932.D
Analysis Type: WATER
Lab Sample ID: VSTD0504J
Method: \\avogadro\organics\V4.i\141016.B\v4GRO.m

Injection Date: 16-OCT-2014 08:13
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	89665	0.010	0.60692	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32642	0.010	4.18219	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141016.B\V4D07956.D
Report Date: 21-Oct-2014 10:32

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07956.D
Analysis Type: WATER
Lab Sample ID: VSTD0504K
Method: \\avogadro\organics\V4.i\141016.B\v4GRO.m

Injection Date: 16-OCT-2014 17:24
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88851	0.010	1.50858	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	33297	0.010	2.25904	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141017.B\V4D07960.D
Report Date: 22-Oct-2014 15:38

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07960.D
Analysis Type: WATER
Lab Sample ID: VSTD0504L
Method: \\avogadro\organics\V4.i\141017.B\v4GRO.m

Injection Date: 17-OCT-2014 08:15
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	86033	0.010	4.63327	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	33718	0.010	1.02235	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141017.B\V4D07983.D
Report Date: 22-Oct-2014 15:39

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07983.D
Analysis Type: WATER
Lab Sample ID: VSTD0504M
Method: \\avogadro\organics\V4.i\141017.B\v4GRO.m

Injection Date: 17-OCT-2014 17:47
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	81018	0.010	10.19194	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	34024	0.010	0.12426	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141022.B\V4D08030.D
Report Date: 23-Oct-2014 09:21

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08030.D
Analysis Type: WATER
Lab Sample ID: VSTD0504R
Method: \\avogadro\organics\V4.i\141022.B\v4GRO.m

Injection Date: 22-OCT-2014 09:42
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	94837	0.010	-5.12683	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32189	0.010	5.51091	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141022.B\V4D08049.D
Report Date: 23-Oct-2014 09:21

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08049.D
Analysis Type: WATER
Lab Sample ID: VSTD0504S
Method: \\avogadro\organics\V4.i\141022.B\v4GRO.m

Injection Date: 22-OCT-2014 17:09
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	85958	0.010	4.71559	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32857	0.010	3.55092	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141023.B\V4D08050.D
Report Date: 24-Oct-2014 10:48

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08050.D
Analysis Type: WATER
Lab Sample ID: VSTD0504T
Method: \\avogadro\organics\V4.i\141023.B\v4GRO.m

Injection Date: 23-OCT-2014 08:14
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	86389	0.010	4.23824	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	34249	0.010	-0.53489	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141023.B\V4D08072.D
Report Date: 24-Oct-2014 10:50

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08072.D
Analysis Type: WATER
Lab Sample ID: VSTD0504U
Method: \\avogadro\organics\V4.i\141023.B\v4GRO.m

Injection Date: 23-OCT-2014 16:46
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	78525	0.010	12.95525	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32771	0.010	3.80278	20.00000	Averaged

N1911

Spectrum Analytical, Inc. RI Division: Volatile Organics Low/Medium Level Soil Extraction Log

Date	Lab ID		Analysis	Initial Wt. (g)	Final Wt. (g)	Sample Wt. (g)	Extraction Volume (mL)	Sample Type	Solvent&Lot# by/Date*	Comments/ Time of Encore transfer	Analyst
10/15/14	N1907	-30B	GRO	29.92	38.03	8.1	5.0	A	MeOH		W
		-31B		30.23	38.21	8.0					
		-32B		29.90	38.03	8.1					
		-33B		30.15	39.25	9.1					
		-34B		30.03	36.16	6.1					
		-35B		29.99	37.38	7.4					
		-36B		30.02	38.00	8.0					
		-37B		30.22	38.12	7.9					
		-38B		29.91	38.64	8.7					
10/15/14	N1907	-39B		30.02	37.98	8.0					
10/16/14	N1911	-01A		29.24	29.24	5.0					
		-02B		29.94	39.03	9.1					
		-03B		29.99	39.00	9.0					
		-02BMS		29.02	38.51	8.5					
10/16/14	N1911	-02BMSD	GRO	30.07	38.78	8.7	5.0	A	MeOH		W

TL# 4

*=Date added, if different than Rec. date

Sample Type: A. MeOH Pre-preserved; B. DI H2O/Freeze; C. NaHSO4 Pre-preserved; D. Encore; E. Unpreserved Jars

Logbook ID: 90.0189-07/14

94

Reviewed By: W 10/20/14

N4944

Spectrum Analytical, Inc. RI Division: Volatile Organics Low/Medium Level Soil Extraction Log

Date	Lab ID		Analysis	Initial Wt. (g)	Final Wt. (g)	Sample Wt. (g)	Extraction Volume (mL)	Sample Type	Solvent&Lot# by/Date*	Comments/ Time of Encore transfer	Analyst
10/16/14	MB-79528		GRO	NA	NA	5.0	5.0	A	MeOH		WL
	LCS-79528			NA	NA	5.0					
	N1911	-04B		30.08	37.30	7.2					
		-05B		29.96	37.45	7.5					
		-06B		30.03	37.90	7.9					
		-07B		30.10	39.23	9.1					
		-08B		29.27	38.28	9.0					
		-09B		30.06	38.66	8.6					
		-10B		30.00	38.40	8.4					
		-11B		30.03	39.02	9.0					
		-12B		30.08	37.31	7.2					
		-13B		30.03	38.34	8.3					
		-14B		30.11	38.21	8.1					
		-15B		30.10	38.01	7.9					
10/16/14	N1911	-16B	GRO	29.96	38.77	8.8	5.0	A	MeOH		WL

TL# 4

*=Date added, if different than Rec. date

Sample Type: A. MeOH Pre-preserved; B. DI H2O/Freeze; C. NaHSO4 Pre-preserved; D. Encore; E. Unpreserved Jars

Logbook ID: 90.0189-07/14

95

Reviewed By: WL 10/20/14

Spectrum Analytical, Inc. RI Division: Volatile Organics Low/Medium Level Soil Extraction Log

N1911

Date	Lab ID		Analysis	Initial Wt. (g)	Final Wt. (g)	Sample Wt. (g)	Extraction Volume (mL)	Sample Type	Solvent&Lot# by/Date*	Comments/ Time of Encore transfer	Analyst
10/16/14	N1911	-17B	GRO	30.11	37.70	7.6	5.0	A	MeOH		ML
		-18B		29.93	38.76	8.8					
		-19B		30.06	39.25	9.2					
		-20B		30.02	37.50	7.5					
		-21B		30.17	37.75	7.6					
		-22B		29.92	38.02	8.1					
		-22BMS		30.10	38.92	8.8					
		-22BMSD		30.08	38.79	8.7					
		-23B		30.08	36.77	6.7					
		-24B		29.99	39.00	9.0					
		-25B		30.10	39.60	9.5					
		-26B		30.08	38.96	8.9					
		-27B		29.03	37.34	8.3					
		-28B		30.00	39.23	9.2					
10/16/14	N1911	-29B	GRO	30.02	37.72	7.7	5.0	A	MeOH		ML

RL# 4

*=Date added, if different than Rec. date

Sample Type: A. MeOH Pre-preserved; B. DI H2O/Freeze; C. NaHSO4 Pre-preserved; D. Encore; E. Unpreserved Jars

Logbook ID: 90.0189-07/14

Reviewed By: ML 10/20/14

Spectrum Analytical, Inc. RI Division: Volatile Organics Low/Medium Level Soil Extraction Log

N1911

Date	Lab ID		Analysis	Initial Wt. (g)	Final Wt. (g)	Sample Wt. (g)	Extraction Volume (mL)	Sample Type	Solvent&Lot# by/Date*	Comments/ Time of Encore transfer	Analyst
10/16/14	N1911	-30B	GRO	28.96	37.66	8.7	5.0	A	MeOH		WL
		-31B		30.02	36.44	6.4					
		-32B		29.32	38.04	8.7					
		-33B		29.07	36.78	7.7					
		-34B		29.02	35.20	6.2					
		-35B		29.31	36.31	7.0					
		-36B		29.24	36.22	7.0					
		-37B		29.38	38.57	9.2					
		-38B		30.12	37.17	7.0					
	N1911	-39B		29.19	38.37	9.2					
	N1921	-01B		29.73	38.61	8.9					
		-02B		29.87	38.18	8.3					
		-03B		30.05	37.00	7.0					
10/16/14	N1921	-04B	GRO	29.74	38.05	8.3	5.0	A	MeOH		
10/17/14	N1881	-03A	SOM	NA	NA	5.0	5.0	E	DI H2O		WL

TL#_____

*=Date added, if different than Rec. date

Sample Type: A. MeOH Pre-preserved; B. DI H2O/Freeze; C. NaHSO4 Pre-preserved; D. Encore; E. Unpreserved Jars

Logbook ID: 90.0189-07/14

Reviewed By: WL 10/20/14

Data File: \\avogadro\organics\V4.i\141023.B\V4D08070.D
Report Date: 24-Oct-2014 10:50

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\avogadro\organics\V4.i\141023.B\V4D08070.D
Lab Smp Id: N1911-34BDL Client Smp ID: 03SB0140610DL
Inj Date : 23-OCT-2014 16:00
Operator : WL SRC: LIMS Inst ID: V4.i
Smp Info : 5ML,N1911-34BDL,,79651,10
Misc Info :
Comment :
Method : \\avogadro\organics\V4.i\141023.B\v4GRO.m
Meth Date : 24-Oct-2014 10:33 V4.i Quant Type: ESTD
Cal Date : 06-OCT-2014 12:52 Cal File: V4D07835.D
Als bottle: 6
Dil Factor: 10.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula:
Amt * DF * Uf*((Vt+(Ws*M/100))*5000)/(Va*Ws*((100-M)/100))) * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	6.200	Weight of sample (g)
M	0.00000	% Moisture (not decanted)
Vt	5.000	Methanol extract volume (mL)
Va	100.000	Aliquot of methanol (uL)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (PPM)	CONCENTRATIONS FINAL (ug/Kg)
1 Gasoline Range Organics	11.224	9.105	2.119	94176019	1043.94	420000(M)
$ 2 Bromofluorobenzene	10.137	10.127	0.010	667949	19.6071	790(M)

QC Flag Legend

M - Compound response manually integrated.

$\frac{420000}{0.9226} = 455235 ug/kg$

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1911

SW846 8015D TPH, Total Petroleum Hydrocarbons (TPH) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D TPH

IV. PREPARATION

Soil Samples were prepared following procedures in laboratory test code: SW3550B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: F1
Instrument Type: GC-FID
Description: HP6890
Manufacturer: Hewlett-Packard

Model: 6890
GC Column used: 30 m X 0.32 mm ID [0.25 um thickness] Rtx-5MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: 03SS0100002 (N1911-02AMS), 03SS0100002 (N1911-02AMSD), 03SS0160002 (N1911-22AMS) and 03SS0160002 (N1911-22AMSD).

Percent recoveries were within the QC limits with the following exceptions:

03SS0160002 (N1911-22AMS), recovery is above criteria for Extractable Total Petroleum Hydrocarbon at 238% with criteria of (50-150).

03SS0160002 (N1911-22AMSD), recovery is above criteria for Extractable Total Petroleum Hydrocarbon at 324% with criteria of (50-150).

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

The following samples were analyzed at dilution:

03SS0160002 (N1911-22A) : Dilution Factor: 5
03SS0160002 (N1911-22AMS) : Dilution Factor: 5
03SS0160002 (N1911-22AMSD) : Dilution Factor: 5
03SS0140002 (N1911-31A) : Dilution Factor: 5

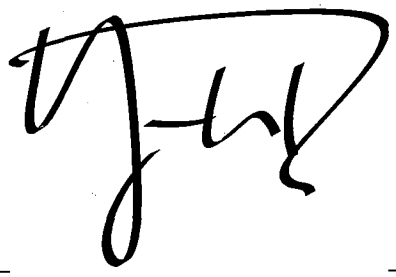
F. Samples:

No other unusual occurrences were noted during sample analysis.

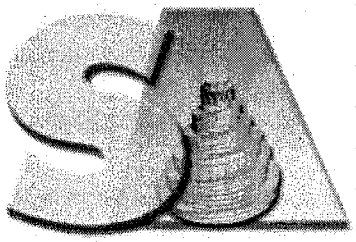
G. Manual Integration

No sample in this SDG were performed with manual integration.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____  _____

Date:_____11/7/2014_____



Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

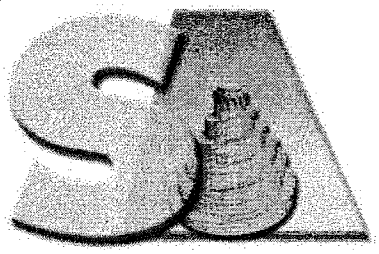
A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

CLIENT: Tetra Tech, Inc.
Work Order: N1911
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79625**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:24**	Run ID: **F1_141027B**
Client ID: **MB-79625**	Batch ID: **79625**	Units: **mg/Kg**	Analysis Date: **10/27/14 14:18**	SeqNo: **2175437**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	3.325		0.83	3.333	0	99.8	50	150	0			

Sample ID: **MB-79718**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/27/14 13:43**	Run ID: **F1_141029A**
Client ID: **MB-79718**	Batch ID: **79718**	Units: **mg/Kg**	Analysis Date: **10/29/14 10:58**	SeqNo: **2179053**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	3.262		0.83	3.333	0	97.9	50	150	0			

Sample ID: **LCS-79625**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:24**	Run ID: **F1_141027B**
Client ID: **LCS-79625**	Batch ID: **79625**	Units: **mg/Kg**	Analysis Date: **10/27/14 14:39**	SeqNo: **2175438**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	153.6	7.0 ^	7.0	166.7	0	92.2	60	140	0			
Surrogate: ortho-Terphenyl	3.126		0.83	3.333	0	93.8	50	150	0			

Sample ID: **LCS-79718**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/27/14 13:43**	Run ID: **F1_141029A**
Client ID: **LCS-79718**	Batch ID: **79718**	Units: **mg/Kg**	Analysis Date: **10/29/14 11:19**	SeqNo: **2179054**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	206.1	7.0 ^	7.0	166.7	0	124	60	140	0			
Surrogate: ortho-Terphenyl	3.978		0.83	3.333	0	119	50	150	0			

Sample ID: **LCSD-79625**	SampType: **LCSD**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:24**	Run ID: **F1_141027B**
Client ID: **LCSD-79625**	Batch ID: **79625**	Units: **mg/Kg**	Analysis Date: **10/27/14 14:59**	SeqNo: **2175439**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	129.4	7.0 ^	7.0	166.7	0	77.6	60	140	153.6	17.1	20	
Surrogate: ortho-Terphenyl	2.485		0.83	3.333	0	74.6	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1911
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **N1911-02AMS** SampType: **MS** TestCode: **TPH_S** Prep Date: **10/27/14 13:43** Run ID: **F1_141029A**
Client ID: **03SS0100002** Batch ID: **79718** Units: **mg/Kg** Analysis Date: **10/29/14 15:30** SeqNo: **2179065**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	250.1	7.3 ^	7.3	174.2	124.7	72.0	50	150	0			
Surrogate: ortho-Terphenyl	3.164		0.87	3.484	0	90.8	50	150	0			

Sample ID: **N1911-22AMS** SampType: **MS** TestCode: **TPH_S** Prep Date: **10/27/14 13:43** Run ID: **F1_141029A**
Client ID: **03SS0160002** Batch ID: **79718** Units: **mg/Kg** Analysis Date: **10/29/14 20:27** SeqNo: **2179077**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	458.0	36 ^	36	171.9	49.19	238	50	150	0			S
Surrogate: ortho-Terphenyl	2.218		4.3	3.437	0	64.5	50	150	0			

Sample ID: **N1911-02AMSD** SampType: **MSD** TestCode: **TPH_S** Prep Date: **10/27/14 13:43** Run ID: **F1_141029A**
Client ID: **03SS0100002** Batch ID: **79718** Units: **mg/Kg** Analysis Date: **10/29/14 15:51** SeqNo: **2179066**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	279.6	7.4 ^	7.4	175.9	124.7	88.0	50	150	250.1	11.2	30	
Surrogate: ortho-Terphenyl	2.812		0.88	3.519	0	79.9	50	150	0			

Sample ID: **N1911-22AMSD** SampType: **MSD** TestCode: **TPH_S** Prep Date: **10/27/14 13:43** Run ID: **F1_141029A**
Client ID: **03SS0160002** Batch ID: **79718** Units: **mg/Kg** Analysis Date: **10/29/14 20:48** SeqNo: **2179078**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	604.5	36 ^	36	171.3	49.19	324	50	150	458.0	27.6	30	S
Surrogate: ortho-Terphenyl	4.047		4.3	3.426	0	118	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
m14.10.24.0936 J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Response Factor Report FID1

Method Path : O:\F1.I\QMETHODS\
Method File : TPH0717.M
Title : TPH, ETPH, DRO, Fuel ID, ORO
Last Update : Thu Jul 17 14:13:45 2014
Response Via : Initial Calibration

Calibration Files
5 =F1J3033.D 20 =F1J3034.D 50 =F1J3035.D
80 =F1J3036.D 100 =F1J3037.D 120 =F1J3038.D

		Compound	5	20	50	80	100	120	Avg	%RSD
1)	S	1-Chlorooctadeca							0.000	-1.00
2)	S	ortho-Terphenyl	2.830	3.103	2.910	3.255	3.307	3.086	3.084 E5	5.33
3)	H	DRO C10 to C28	2.842	2.831	2.599	3.089	3.059	2.824	2.875 E5	5.59
4)	H	TPH C9 to C36	2.898	2.856	2.622	3.123	3.088	2.856	2.907 E5	5.59
5)	H	Gasoline							0.000	-1.00
6)	H	Jet Fuel							0.000	-1.00
7)	H	Motor Oil/Other							0.000	-1.00
8)	H	Number 2 Fuel							0.000	-1.00
9)	H	Number 4 Fuel							0.000	-1.00
10)	H	Number 6 Fuel							0.000	-1.00
11)	I	5a-Androstane	----------ISTD----------							
12)	S	1-Chlorooctadeca							0.000	-1.00
13)	S	ortho-Terphenyl	0.939	1.011	1.065	1.097	1.063	1.071	1.050	4.86
14)	T	C9 Nonane	0.797	0.784	0.809	0.898	0.822	0.834	0.834	4.68
15)	TD	C10 Decane	0.815	0.807	0.837	0.927	0.853	0.863	0.861	4.85
16)	TD	C12 Dodecane	0.854	0.843	0.879	0.963	0.893	0.902	0.899	4.56
17)	TD	C14 Tetradecane	0.890	0.873	0.913	0.992	0.928	0.932	0.931	4.21
18)	TD	C16 Hexadecane	0.951	0.914	0.946	1.027	0.967	0.966	0.968	3.55
19)	TD	C18 Octadecane	0.940	0.919	0.950	1.033	0.979	0.970	0.972	3.69
20)	TD	C20 Eicosane	0.971	0.945	0.978	1.066	1.015	1.002	1.002	3.77
21)	TD	C22 Docosane	0.977	0.968	0.987	1.081	1.031	1.019	1.016	3.72
22)	TD	C24 Tetracosane	0.997	0.974	0.995	1.092	1.042	1.033	1.028	3.68
23)	TD	C26 Hexacosane	1.011	0.987	1.010	1.110	1.060	1.053	1.045	3.81
24)	TD	C28 Octacosane	1.024	0.993	1.016	1.119	1.067	1.062	1.054	3.85
25)	T	C30 Triacontane	1.017	1.006	1.033	1.138	1.083	1.080	1.069	4.26
26)	T	C32 Dotriaconta	0.986	0.987	1.021	1.123	1.066	1.065	1.051	4.63
27)	T	C36 Hexatriacon	1.229	1.028	1.057	1.162	1.095	1.096	1.113	5.57
28)	H	DRO C10 to C28	0.943	0.922	0.951	1.041	0.984	0.980	0.978	3.91
29)	H	TPH C8 to C40 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989	3.86
30)	H	TPH C9 to C36 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989	3.86
31)		----------							0.000	-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File: \\Avogadro\Organics\F1.I\141027B.B\F1J3802.D
Lab Smp Id: FSTD1001V Client Smp ID: FSTD1001V
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 27 Oct 2014 13:16 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 27 14:01:14 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	308.828	E3	-0.1	100	0.00
3	H	DRO C10 to C28	287.452	284.819	E3	0.9	100	0.00
4	H	TPH C9 to C40	290.717	287.926	E3	1.0	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.076		-2.5	100	0.00
14		C9 Nonane	0.834	0.779		6.6	100	0.00
15		C10 Decane	0.861	0.803		6.7	100	0.00
16		C12 Dodecane	0.899	0.873		2.9	100	0.00
17		C14 Tetradecane	0.931	0.931		0.0	100	0.00
18		C16 Hexadecane	0.968	0.984		-1.7	100	0.00
19		C18 Octadecane	0.972	0.993		-2.2	100	0.00
20		C20 Eicosane	1.002	1.035		-3.3	100	0.00
21		C22 Docosane	1.016	1.047		-3.1	100	0.00
22		C24 Tetracosane	1.028	1.053		-2.4	100	0.00
23		C26 Hexacosane	1.045	1.098		-5.1	100	0.00
24		C28 Octacosane	1.054	1.106		-4.9	100	0.00
25		C30 Triacontane	1.069	1.124		-5.1	100	0.00
26		C32 Dotriacontane	1.051	1.099		-4.6	100	0.00
27		C36 Hexatriacontane	1.113	1.118		-0.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.992		-1.4	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.003		-1.4	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.003		-1.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141027B.B\F1J3814.D
Lab Smp Id: FSTD1001W Client Smp ID: FSTD1001W
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 27 Oct 2014 17:24 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 28 08:23:37 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	329.483 E3	-6.8	107	0.00
3	H	DRO C10 to C28	287.452	302.349 E3	-5.2	106	0.00
4	H	TPH C9 to C40	290.717	304.326 E3	-4.7	106	0.00
11	I	5a-Androstane	1.000	1.000	0.0	107	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.075	-2.4	107	0.00
14		C9 Nonane	0.834	0.769	7.8	105	0.00
15		C10 Decane	0.861	0.794	7.8	106	0.00
16		C12 Dodecane	0.899	0.872	3.0	107	0.00
17		C14 Tetradecane	0.931	0.933	-0.2	107	0.00
18		C16 Hexadecane	0.968	0.983	-1.5	107	0.00
19		C18 Octadecane	0.972	0.997	-2.6	107	0.00
20		C20 Eicosane	1.002	1.038	-3.6	107	0.00
21		C22 Docosane	1.016	1.036	-2.0	106	0.00
22		C24 Tetracosane	1.028	1.043	-1.5	106	0.00
23		C26 Hexacosane	1.045	1.084	-3.7	105	0.00
24		C28 Octacosane	1.054	1.085	-2.9	105	0.00
25		C30 Triacontane	1.069	1.101	-3.0	105	0.00
26		C32 Dotriacontane	1.051	1.074	-2.2	104	0.00
27		C36 Hexatriacontane	1.113	1.093	1.8	104	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.987	-0.9	106	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.993	-0.4	106	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.993	-0.4	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141027B.B\F1J3825.D
Lab Smp Id: FSTD1001X Client Smp ID: FSTD1001X
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 27 Oct 2014 21:14 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 28 08:27:35 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	328.465	E3	-6.5	106	0.00
3	H	DRO C10 to C28	287.452	302.201	E3	-5.1	106	0.00
4	H	TPH C9 to C40	290.717	302.119	E3	-3.9	105	0.00
11	I	5a-Androstane	1.000	1.000		0.0	106	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.081		-3.0	106	0.00
14		C9 Nonane	0.834	0.820		1.7	111	0.00
15		C10 Decane	0.861	0.851		1.2	112	0.00
16		C12 Dodecane	0.899	0.920		-2.3	112	0.00
17		C14 Tetradecane	0.931	0.963		-3.4	109	0.00
18		C16 Hexadecane	0.968	0.996		-2.9	107	0.00
19		C18 Octadecane	0.972	1.000		-2.9	107	0.00
20		C20 Eicosane	1.002	1.033		-3.1	106	0.00
21		C22 Docosane	1.016	1.035		-1.9	105	0.00
22		C24 Tetracosane	1.028	1.029		-0.1	104	0.00
23		C26 Hexacosane	1.045	1.058		-1.2	102	0.00
24		C28 Octacosane	1.054	1.059		-0.5	101	0.00
25		C30 Triacontane	1.069	1.057		1.1	100	0.00
26		C32 Dotriacontane	1.051	1.031		1.9	99	0.00
27		C36 Hexatriacontane	1.113	1.065		4.3	101	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.994		-1.6	106	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.994		-0.5	105	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.994		-0.5	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141027B.B\F1J3837.D
Lab Smp Id: FSTD1001Y Client Smp ID: FSTD1001Y
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 28 Oct 2014 1:23 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 28 09:58:06 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	326.875 E3	-6.0	106	0.00
3	H	DRO C10 to C28	287.452	299.659 E3	-4.2	105	0.00
4	H	TPH C9 to C40	290.717	300.250 E3	-3.3	104	0.00
11	I	5a-Androstane	1.000	1.000	0.0	105	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.080	-2.9	106	0.00
14		C9 Nonane	0.834	0.820	1.7	111	0.00
15		C10 Decane	0.861	0.853	0.9	112	0.00
16		C12 Dodecane	0.899	0.917	-2.0	111	0.00
17		C14 Tetradecane	0.931	0.963	-3.4	109	0.00
18		C16 Hexadecane	0.968	0.994	-2.7	107	0.00
19		C18 Octadecane	0.972	0.999	-2.8	106	0.00
20		C20 Eicosane	1.002	1.030	-2.8	105	0.00
21		C22 Docosane	1.016	1.024	-0.8	103	0.00
22		C24 Tetracosane	1.028	1.022	0.6	102	0.00
23		C26 Hexacosane	1.045	1.050	-0.5	101	0.00
24		C28 Octacosane	1.054	1.051	0.3	100	0.00
25		C30 Triacontane	1.069	1.058	1.0	99	0.00
26		C32 Dotriacontane	1.051	1.040	1.0	100	0.00
27		C36 Hexatriacontane	1.113	1.071	3.8	101	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.990	-1.2	105	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.992	-0.3	104	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.992	-0.3	104	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141028A.B\F1J3844.D
Lab Smp Id: FSTD1001Z Client Smp ID: FSTD1001Z
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 28 Oct 2014 10:21 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 28 10:38:31 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	346.347 E3	-12.3	100	0.00
3	H	DRO C10 to C28	287.452	326.965 E3	-13.7	100	0.00
4	H	TPH C9 to C40	290.717	329.401 E3	-13.3	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.071	-2.0	100	0.00
14		C9 Nonane	0.834	0.785	5.9	100	0.00
15		C10 Decane	0.861	0.819	4.9	100	0.00
16		C12 Dodecane	0.899	0.887	1.3	100	0.00
17		C14 Tetradecane	0.931	0.949	-1.9	100	0.00
18		C16 Hexadecane	0.968	0.993	-2.6	100	0.00
19		C18 Octadecane	0.972	1.021	-5.0	100	0.00
20		C20 Eicosane	1.002	1.069	-6.7	100	0.00
21		C22 Docosane	1.016	1.064	-4.7	100	0.00
22		C24 Tetracosane	1.028	1.079	-5.0	100	0.00
23		C26 Hexacosane	1.045	1.117	-6.9	100	0.00
24		C28 Octacosane	1.054	1.112	-5.5	100	0.00
25		C30 Triacontane	1.069	1.126	-5.3	100	0.00
26		C32 Dotriacontane	1.051	1.104	-5.0	100	0.00
27		C36 Hexatriacontane	1.113	1.136	-2.1	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.011	-3.4	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.019	-3.0	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.019	-3.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141028A.B\F1J3856.D
Lab Smp Id: FSTD1001B Client Smp ID: FSTD1001B
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 28 Oct 2014 14:29 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 29 08:33:14 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	338.086	E3	-9.6	98	0.00
3	H	DRO C10 to C28	287.452	314.976	E3	-9.6	96	0.00
4	H	TPH C9 to C40	290.717	316.541	E3	-8.9	96	0.00
11	I	5a-Androstane	1.000	1.000		0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.075		-2.4	98	0.00
14		C9 Nonane	0.834	0.780		6.5	97	0.00
15		C10 Decane	0.861	0.814		5.5	97	0.00
16		C12 Dodecane	0.899	0.887		1.3	97	0.00
17		C14 Tetradecane	0.931	0.946		-1.6	97	0.00
18		C16 Hexadecane	0.968	0.998		-3.1	98	0.00
19		C18 Octadecane	0.972	1.015		-4.4	97	0.00
20		C20 Eicosane	1.002	1.062		-6.0	97	0.00
21		C22 Docosane	1.016	1.049		-3.2	96	0.00
22		C24 Tetracosane	1.028	1.060		-3.1	96	0.00
23		C26 Hexacosane	1.045	1.096		-4.9	95	0.00
24		C28 Octacosane	1.054	1.090		-3.4	95	0.00
25		C30 Triacontane	1.069	1.103		-3.2	95	0.00
26		C32 Dotriacontane	1.051	1.082		-2.9	95	0.00
27		C36 Hexatriacontane	1.113	1.110		0.3	95	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.002		-2.5	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.007		-1.8	96	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.007		-1.8	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141029A.B\F1J3885.D
Lab Smp Id: FSTD1001E Client Smp ID: FSTD1001E
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 29 Oct 2014 10:16 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 29 09:38:57 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	317.747 E3	-3.0	100	0.00
3	H	DRO C10 to C28	287.452	292.133 E3	-1.6	100	0.00
4	H	TPH C9 to C40	290.717	293.400 E3	-0.9	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.073	-2.2	100	0.00
14		C9 Nonane	0.834	0.777	6.8	100	0.00
15		C10 Decane	0.861	0.805	6.5	100	0.00
16		C12 Dodecane	0.899	0.885	1.6	100	0.00
17		C14 Tetradecane	0.931	0.944	-1.4	100	0.00
18		C16 Hexadecane	0.968	0.994	-2.7	100	0.00
19		C18 Octadecane	0.972	1.004	-3.3	100	0.00
20		C20 Eicosane	1.002	1.043	-4.1	100	0.00
21		C22 Docosane	1.016	1.001	1.5	100	0.00
22		C24 Tetracosane	1.028	1.036	-0.8	100	0.00
23		C26 Hexacosane	1.045	1.079	-3.3	100	0.00
24		C28 Octacosane	1.054	1.071	-1.6	100	0.00
25		C30 Triacontane	1.069	1.085	-1.5	100	0.00
26		C32 Dotriacontane	1.051	1.065	-1.3	100	0.00
27		C36 Hexatriacontane	1.113	1.077	3.2	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.986	-0.8	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.990	-0.1	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.990	-0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141029A.B\F1J3909.D
Lab Smp Id: FSTD1001G Client Smp ID: FSTD1001G
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 29 Oct 2014 18:41 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 07:54:14 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	318.657	E3	-3.3	100	0.00
3	H	DRO C10 to C28	287.452	292.263	E3	-1.7	100	0.00
4	H	TPH C9 to C40	290.717	292.048	E3	-0.5	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.073		-2.2	100	0.00
14		C9 Nonane	0.834	0.772		7.4	100	0.00
15		C10 Decane	0.861	0.805		6.5	100	0.00
16		C12 Dodecane	0.899	0.885		1.6	100	0.00
17		C14 Tetradecane	0.931	0.944		-1.4	100	0.00
18		C16 Hexadecane	0.968	0.992		-2.5	100	0.00
19		C18 Octadecane	0.972	1.002		-3.1	100	0.00
20		C20 Eicosane	1.002	1.041		-3.9	100	0.00
21		C22 Docosane	1.016	1.031		-1.5	103	0.00
22		C24 Tetracosane	1.028	1.028		0.0	99	0.00
23		C26 Hexacosane	1.045	1.065		-1.9	99	0.00
24		C28 Octacosane	1.054	1.052		0.2	98	0.00
25		C30 Triacontane	1.069	1.062		0.7	98	0.00
26		C32 Dotriacontane	1.051	1.036		1.4	97	0.00
27		C36 Hexatriacontane	1.113	1.058		4.9	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.984		-0.6	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.984		0.5	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.984		0.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141029A.B\F1J3921.D
Lab Smp Id: FSTD1001H Client Smp ID: FSTD1001H
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 29 Oct 2014 22:54 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 08:49:17 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	344.700 E3	-11.8	108	0.00
3	H	DRO C10 to C28	287.452	318.517 E3	-10.8	109	0.00
4	H	TPH C9 to C40	290.717	319.712 E3	-10.0	109	0.00
11	I	5a-Androstane	1.000	1.000	0.0	107	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.084	-3.2	108	0.00
14		C9 Nonane	0.834	0.823	1.3	114	0.00
15		C10 Decane	0.861	0.862	-0.1	115	0.00
16		C12 Dodecane	0.899	0.928	-3.2	113	0.00
17		C14 Tetradecane	0.931	0.969	-4.1	110	0.00
18		C16 Hexadecane	0.968	1.007	-4.0	109	0.00
19		C18 Octadecane	0.972	1.008	-3.7	108	0.00
20		C20 Eicosane	1.002	1.044	-4.2	107	0.00
21		C22 Docosane	1.016	1.030	-1.4	110	0.00
22		C24 Tetracosane	1.028	1.035	-0.7	107	0.00
23		C26 Hexacosane	1.045	1.068	-2.2	106	0.00
24		C28 Octacosane	1.054	1.068	-1.3	107	0.00
25		C30 Triacontane	1.069	1.084	-1.4	107	0.00
26		C32 Dotriacontane	1.051	1.060	-0.9	107	0.00
27		C36 Hexatriacontane	1.113	1.092	1.9	109	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.002	-2.5	109	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.005	-1.6	109	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.005	-1.6	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141030A.B\F1J3943.D
Lab Smp Id: FSTD1001J Client Smp ID: FSTD1001J
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 30 Oct 2014 12:11 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 11:31:33 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.219 E3	1.0	97	0.00
3	H	DRO C10 to C28	287.452	281.571 E3	2.0	96	0.00
4	H	TPH C9 to C40	290.717	284.679 E3	2.1	97	0.00
11	I	5a-Androstane	1.000	1.000	0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.069	-1.8	97	0.00
14		C9 Nonane	0.834	0.795	4.7	96	0.00
15		C10 Decane	0.861	0.822	4.5	95	0.00
16		C12 Dodecane	0.899	0.895	0.4	96	0.00
17		C14 Tetradecane	0.931	0.942	-1.2	96	0.00
18		C16 Hexadecane	0.968	0.986	-1.9	96	0.00
19		C18 Octadecane	0.972	0.992	-2.1	97	0.00
20		C20 Eicosane	1.002	1.029	-2.7	97	0.00
21		C22 Docosane	1.016	1.029	-1.3	97	0.00
22		C24 Tetracosane	1.028	1.027	0.1	97	0.00
23		C26 Hexacosane	1.045	1.073	-2.7	97	0.00
24		C28 Octacosane	1.054	1.072	-1.7	97	0.00
25		C30 Triacontane	1.069	1.095	-2.4	97	0.00
26		C32 Dotriacontane	1.051	1.079	-2.7	97	0.00
27		C36 Hexatriacontane	1.113	1.130	-1.5	96	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.987	-0.9	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.997	-0.8	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.997	-0.8	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141030A.B\F1J3955.D
Lab Smp Id: FSTD1001K Client Smp ID: FSTD1001K
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 30 Oct 2014 16:23 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 08:24:11 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.745 E3	0.9	98	0.00
3	H	DRO C10 to C28	287.452	281.400 E3	2.1	96	0.00
4	H	TPH C9 to C40	290.717	284.747 E3	2.1	97	0.00
11	I	5a-Androstane	1.000	1.000	0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074	-2.3	98	0.00
14		C9 Nonane	0.834	0.827	0.8	100	0.00
15		C10 Decane	0.861	0.851	1.2	98	0.00
16		C12 Dodecane	0.899	0.921	-2.4	98	0.00
17		C14 Tetradecane	0.931	0.958	-2.9	97	0.00
18		C16 Hexadecane	0.968	0.988	-2.1	96	0.00
19		C18 Octadecane	0.972	0.987	-1.5	96	0.00
20		C20 Eicosane	1.002	1.021	-1.9	96	0.00
21		C22 Docosane	1.016	1.011	0.5	95	0.00
22		C24 Tetracosane	1.028	1.021	0.7	96	0.00
23		C26 Hexacosane	1.045	1.061	-1.5	96	0.00
24		C28 Octacosane	1.054	1.066	-1.1	96	0.00
25		C30 Triacontane	1.069	1.085	-1.5	96	0.00
26		C32 Dotriacontane	1.051	1.075	-2.3	97	0.00
27		C36 Hexatriacontane	1.113	1.131	-1.6	96	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.988	-1.0	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.000	-1.1	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.000	-1.1	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/22/2014 07:24**
Prep End Date: **10/23/2014 11:24** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79625** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DK494	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: TL1	Start Time: N/A End Time: N/A	Cycles/Hour 0	Sonicator Tuned?Yes BalanceID: TL1	Bath Temp1 (C): N/A Corr Fac: N/A	Therm ID1: N/A Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79625	BatchQC		30	1	OFW141016A	1			DMP	TM			10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
LCS-79625	BatchQC		30	1	OFW141016A	1	OFW141007A	1	DMP	TM			10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
LCSD-79625	BatchQC		30	1	OFW141016A	1	OFW141007A	1	DMP	TM			10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1
N1911-04A	03SB0100406	S	30.5	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1911-05A	03SB0100610	S	30.4	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1911-08A	03SB009A0406	S	30.4	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1911-09A	03SB009A0610	S	30	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-12A	03SS007A0406	S	30.1	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-13A	03SS007A0610	S	30.3	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1911-16A	03SB0110406	S	30.2	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1911-17A	03SB0110610	S	30.5	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1911-20A	03SB0120406	S	30.4	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1911-21A	03SB0120610	S	30.4	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1911-24A	03SB0160406	S	30.4	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD

Logbook ID: 50.0147-10/14

AC 10/23/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/22/2014 07:24**
Prep End Date: **10/23/2014 11:24** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79625** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DK494	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: TL1	Start Time: N/A End Time: N/A	Cycles/Hour 0	Sonicator Tuned?Yes BalanceID: TL1	Bath Temp1 (C): N/A Corr Fac: N/A	Therm ID1: N/A Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
N1911-25A	03SB0160610	S	30.1	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-29A	03SB0130406	S	30.2	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-30A	03SB0130610	S	30.5	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1911-33A	03SB0140406	S	30	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1911-34A	03SB0140610	S	30.5	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1911-37A	03SB0150406	S	30.3	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1911-38A	03SB0150610	S	30.2	1	OFW141016A	1			DMP	TM	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD

nalisa M Caruso 10/23/2014 Devin M Pierel 10/23/2014
nalyst Reviewed Date Manager Reviewed Date

omments:

\ = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-10/14

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AC 10/23/2014

pectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

rep Start Date: **10/27/2014 13:43**
Prep End Date: **10/28/2014 10:00** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79718** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DL501 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | BalanceID: TL1 | Bath Temp1 (C): N/A | Corr Fac: N/A | Therm ID1: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
B-79718	BatchQC		30	1	OFW141016A	1			TM	AMC			10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
CS-79718	BatchQC		30	1	OFW141016A	1	OFW141007A	1	TM	AMC			10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
1911-02A	03SS0100002	S	30.5	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
1911-02AMS	03SS0100002	S	30.4	1	OFW141016A	1	OFW141007A	1	TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
1911-02AMSD	03SS0100002	S	30.1	1	OFW141016A	1	OFW141007A	1	TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
1911-03A	03SB0100204	S	30	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
1911-06A	03SS009A0002	S	30	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
1911-07A	03SB009A0204	S	30.4	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
1911-10A	03SS007A0002	S	30.2	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
1911-11A	03SS007A0204	S	30.1	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
1911-14A	03SS0110002	S	30.2	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
1911-15A	03SB0110204	S	30.1	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
1911-18A	03SS0120002	S	30.5	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
1911-19A	03SB0120204	S	30.3	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD

Logbook ID: 50.0147-10/14

AC 10/28/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

N1911

Prep Start Date: **10/27/2014 13:43**
Prep End Date: **10/28/2014 10:00**
Prep Batch ID: **79718**
Prep Code: **TPH_S_PR**
Technician: **Devin M Pierel**
Prep Type: **SONC/SW3550B**
Prep Factor Units: **mL / g**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DL501 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | BalanceID: TL1 | Bath Temp1 (C): N/A | Corr Fac: N/A | Therm ID1: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
N1911-22A	03SS0160002	S	30.2	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-22AMS	03SS0160002	S	30.4	1	OFW141016A	1	OFW141007A	1	TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-22AMSD	03SS0160002	S	30.5	1	OFW141016A	1	OFW141007A	1	TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1911-23A	03SB0160204	S	30.1	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1911-26A	FD03-101314	S	30.4	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1911-27A	03SS0130002	S	30.3	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1911-28A	03SB0130204	S	30.2	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1911-31A	03SS0140002	S	30.2	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1911-32A	03SB0140204	S	30.4	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-35A	03SS0150002	S	30.1	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1911-36A	03SB0150204	S	30.1	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1911-39A	03SS0170002	S	30.5	1	OFW141016A	1			TM	AMC	10/31/14	01	10/28/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD

Analist M Caruso 10/28/2014
Analyst Reviewed Date

Devin M Pierel 10/28/2014
Manager Reviewed Date

Logbook ID: 50.0147-10/14

AC 10/28/2014

Data File: \\Avogadro\Organics\F1.I\141029A.B\F1J3917.D
Lab Smp Id: N1911-31A BN: 79718 Client Smp ID: 03SS0140002
Misc : | TPH 5X DIL Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 29 Oct 2014 21:30 Operator: TM
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Nov 04 08:55:45 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Compound	R.T.	Response	Conc Units
Internal Standards			
11) I 5a-Androstane	6.77	15463131	40.000 ug/mL
System Monitoring Compounds			
2) S ortho-Terphenyl	6.30	5352673	17.355 ug/mL
Spiked Amount 100.000		Recovery =	17.36%
Target Compounds			
4) H TPH C9 to C40	1.30	1704960109	5864.674 ug/mL
Integration Range:		1.30 to 12.70 minutes	
Raw Range Area:		1922444681	
Corrected Range Area (IS,SS):		1901628877	
Instrument Blank Area (F1J3910):		196668768	

Corrected Range Area = Raw Range Area - Internal and Surrogate Area
Reported Area = Corrected Range Area - Instrument Blank Area

(f)=RT Delta > 1/2 Window (m)=manual int.

$$\frac{1704960109 \times 5}{290717 \times 30.2 \times 0.9397} = 1033 \text{ mg/Kg}$$

TPH = 1000 mg/Kg

TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **S. ANDERSON** **DATE:** **DECEMBER 17, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – TPH (C9-C40) and GRO**
FRMR NCBC DAVISVILLE, CTO WE01
SDG N1914

SAMPLES:

38/Soil/TPH (C9-C40)/GRO

03SB0170204	03SB0170406	03SB0170610
03SB0180406	03SB0180610	03SB0190204
03SB0190406	03SB0190610	03SB0200204
03SB0200406	03SB0200610	03SB0210204
03SB0210406	03SB0210610	03SB0220204
03SB0220406	03SB0220610	03SB0230204
03SB0230406	03SB0230610	03SB0240204
03SB0240406	03SB0240610	03SB0250204
03SB0250406	03SB0250610	03SS0180002
03SS0180204	03SS0190002	03SS0200002
03SS0210002	03SS0220002	03SS0230002
03SS0240002	03SS0250002	03SS0260002
FD04-101314	FD05-101414	

1/Aqueous/TPH (C9-C40)/GRO

RB02-101414

1/Aqueous/GRO

TB03-101414

OVERVIEW

The sample set for FRMR NCBC Davisville, CTO WE01, SDG N1914 consisted of thirty-eight (38) soil samples, one (1) rinse blank, and one (1) trip blank. The samples were analyzed for total petroleum hydrocarbons (TPH) (C9-C40) and gasoline range organics (GRO) as outlined above. Two (2) field duplicate sample pairs were included in this sample delivery group (SDG): 03SS0220002 / FD04-101314 and 03SS0230002 / FD05-101414.

The samples were collected by Tetra Tech on October 13 and 14, 2014 and analyzed by Spectrum Analytical, Inc. for all fractions. All analyses were conducted in accordance with EPA SW-846 Method 8015D analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
• Holding Times
• Blank Results
* • Initial and Continuing Calibration

* • Surrogate Spike Recoveries
* • Internal Standards
* • Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
* • Matrix Spike / Matrix Spike Duplicate (MS/MSD) Results
* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

HOLD TIME

The TPH (C9-C40) fourteen day extraction hold time was exceeded by one day for samples 03SS0180002, 03SS0190002, 03SS0200002, and 03SS0220002. The samples were initially extracted within the extraction hold time but had surrogate recoveries less than the quality control limit. The re-extracted results were used for validation because the surrogate recoveries were acceptable and the re-extracted results had higher TPH (C9-C40) concentrations. The detected TPH (C9-C40) results for samples 03SS0180002, 03SS0190002, 03SS0200002, and 03SS0220002 were qualified as estimated (J).

ADDITIONAL COMMENTS

The rinse blank (RB02-101414) had a TPH (C9-C40) detection at 0.21 mg/L. No action was taken on this basis.

Samples 03SS0180002 and 03SS0220002 were analyzed at five-fold dilutions due to possible matrix interference.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: The TPH (C9-C40) extraction hold time was exceeded for four samples.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	03SB0170204						03SB0170406					
SDG: N1914	LAB_ID	N1914-01A						N1914-02A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.3			92.3			94.9			94.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					620	U					590	U	
TPH (C09-C40)		7.7						1.8	U				

PROJ_NO: 01813	NSAMPLE	03SB0170610						03SB0180406					
SDG: N1914	LAB_ID	N1914-03A						N1914-11A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.0			96.0			96.5			96.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					690	U					700	U	
TPH (C09-C40)		200						62					

PROJ_NO: 01813	NSAMPLE	03SB0180610						03SB0190204					
SDG: N1914	LAB_ID	N1914-12A						N1914-14A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.4			92.4			96.6			96.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					730	U	
TPH (C09-C40)		20						7.3					

PROJ_NO: 01813	NSAMPLE	03SB0190406						03SB0190610					
SDG: N1914	LAB_ID	N1914-15A						N1914-16A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.1			95.1			94.1			94.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					700	U					830	U	
TPH (C09-C40)		20						38					

PROJ_NO: 01813	NSAMPLE	03SB0200204						03SB0200406					
SDG: N1914	LAB_ID	N1914-18A						N1914-19A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.6			96.6			95.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					750	U					600	U	
TPH (C09-C40)		1.7	U					1.8	U				

PROJ_NO: 01813	NSAMPLE	03SB0200610						03SB0210204					
SDG: N1914	LAB_ID	N1914-20A						N1914-22A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.3			95.3			91.6			91.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					660	U					730	U	
TPH (C09-C40)		9.8						1.9	U				

PROJ_NO: 01813	NSAMPLE	03SB0210406						03SB0210610					
SDG: N1914	LAB_ID	N1914-23A						N1914-24A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.2			96.2			92.9			92.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					580	U					730	U	
TPH (C09-C40)		7.3						1.8	U				

PROJ_NO: 01813	NSAMPLE	03SB0220204						03SB0220406					
SDG: N1914	LAB_ID	N1914-06A						N1914-07A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.1			93.1			96.7			96.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					770	U					690	U	
TPH (C09-C40)		7.7						49					

PROJ_NO: 01813	NSAMPLE	03SB0220610						03SB0230204					
SDG: N1914	LAB_ID	N1914-08A						N1914-28A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.8			92.8			88.5			88.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					620	U					1500	U	
TPH (C09-C40)		110						9.7					

PROJ_NO: 01813	NSAMPLE	03SB0230406						03SB0230610					
SDG: N1914	LAB_ID	N1914-29A						N1914-30A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.7			92.7			89.6			89.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					790	U	
TPH (C09-C40)		12						11					

PROJ_NO: 01813	NSAMPLE	03SB0240204						03SB0240406					
SDG: N1914	LAB_ID	N1914-33A						N1914-34A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.5			96.5			89.3			89.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					800	U					670	U	
TPH (C09-C40)		1.8	U					13					

PROJ_NO: 01813	NSAMPLE	03SB0240610						03SB0250204					
SDG: N1914	LAB_ID	N1914-35A						N1914-37A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	90.5			90.5			95.4			95.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					720	U					920	U	
TPH (C09-C40)		40						8					

PROJ_NO: 01813	NSAMPLE	03SB0250406						03SB0250610					
SDG: N1914	LAB_ID	N1914-38A						N1914-39A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	91.8			91.8			92.4			92.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					690	U					690	U	
TPH (C09-C40)		11						32					

PROJ_NO: 01813	NSAMPLE	03SS0180002			03SS0180002RE			03SS0180204					
SDG: N1914	LAB_ID	N1914-09B			N1914-09ARE			N1914-10A					
FRACTION: PET	SAMP_DATE	10/13/2014			10/14/2014			10/13/2014					
MEDIA: SOIL	QC_TYPE	NM			NM			NM					
	UNITS	UG/KG			MG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	91.8						95.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		740	U								610	U	
TPH (C09-C40)					210	J	H	1.8	U				

PROJ_NO: 01813	NSAMPLE	03SS0190002			03SS0190002RE			03SS0200002			03SS0200002RE		
SDG: N1914	LAB_ID	N1914-13B			N1914-13ARE			N1914-17B			N1914-17ARE		
FRACTION: PET	SAMP_DATE	10/13/2014			10/14/2014			10/13/2014			10/14/2014		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			MG/KG			UG/KG			MG/KG		
	PCT_SOLIDS	95.4						94.6					
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		780	U					810	U				
TPH (C09-C40)					100	J	H				160	J	H

PROJ_NO: 01813	NSAMPLE	03SS0210002						03SS0220002			03SS0220002RE		
SDG: N1914	LAB_ID	N1914-21A						N1914-05B			N1914-05ARE		
FRACTION: PET	SAMP_DATE	10/13/2014						10/13/2014			10/14/2014		
MEDIA: SOIL	QC_TYPE	NM						NM			NM		
	UNITS	MG/KG			UG/KG			UG/KG			MG/KG		
	PCT_SOLIDS	96.8			96.8			97.0					
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					660	U		700	U				
TPH (C09-C40)		300									1100	J	H

PROJ_NO: 01813	NSAMPLE	03SS0230002						03SS0240002					
SDG: N1914	LAB_ID	N1914-27A						N1914-32A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	88.9			88.9			90.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					780	U					750	U	
TPH (C09-C40)		9.5						170					

PROJ_NO: 01813	NSAMPLE	03SS0250002						03SS0260002					
SDG: N1914	LAB_ID	N1914-36A						N1914-40A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.9			93.9			95.7			95.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					730	U	
TPH (C09-C40)		85						59					

PROJ_NO: 01813	NSAMPLE	FD04-101314						FD05-101414					
SDG: N1914	LAB_ID	N1914-04A						N1914-26A					
FRACTION: PET	SAMP_DATE	10/13/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.6			96.6			90.0			90.0		
	DUP_OF	03SS0220002			03SS0220002			03SS0230002			03SS0230002		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					670	U					790	U	
TPH (C09-C40)		740						1.9	U				

PROJ_NO: 01813	NSAMPLE	RB02-101414						TB03-101414		
SDG: N1914	LAB_ID	N1914-31A						N1914-25B		
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014		
MEDIA: WATER	QC_TYPE	NM						NM		
	UNITS	MG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U		1000	U	
TPH (C09-C40)		0.21								

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0170204
Lab ID: N1914-01
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/17/2014 14:16	79548
Surrogate: Bromofluorobenzene	109			79-118	%REC	1	10/17/2014 14:16	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0170406
Lab ID: N1914-02

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/23/2014 11:20	79651
Surrogate: Bromofluorobenzene	107			79-118	%REC	1	10/23/2014 11:20	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0170610
Lab ID: N1914-03
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							**GRO_S**	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/23/2014 11:41	79651
Surrogate: Bromofluorobenzene	100			79-118	%REC	1	10/23/2014 11:41	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0180406
Lab ID: N1914-11
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/23/2014 13:01	79651
Surrogate: Bromofluorobenzene	93.4			79-118	%REC	1	10/23/2014 13:01	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0180610
Lab ID: N1914-12
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/23/2014 13:25	79651
Surrogate: Bromofluorobenzene	94.4			79-118	%REC	1	10/23/2014 13:25	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0190204
Lab ID: N1914-14
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/17/2014 16:34	79548
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/17/2014 16:34	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0190406
Lab ID: N1914-15
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/23/2014 13:49	79651
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/23/2014 13:49	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0190610
Lab ID: N1914-16
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2100 ^	2100	ug/Kg	1	10/23/2014 14:11	79651
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/23/2014 14:11	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0200204
Lab ID: N1914-18
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/23/2014 14:55	79651
Surrogate: Bromofluorobenzene	89.5			79-118	%REC	1	10/23/2014 14:55	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0200406
Lab ID: N1914-19
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/24/2014 9:43	79686
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/24/2014 9:43	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0200610
Lab ID: N1914-20
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/24/2014 10:04	79686
Surrogate: Bromofluorobenzene	105			79-118	%REC	1	10/24/2014 10:04	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0210204
Lab ID: N1914-22
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/24/2014 10:51	79686
Surrogate: Bromofluorobenzene	96.7			79-118	%REC	1	10/24/2014 10:51	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0210406
Lab ID: N1914-23
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1400 ^	1400	ug/Kg	1	10/24/2014 11:13	79686
Surrogate: Bromofluorobenzene	99.1			79-118	%REC	1	10/24/2014 11:13	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0210610
Lab ID: N1914-24
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 17:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/24/2014 11:34	79686
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/24/2014 11:34	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0220204
Lab ID: N1914-06
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/20/2014 11:07	79586
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/20/2014 11:07	79586

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0220406
Lab ID: N1914-07
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/23/2014 12:04	79651
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/23/2014 12:04	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0220610
Lab ID: N1914-08
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/23/2014 12:28	79651
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/23/2014 12:28	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0230204
Lab ID: N1914-28
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		3700 ^	3700	ug/Kg	1	10/24/2014 13:08	79686
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/24/2014 13:08	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0230406
Lab ID: N1914-29
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/24/2014 13:31	79686
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/24/2014 13:31	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0230610
Lab ID: N1914-30
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/24/2014 13:54	79686
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/24/2014 13:54	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0240204
Lab ID: N1914-33
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/24/2014 14:42	79686
Surrogate: Bromofluorobenzene	97.6			79-118	%REC	1	10/24/2014 14:42	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0240406
Lab ID: N1914-34
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/24/2014 15:05	79686
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/24/2014 15:05	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0240610
Lab ID: N1914-35
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/24/2014 15:25	79686
Surrogate: Bromofluorobenzene	92.8			79-118	%REC	1	10/24/2014 15:25	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0250204
Lab ID: N1914-37
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2300 ^	2300	ug/Kg	1	10/24/2014 16:12	79686
Surrogate: Bromofluorobenzene	98.3			79-118	%REC	1	10/24/2014 16:12	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0250406
Lab ID: N1914-38
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/24/2014 16:38	79686
Surrogate: Bromofluorobenzene	97.4			79-118	%REC	1	10/24/2014 16:38	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0250610
Lab ID: N1914-39
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/24/2014 17:40	79686
Surrogate: Bromofluorobenzene	107			79-118	%REC	1	10/24/2014 17:40	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0180002
Lab ID: N1914-09
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/17/2014 15:23	79548
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/17/2014 15:23	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0180204
Lab ID: N1914-10

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/17/2014 15:45	79548
Surrogate: Bromofluorobenzene	99.1			79-118	%REC	1	10/17/2014 15:45	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0190002
Lab ID: N1914-13
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/17/2014 16:09	79548
Surrogate: Bromofluorobenzene	111			79-118	%REC	1	10/17/2014 16:09	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0200002
Lab ID: N1914-17
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/23/2014 14:33	79651
Surrogate: Bromofluorobenzene	95.6			79-118	%REC	1	10/23/2014 14:33	79651

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0210002
Lab ID: N1914-21
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/24/2014 10:26	79686
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/24/2014 10:26	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0220002
Lab ID: N1914-05
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/17/2014 15:00	79548
Surrogate: Bromofluorobenzene	94.1			79-118	%REC	1	10/17/2014 15:00	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0230002
Lab ID: N1914-27
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/24/2014 12:45	79686
Surrogate: Bromofluorobenzene	90.9			79-118	%REC	1	10/24/2014 12:45	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0240002
Lab ID: N1914-32
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/24/2014 14:21	79686
Surrogate: Bromofluorobenzene	95.5			79-118	%REC	1	10/24/2014 14:21	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0250002
Lab ID: N1914-36
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/24/2014 15:50	79686
Surrogate: Bromofluorobenzene	93.8			79-118	%REC	1	10/24/2014 15:50	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0260002
Lab ID: N1914-40
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/24/2014 18:03	79686
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/24/2014 18:03	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD04-101314
Lab ID: N1914-04
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/17/2014 14:38	79548
Surrogate: Bromofluorobenzene	94.3			79-118	%REC	1	10/17/2014 14:38	79548

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD05-101414
Lab ID: N1914-26
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/24/2014 12:18	79686
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/24/2014 12:18	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB02-101414
Lab ID: N1914-31
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_W	
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/21/2014 11:17	79616
Surrogate: Bromofluorobenzene	93.8			87-112	%REC	1	10/21/2014 11:17	79616

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: TB03-101414
Lab ID: N1914-25
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2500 ^	2500	ug/Kg	1	10/24/2014 11:57	79686
Surrogate: Bromofluorobenzene	94.2			79-118	%REC	1	10/24/2014 11:57	79686

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0170204
Lab ID: N1914-01
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	7.7		7.5 ^	7.5	mg/Kg	1	10/20/2014 13:04	79513
Surrogate: ortho-Terphenyl	62.1			50-150	%REC	1	10/20/2014 13:04	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0170406
Lab ID: N1914-02

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.3 ^	7.3	mg/Kg	1	10/28/2014 12:26	79626
Surrogate: ortho-Terphenyl	62.7			50-150	%REC	1	10/28/2014 12:26	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

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Client: Tetra Tech, Inc.
Client Sample ID: 03SB0170610
Lab ID: N1914-03

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	200		7.2 ^	7.2	mg/Kg	1	10/28/2014 19:18	79626
Surrogate: ortho-Terphenyl	88.7			50-150	%REC	1	10/28/2014 19:18	79626

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0180406 **Project:** CED Area, WE01-Davisville
Lab ID: N1914-11 **Collection Date:** 10/13/14 15:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					TPH_S			
Extractable Total Petroleum Hydrocarbon	62		7.3 ^	7.3	mg/Kg	1	10/28/2014 19:38	79626
Surrogate: ortho-Terphenyl	87.3			50-150	%REC	1	10/28/2014 19:38	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0180610
Lab ID: N1914-12
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	20		7.5 ^	7.5	mg/Kg	1	10/28/2014 15:52	79626
Surrogate: ortho-Terphenyl	90.9			50-150	%REC	1	10/28/2014 15:52	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0190204
Lab ID: N1914-14
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	7.3		7.2 ^	7.2	mg/Kg	1	10/20/2014 14:49	79513
Surrogate: ortho-Terphenyl	56.4			50-150	%REC	1	10/20/2014 14:49	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0190406
Lab ID: N1914-15
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	20		7.3 ^	7.3	mg/Kg	1	10/28/2014 16:13	79626
Surrogate: ortho-Terphenyl	93.4			50-150	%REC	1	10/28/2014 16:13	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

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Client: Tetra Tech, Inc.
Client Sample ID: 03SB0190610
Lab ID: N1914-16
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	38		7.4 ^	7.4	mg/Kg	1	10/28/2014 19:59	79626
Surrogate: ortho-Terphenyl	65.7			50-150	%REC	1	10/28/2014 19:59	79626

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0200204
Lab ID: N1914-18
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					TPH_S			
Extractable Total Petroleum Hydrocarbon	ND		7.2 ^	7.2	mg/Kg	1	10/20/2014 15:10	79513
Surrogate: ortho-Terphenyl	57.5			50-150	%REC	1	10/20/2014 15:10	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0200406
Lab ID: N1914-19
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.3 ^	7.3	mg/Kg	1	10/28/2014 12:47	79626
Surrogate: ortho-Terphenyl	62.4			50-150	%REC	1	10/28/2014 12:47	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0200610 **Project:** CED Area, WE01-Davisville
Lab ID: N1914-20 **Collection Date:** 10/13/14 16:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	9.8		7.3 ^	7.3	mg/Kg	1	10/28/2014 13:08	79626
Surrogate: ortho-Terphenyl	74.3			50-150	%REC	1	10/28/2014 13:08	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0210204
Lab ID: N1914-22
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.6 ^	7.6	mg/Kg	1	10/20/2014 20:42	79513
Surrogate: ortho-Terphenyl	59.3			50-150	%REC	1	10/20/2014 20:42	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0210406
Lab ID: N1914-23

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	7.3		7.2 ^	7.2	mg/Kg	1	10/28/2014 13:28	79626
Surrogate: ortho-Terphenyl	71.9			50-150	%REC	1	10/28/2014 13:28	79626

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

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Client: Tetra Tech, Inc.
Client Sample ID: 03SB0210610
Lab ID: N1914-24
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 17:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.5 ^	7.5	mg/Kg	1	10/28/2014 13:49	79626
Surrogate: ortho-Terphenyl	70.6			50-150	%REC	1	10/28/2014 13:49	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0220204
Lab ID: N1914-06
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	7.7		7.4 ^	7.4	mg/Kg	1	10/20/2014 13:25	79513
Surrogate: ortho-Terphenyl	51.7			50-150	%REC	1	10/20/2014 13:25	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0220406
Lab ID: N1914-07
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	49		7.2 ^	7.2	mg/Kg	1	10/28/2014 15:11	79626
Surrogate: ortho-Terphenyl	61.3			50-150	%REC	1	10/28/2014 15:11	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0220610
Lab ID: N1914-08
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	110		7.4 ^	7.4	mg/Kg	1	10/29/2014 16:54	79626
Surrogate: ortho-Terphenyl	68.7			50-150	%REC	1	10/29/2014 16:54	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0230204
Lab ID: N1914-28
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	9.7		7.9 ^	7.9	mg/Kg	1	10/20/2014 22:24	79553
Surrogate: ortho-Terphenyl	89.0			50-150	%REC	1	10/20/2014 22:24	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0230406
Lab ID: N1914-29
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	12		7.5 ^	7.5	mg/Kg	1	10/28/2014 17:15	79626
Surrogate: ortho-Terphenyl	52.2			50-150	%REC	1	10/28/2014 17:15	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0230610 **Project:** CED Area, WE01-Davisville
Lab ID: N1914-30 **Collection Date:** 10/14/14 8:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	11		7.8 ^	7.8	mg/Kg	1	10/28/2014 17:35	79626
Surrogate: ortho-Terphenyl	74.6			50-150	%REC	1	10/28/2014 17:35	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0240204
Lab ID: N1914-33
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.3 ^	7.3	mg/Kg	1	10/20/2014 23:26	79553
Surrogate: ortho-Terphenyl	67.0			50-150	%REC	1	10/20/2014 23:26	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0240406
Lab ID: N1914-34
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	13		7.8 ^	7.8	mg/Kg	1	10/28/2014 16:34	79626
Surrogate: ortho-Terphenyl	70.0			50-150	%REC	1	10/28/2014 16:34	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0240610
Lab ID: N1914-35
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	40		7.7 ^	7.7	mg/Kg	1	10/28/2014 20:19	79626
Surrogate: ortho-Terphenyl	96.1			50-150	%REC	1	10/28/2014 20:19	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/07/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0250204
Lab ID: N1914-37
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.0		7.3 ^	7.3	mg/Kg	1	10/20/2014 23:46	79553
Surrogate: ortho-Terphenyl	84.4			50-150	%REC	1	10/20/2014 23:46	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0250406
Lab ID: N1914-38

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	11		7.6 ^	7.6	mg/Kg	1	10/28/2014 16:54	79626
Surrogate: ortho-Terphenyl	85.2			50-150	%REC	1	10/28/2014 16:54	79626

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0250610
Lab ID: N1914-39
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	32		7.6 ^	7.6	mg/Kg	1	10/28/2014 20:39	79626
Surrogate: ortho-Terphenyl	59.2			50-150	%REC	1	10/28/2014 20:39	79626

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0180002
Lab ID: N1914-09

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	120		7.6 ^	7.6	mg/Kg	1	10/21/2014 2:29	79513
Extractable Total Petroleum Hydrocarbon	210		38 ^	38	mg/Kg	5	10/30/2014 14:38	79725
Surrogate: ortho-Terphenyl	29.5	S		50-150	%REC	1	10/21/2014 2:29	79513
Surrogate: ortho-Terphenyl	85.4			50-150	%REC	5	10/30/2014 14:38	79725

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0180204 **Project:** CED Area, WE01-Davisville
Lab ID: N1914-10 **Collection Date:** 10/13/14 15:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	ND		7.2 ^	7.2	mg/Kg	1	10/20/2014 14:28	79513
Surrogate: ortho-Terphenyl	55.0			50-150	%REC	1	10/20/2014 14:28	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0190002
Lab ID: N1914-13

Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 15:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	89		7.2 ^	7.2	mg/Kg	1	10/21/2014 2:50	79513
Extractable Total Petroleum Hydrocarbon	100		7.2 ^	7.2	mg/Kg	1	10/30/2014 14:59	79725
Surrogate: ortho-Terphenyl	43.4	S		50-150	%REC	1	10/21/2014 2:50	79513
Surrogate: ortho-Terphenyl	89.2			50-150	%REC	1	10/30/2014 14:59	79725

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0200002 **Project:** CED Area, WE01-Davisville
Lab ID: N1914-17 **Collection Date:** 10/13/14 16:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	91		7.3 ^	7.3	mg/Kg	1	10/21/2014 3:10	79513
Extractable Total Petroleum Hydrocarbon	160		7.4 ^	7.4	mg/Kg	1	10/30/2014 15:20	79725
Surrogate: ortho-Terphenyl	31.6	S		50-150	%REC	1	10/21/2014 3:10	79513
Surrogate: ortho-Terphenyl	67.3			50-150	%REC	1	10/30/2014 15:20	79725

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0210002
Lab ID: N1914-21
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 16:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	300		36 ^	36	mg/Kg	1	10/21/2014 3:31	79513
Surrogate: ortho-Terphenyl	69.5			50-150	%REC	1	10/21/2014 3:31	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0220002
Lab ID: N1914-05
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 14:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	740		7.2 ^	7.2	mg/Kg	1	10/21/2014 2:09	79513
Extractable Total Petroleum Hydrocarbon	1100		36 ^	36	mg/Kg	5	10/30/2014 14:17	79725
Surrogate: ortho-Terphenyl	23.2	S		50-150	%REC	1	10/21/2014 2:09	79513
Surrogate: ortho-Terphenyl	64.6			50-150	%REC	5	10/30/2014 14:17	79725

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0230002
Lab ID: N1914-27
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	9.5		7.9 ^	7.9	mg/Kg	1	10/20/2014 22:04	79553
Surrogate: ortho-Terphenyl	83.2			50-150	%REC	1	10/20/2014 22:04	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0240002
Lab ID: N1914-32
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	170		38 ^	38	mg/Kg	1	10/21/2014 0:47	79553
Surrogate: ortho-Terphenyl	92.5			50-150	%REC	1	10/21/2014 0:47	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0250002
Lab ID: N1914-36
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 9:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	85		37 ^	37	mg/Kg	1	10/21/2014 1:08	79553
Surrogate: ortho-Terphenyl	78.3			50-150	%REC	1	10/21/2014 1:08	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0260002 **Project:** CED Area, WE01-Davisville
Lab ID: N1914-40 **Collection Date:** 10/14/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	59		36 ^	36	mg/Kg	1	10/21/2014 1:28	79553
Surrogate: ortho-Terphenyl	86.3			50-150	%REC	1	10/21/2014 1:28	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB02-101414
Lab ID: N1914-31

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 8:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	0.21		0.20 ^	0.20	mg/L	1	10/22/2014 13:04	79593
Surrogate: ortho-Terphenyl	50.9			50-150	%REC	1	10/22/2014 13:04	79593

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD04-101314
Lab ID: N1914-04
Project: CED Area, WE01-Davisville
Collection Date: 10/13/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	740		36 ^	36	mg/Kg	1	10/21/2014 1:49	79513
Surrogate: ortho-Terphenyl	61.7			50-150	%REC	1	10/21/2014 1:49	79513

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD05-101414
Lab ID: N1914-26

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.7 ^	7.7	mg/Kg	1	10/20/2014 21:43	79553
Surrogate: ortho-Terphenyl	72.9			50-150	%REC	1	10/20/2014 21:43	79553

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: NI914
VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: TPH (C9-C40) and GRO

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Dedhoyan Date: 12/18/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

Case: FRMR NCBC Davisville SDG: N1914

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sedlyar Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Ledlow Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: K1914

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Sedlazo Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNCBCDavisville SDG: N1914

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlazo Date: 12/18/14

See DV Report

EPA NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: X1914

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Ledbetter Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: ERM NCBC Davisville SDG: N1914

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Scallon Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRAR NCBC Davisville SDG: N1914

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sedlyar Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNCBC Davisville SDG: N1914

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Ledlow Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sadlyn

Date: 12/18/14

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: Edward Sudlow Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level: ____

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Sedlmyer Date: 12/18/14

See UV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Nedlyn Date: 12/15/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4
2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4
4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sedbrook Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRM NCBC Davisville SDG: N1914

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4.6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria							
		Fluoranthene-d_{10}		Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10}		Affected Analytes	Action (Detection/ND)
		Water 50-150	Soil 50-150			Water 50-150	Soil 50-150		
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1,2,3-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNCBC Danville SDG: N1914

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1.2-Dichloroethane-d_4

Validator: Edward Sedlyar Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDS (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Sadlyn Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: K1914

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlyar Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNCBC Davisville SDG: N1914

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sidlyar Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix _____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Lebkyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sedlmyer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sedlmayer Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Hedlund

Date: 12/18/14

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Soland Ledlyn

Date: 12/18/14

See DV Report

EPA NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? Y N

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? Y N

Validator: Edward Sedlmyer Date: 12/18/14

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sullivan Date: 12/18/14

See OU Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlazo Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Ludlam Date: 12/18/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1914

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Sedlazo

Date: 12/18/14

APPENDIX D

SUPPORT DOCUMENTATION

FORMER NCBC DAVISVILLE
SOIL DATA
N1914

FRACTION	CHEMICAL	03SS0220002RE	UNITS	FD04-101314	RPD	D
PET	TPH (C09-C40)	1100 J	MG/KG	740	39.13	360.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

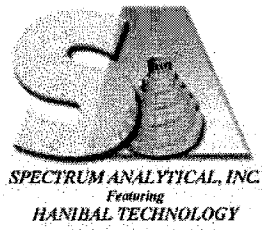
FORMER NCBC DAVISVILLE
SOIL DATA
N1914

FRACTION	CHEMICAL	03SS0230002	UNITS	FD05-101414	RPD	D
PET	TPH (C09-C40)	9.5	MG/KG	ND	200.00	9.50

L2xRL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Report Date:
10-Nov-14 09:42



☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Attn: Amy Thomson

Work Order: N1914
Project : CED Area, WE01-Davisville
Project #:

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1914-01	03SB0170204	Soil	13-Oct-14 14:05	14-Oct-14 07:40
N1914-02	03SB0170406	Soil	13-Oct-14 14:10	14-Oct-14 07:40
N1914-03	03SB0170610	Soil	13-Oct-14 14:15	14-Oct-14 07:40
N1914-04	FD04-101314	Soil	13-Oct-14 00:00	14-Oct-14 07:40
N1914-05	03SS0220002	Soil	13-Oct-14 14:40	14-Oct-14 07:40
N1914-06	03SB0220204	Soil	13-Oct-14 14:45	14-Oct-14 07:40
N1914-07	03SB0220406	Soil	13-Oct-14 14:50	14-Oct-14 07:40
N1914-08	03SB0220610	Soil	13-Oct-14 14:55	14-Oct-14 07:40
N1914-09	03SS0180002	Soil	13-Oct-14 15:15	14-Oct-14 07:40
N1914-10	03SS0180204	Soil	13-Oct-14 15:20	14-Oct-14 07:40
N1914-11	03SB0180406	Soil	13-Oct-14 15:25	14-Oct-14 07:40
N1914-12	03SB0180610	Soil	13-Oct-14 15:30	14-Oct-14 07:40
N1914-13	03SS0190002	Soil	13-Oct-14 15:35	14-Oct-14 07:40
N1914-14	03SB0190204	Soil	13-Oct-14 15:40	14-Oct-14 07:40
N1914-15	03SB0190406	Soil	13-Oct-14 15:45	14-Oct-14 07:40
N1914-16	03SB0190610	Soil	13-Oct-14 15:50	14-Oct-14 07:40
N1914-17	03SS0200002	Soil	13-Oct-14 16:20	14-Oct-14 07:40
N1914-18	03SB0200204	Soil	13-Oct-14 16:25	14-Oct-14 07:40
N1914-19	03SB0200406	Soil	13-Oct-14 16:30	14-Oct-14 07:40
N1914-20	03SB0200610	Soil	13-Oct-14 16:35	14-Oct-14 07:40
N1914-21	03SS0210002	Soil	13-Oct-14 16:45	14-Oct-14 07:40
N1914-22	03SB0210204	Soil	13-Oct-14 16:50	14-Oct-14 07:40
N1914-23	03SB0210406	Soil	13-Oct-14 16:55	14-Oct-14 07:40
N1914-24	03SB0210610	Soil	13-Oct-14 17:00	14-Oct-14 07:40
N1914-25	TB03-101414	Soil	14-Oct-14 08:00	15-Oct-14 12:20
N1914-26	FD05-101414	Soil	14-Oct-14 00:00	15-Oct-14 12:20
N1914-27	03SS0230002	Soil	14-Oct-14 08:35	15-Oct-14 12:20
N1914-28	03SB0230204	Soil	14-Oct-14 08:40	15-Oct-14 12:20
N1914-29	03SB0230406	Soil	14-Oct-14 08:45	15-Oct-14 12:20
N1914-30	03SB0230610	Soil	14-Oct-14 08:50	15-Oct-14 12:20
N1914-31	RB02-101414	Aqueous	14-Oct-14 08:30	15-Oct-14 12:20
N1914-32	03SS0240002	Soil	14-Oct-14 09:10	15-Oct-14 12:20
N1914-33	03SB0240204	Soil	14-Oct-14 09:15	15-Oct-14 12:20
N1914-34	03SB0240406	Soil	14-Oct-14 09:20	15-Oct-14 12:20
N1914-35	03SB0240610	Soil	14-Oct-14 09:25	15-Oct-14 12:20
N1914-36	03SS0250002	Soil	14-Oct-14 09:40	15-Oct-14 12:20
N1914-37	03SB0250204	Soil	14-Oct-14 09:45	15-Oct-14 12:20
N1914-38	03SB0250406	Soil	14-Oct-14 09:50	15-Oct-14 12:20
N1914-39	03SB0250610	Soil	14-Oct-14 09:55	15-Oct-14 12:20
N1914-40	03SS0260002	Soil	14-Oct-14 10:05	15-Oct-14 12:20

Report Date:
10-Nov-14 09:42

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1914
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

N1914

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000, 2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 -

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

N1914 G=Grab C=Composite

Lab Id:	Sample Id:	Date: 2014	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz Jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Calldr	QA/QC Reporting Level / Notes
01	03SB017 0204	10/13	1405	G	SO	1	1			1	1	
02	03SB017 0406	10/13	1410	G	SO	1	1			1	1	On Hold
03	03SB017 0610	10/13	1415	G	SO	1	1			1	1	On Hold
04	~~03~~ FD04-101314	10/13	0000	G	SO	1	1			1	1	~~Dr~~
05	03SS022 0002	10/13	1440	G	SO	1	1			1	1	
06	03SB022 0204	10/13	1445	G	SO	3	2			3	2	Lab QC volume #4
07	03SB022 0406	10/13	1450	G	SO	1	1			1	1	On Hold
08	03SB022 0610	10/13	1455	G	SO	1	1			1	1	On Hold
09	03SS018 0002	10/13	1515	G	SO	1	1			1	1	
10	03SS018 0204	10/13	1520	G	SO	1	1			1	1	

QA/QC Reporting Level: ☐ Level I ☐ Level II ☐ Level III ☐ Level IV ☐ Other _____
State-specific reporting standards: _____

Re-Bz-Ac-Lab sub contract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt R	K G	10-14-14	0740	3.1,39

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

FR

Revised Feb 2013

N1914

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 6 of 7

CHAIN OF CUSTODY RECORD

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☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

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Report To: Scott Anderson
c/o Tetra Tech, Inc
(061 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, P Seward W Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | | – | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

N1914 G=Grab C=Composite

Lab Id:	Sample Id:	2014 Date:	Time:	Type	Matrix	Containers: # of VOA Vials (40ml Vial)	# of Amber Glass (4oz Jar)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE - Naphthalene)	TPH DRO (C9-C40) TOTAL SOLIDS
11	03SB018 0406	10/13	1525	G	SO	1	1			1	1
12	03SB018 0610	10/13	1530	G	SO	1	1			1	1
13	03SS019 0002	10/13	1535	G	SO	1	1			1	1
14	03SB019 0204	10/13	1540	G	SO	1	1			1	1
15	03SB019 0406	10/13	1545	G	SO	1	1			1	1
16	03SB019 0610	10/13	1550	G	SO	1	1			1	1
17	03SS020 0002	10/13	1620	G	SO	1	1			1	1
18	03SB020 0204	10/13	1625	G	SO	1	1			1	1
19	03SB020 0406	10/13	1630	G	SO	1	1			1	1
20	03SB020 0610	10/13	1635	G	SO	1	1			1	1

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt R		10-14-14	0740	3.1, 3.2

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

JR

N1914

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

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Special Handling:
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Report To: Scott Anderson
c/o Tetra Tech, Inc.
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut P Seward W Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | – |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1914

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jar)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	QA/QC Reporting Notes:
21	03SS0210002	10/13	1645	G	SO	1	1			1	1	
22	03SB0210204	10/13	1650	G	SO	1	1			1	1	
23	03SB0210406	10/13	1655	G	SO	1	1			1	1	On Hold
24	03SB0210610	10/13	1700	G	SO	1	1			1	1	On Hold

K Jalkut 10/13/14

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to Lab Subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Pr		10-14-14	0740	3.1, 3.5

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☒ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

IC

N1914

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 6

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
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☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

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Report To: Scott Anderson
C/o Tetra Tech, Inc
661 Andersen Dr.
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N Kingstown State: RI
Sampler(s): K Jalkut, P. Seward, W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= Sol methanol 12= _____

List preservative code below: 11 – – 2 –

QA/QC Reporting Notes:
Refer to lab report for TPH

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials (40 ml vials)	# of Amber Glass (4 oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) (1 Liter amber)	QA/QC Reporting Level
25	TB03-101414	10/14	0800	G	QC	1	–	–	–	1	–	–	–	
26	FD05-101414	10/14	0000	G	SO	1	1	–	–	1	1	–	–	
27	035S023 0002	10/14	0835	G	SO	1	1	–	–	1	1	–	–	
28	035B023 0204	10/14	0840	G	SO	3	2	–	–	3	2	–	–	Lab QC volume #5
29	03SB023 0406	10/14	0845	G	SO	1	1	–	–	1	1	–	–	On Hold
30	03SB023 0610	10/14	0850	G	SO	1	1	–	–	1	1	–	–	On Hold
31	RB02-101414	10/14	~~0900~~ 0830	G	QC	2**	2*	–	–	–	–	2	2	* 1 liter amber; ** 40 ml vial w/ HCl
32	035S024 0002	10/14	0910	G	SO	1	1	–	–	1	1	–	–	
33	03SB024 0204	10/14	0915	G	SO	1	1	–	–	1	1	–	–	
34	03SB024 0406	10/14	0920	G	SO	1	1	–	–	1	1	–	–	On Hold

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Nab K	K P – –	10/15/14	12:20	5.2°c
				4.2°c
				3.1°c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1914

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

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c/o Tetra Tech, Inc
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Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, P. Seward, W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | | - | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials (40 ml vials)	# of Amber Glass (2 40z jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	QA/QC Reporting Level / Notes
35	03SB024 0610	10/14	0925	G	SO	1	1			1	1	On Hold
36 MS	03SB025 0002	10/14	0940	G	SO	1	1			1	1	
37	03SB025 0204	10/14	0945	G	SO	1	1			1	1	
38	03SB025 0406	10/14	0950	G	SO	1	1			1	1	On Hold
39	03SB025 0610	10/14	0955	G	SO	1	1			1	1	On Hold
40	03SS026 0002	10/14	1005	G	SO	1	1			1	1	
	03SB026 0204	10/14	1010	G	SO	1	1			1	1	
	03SB026 0406	10/14	1015	G	SO	1	1			1	1	On Hold
	03SB026 0610	10/14	1020	G	SO	1	1			1	1	On Hold
	03SBS028 0002	10/14	1030	G	SO	1	1			1	1	

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	5.2°C
				4.2°C
				3.1°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Edward Lawler [Warwick]

From: Sinagoga, Leeann [LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 9:27 AM
To: Edward Lawler [RI]; Jennifer Emerson [RI]; Agnes Huntley [RI]
Cc: Anderson, Scott; Ciofani, Leigh Ann; Jalkut, Kayleen; Dale, Jeffrey M CIV NAVFAC MIDLANT, EV (jeffrey.m.dale@navy.mil); Barney, David A CIV OASN (EI&E), BRAC PMO NE (david.a.barney@navy.mil); Logan, Joe
Subject: FW: TPH Results

N1987 → ✓
N1711 → ✓
N1914 → ✓
N1931 → ✓

Good Morning Ed,

I have looked over the GRO/DRO data sent on Friday.

Since we are getting a few hits > the RIDEM 500 mg/kg DRO res DEC standard, we've decided to analyze all samples for GRO/DRO.

So, please analyze all soil samples submitted (including those currently on-hold).

If you can, please continue to send preliminary results for both waters and soils.... Getting a preliminary look at the data is extremely helpful.

Thanks very much for your time and support,

Lee Ann

PS THANKS MUCH TO JENNIFER AND AGNES FOR PITCHING IN LAST WEEK WHILE YOU WERE GONE!

Lee Ann Sinagoga | Department Manager/Chemistry & Risk Assessment
Direct: 412.921.8887 | Main: 412.921.7090 | Fax: 412.921.4040
leeann.sinagoga@tetratech.com

Tetra Tech | Chemistry & Risk Assessment
661 Andersen Drive | Pittsburgh, PA 15220 | www.tetratech.com

-----Original Message-----
From: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV [mailto:jeffrey.m.dale@navy.mil]
Sent: Monday, October 20, 2014 9:13 AM
To: Sinagoga, Leeann
Cc: Anderson, Scott
Subject: RE: TPH Results

Agree 100% with you.
Thanks - got your email yesterday but have a deadline of today.
Jeff

-----Original Message-----
From: Sinagoga, Leeann [mailto:LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 8:52 AM
To: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV
Cc: Anderson, Scott
Subject: RE: TPH Results

Hi Jeff,

Just to follow up on my message yesterday...

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: AGA	Page 01 of 01
Reviewed By: KP	Log-in Date 10/14/2014
Work Order: N1914	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent
9. Cooler Temperature: 3.9 °C
10. Does information on TR/COCs and sample tags agree? Yes / No
11. Date Received at Laboratory: 10/14/2014
12. Time Received: 07:40

Sample Transfer	
Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1914-01						M	
N1914-02						M	
N1914-03						M	
N1914-04						M	
N1914-05						M	
N1914-06						M	
N1914-07						M	
N1914-08						M	
N1914-09						M	
N1914-10						M	
N1914-11						M	
N1914-12						M	
N1914-13						M	
N1914-14						M	
N1914-15						M	
N1914-16						M	
N1914-17						M	
N1914-18						M	
N1914-19						M	
N1914-20						M	
N1914-21						M	
N1914-22						M	
N1914-23						M	
N1914-24						M	

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/15/2014
Work Order: N1914	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	5.2 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/15/2014
12. Time Received	12:20

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1914-25						M	
N1914-26						M	
N1914-27						M	
N1914-28						M	
N1914-29						M	
N1914-30						M	
N1914-31						H	
N1914-32						M	
N1914-33						M	
N1914-34						M	
N1914-35						M	
N1914-36						M	
N1914-37						M	
N1914-38						M	
N1914-39						M	
N1914-40						M	

IR Temp Gun ID:MT-74

CoolantCondition: ICE

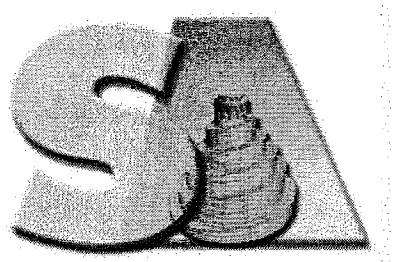
Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

* Volatiles *

646 Camp Ave · North Kingstown, RI 02852-4008 · 401-732-3400 · FAX 401-732-3499
www.spectrum-analytical.com

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1914

SW846 8015D GRO, Gasoline Range Organic (GRO) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D GRO

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B
Soil Samples were prepared following procedures in laboratory test code: SW5035

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: V4
Instrument Type: GC-FID/PID
Description: HP5890 A
Manufacturer: Hewlett-Packard
Model: 5890
GC Column used: 30 m X 0.53 mm ID [um thickness] RTX-502.2 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: 03SB0220204 (N1914-06BMS), 03SB0220204 (N1914-06BMSD), 03SB0230204 (N1914-28BMS) and 03SB0230204 (N1914-28BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

NA.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

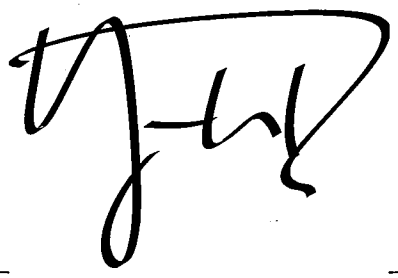
No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

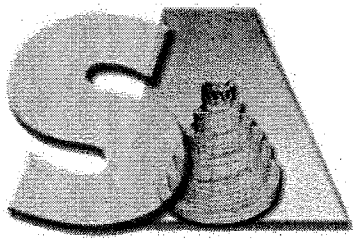
- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____11/7/2014_____



Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79548**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/17/14 7:36**			Run ID: **V4_141017A**				
Client ID: **MB-79548**	Batch ID: **79548**	Units: **ug/Kg**			Analysis Date: **10/17/14 8:59**			SeqNo: **2170594**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	15.85		250	20.00	0	79.2	79	118	0			

Sample ID: **MB-79586**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/20/14 7:56**			Run ID: **V4_141020A**				
Client ID: **MB-79586**	Batch ID: **79586**	Units: **ug/Kg**			Analysis Date: **10/20/14 9:29**			SeqNo: **2170644**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	18.05		250	20.00	0	90.3	79	118	0			

Sample ID: **MB-79651**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/23/14 7:34**			Run ID: **V4_141023A**				
Client ID: **MB-79651**	Batch ID: **79651**	Units: **ug/Kg**			Analysis Date: **10/23/14 9:03**			SeqNo: **2172202**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	21.45		250	20.00	0	107	79	118	0			

Sample ID: **MB-79686**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/24/14 7:12**			Run ID: **V4_141024A**				
Client ID: **MB-79686**	Batch ID: **79686**	Units: **ug/Kg**			Analysis Date: **10/24/14 9:20**			SeqNo: **2173513**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	19.35		250	20.00	0	96.7	79	118	0			

Sample ID: **LCS-79548**	SampType: **LCS**	TestCode: **GRO_S**			Prep Date: **10/17/14 7:36**			Run ID: **V4_141017A**				
Client ID: **LCS-79548**	Batch ID: **79548**	Units: **ug/Kg**			Analysis Date: **10/17/14 8:37**			SeqNo: **2170592**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	24840	2500 ^	2500	25000	0	99.4	80	120	0			
Surrogate: Bromofluorobenzene	19.57		250	20.00	0	97.8	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: LCS-79586	SampType: LCS	TestCode: GRO_S	Prep Date: 10/20/14 7:56	Run ID: V4_141020A
Client ID: LCS-79586	Batch ID: 79586	Units: ug/Kg	Analysis Date: 10/20/14 9:53	SeqNo: 2170645

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	26220	2500 ^	2500	25000	0	105	80	120	0			
Surrogate: Bromofluorobenzene	22.40		250	20.00	0	112	79	118	0			

Sample ID: LCS-79651	SampType: LCS	TestCode: GRO_S	Prep Date: 10/23/14 7:34	Run ID: V4_141023A
Client ID: LCS-79651	Batch ID: 79651	Units: ug/Kg	Analysis Date: 10/23/14 8:36	SeqNo: 2172201

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	25760	2500 ^	2500	25000	0	103	80	120	0			
Surrogate: Bromofluorobenzene	22.85		250	20.00	0	114	79	118	0			

Sample ID: LCS-79686	SampType: LCS	TestCode: GRO_S	Prep Date: 10/24/14 7:12	Run ID: V4_141024A
Client ID: LCS-79686	Batch ID: 79686	Units: ug/Kg	Analysis Date: 10/24/14 8:54	SeqNo: 2173512

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	26980	2500 ^	2500	25000	0	108	80	120	0			
Surrogate: Bromofluorobenzene	22.35		250	20.00	0	112	79	118	0			

Sample ID: LCSD-79651	SampType: LCSD	TestCode: GRO_S	Prep Date: 10/23/14 7:34	Run ID: V4_141023A
Client ID: LCSD-79651	Batch ID: 79651	Units: ug/Kg	Analysis Date: 10/23/14 16:24	SeqNo: 2172239

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	20140	2500 ^	2500	25000	0	80.6	80	120	25760	24.5	20	R
Surrogate: Bromofluorobenzene	22.33		250	20.00	0	112	79	118	0			

Sample ID: N1914-06BMS	SampType: MS	TestCode: GRO_S	Prep Date: 10/20/14 7:56	Run ID: V4_141020A
Client ID: 03SB0220204	Batch ID: 79586	Units: ug/Kg	Analysis Date: 10/20/14 10:16	SeqNo: 2170646

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	19850	2000 ^	2000	19510	0	102	60	140	0			
Surrogate: Bromofluorobenzene	21.39		200	20.00	0	107	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: N1914-28BMS	SampType: MS	TestCode: GRO_S	Prep Date: 10/24/14 7:12	Run ID: V4_141024A
Client ID: 03SB0230204	Batch ID: 79686	Units: ug/Kg	Analysis Date: 10/24/14 16:58	SeqNo: 2173537

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	25280	2300 ^	2300	23450	0	108	60	140	0			
Surrogate: Bromofluorobenzene	22.93		230	20.00	0	115	79	118	0			

Sample ID: N1914-06BMSD	SampType: MSD	TestCode: GRO_S	Prep Date: 10/20/14 7:56	Run ID: V4_141020A
Client ID: 03SB0220204	Batch ID: 79586	Units: ug/Kg	Analysis Date: 10/20/14 10:37	SeqNo: 2170647

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	17620	1800 ^	1800	17640	0	99.9	60	140	19850	11.9	20	
Surrogate: Bromofluorobenzene	22.42		180	20.00	0	112	79	118	0			

Sample ID: N1914-28BMSD	SampType: MSD	TestCode: GRO_S	Prep Date: 10/24/14 7:12	Run ID: V4_141024A
Client ID: 03SB0230204	Batch ID: 79686	Units: ug/Kg	Analysis Date: 10/24/14 17:18	SeqNo: 2173538

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	24260	2400 ^	2400	24040	0	101	60	140	25280	4.13	20	
Surrogate: Bromofluorobenzene	21.82		240	20.00	0	109	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
m14.10.24.0936 J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79616**	SampType: **MBLK**	TestCode: **GRO_W**			Prep Date: **10/21/14 7:55**			Run ID: **V4_141021A**				
Client ID: **MB-79616**	Batch ID: **79616**	Units: **ug/L**			Analysis Date: **10/21/14 10:28**			SeqNo: **2169956**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	19.67		5.0	20.00	0	98.3	87	112	0			

Sample ID: **LCS-79616**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **10/21/14 7:55**			Run ID: **V4_141021A**				
Client ID: **LCS-79616**	Batch ID: **79616**	Units: **ug/L**			Analysis Date: **10/21/14 9:19**			SeqNo: **2169953**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	519.9	100 ^	100	500.0	0	104	80	120	0			
Surrogate: Bromofluorobenzene	19.16		5.0	20.00	0	95.8	87	112	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
m14.10.24.0936 J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

Data File: \\avogadro\organics\V4.i\141017.B\V4D07960.D
Report Date: 22-Oct-2014 15:38

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07960.D
Analysis Type: WATER
Lab Sample ID: VSTD0504L
Method: \\avogadro\organics\V4.i\141017.B\v4GRO.m

Injection Date: 17-OCT-2014 08:15
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	86033	0.010	4.63327	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	33718	0.010	1.02235	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141017.B\V4D07983.D
Report Date: 22-Oct-2014 15:39

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 17-OCT-2014 17:47
Lab File ID: V4D07983.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504M Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141017.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	81018	0.010	10.19194	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	34024	0.010	0.12426	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141020.B\V4D07984.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D07984.D
Analysis Type: WATER
Lab Sample ID: VSTD0504N
Method: \\avogadro\organics\V4.i\141020.B\v4GRO.m

Injection Date: 20-OCT-2014 09:08
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88180	0.010	2.25272	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32958	0.010	3.25518	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141020.B\V4D08001.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08001.D
Analysis Type: WATER
Lab Sample ID: VSTD05040
Method: \\avogadro\organics\V4.i\141020.B\v4GRO.m

Injection Date: 20-OCT-2014 15:49
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	85226	0.010	5.52707	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32676	0.010	4.08179	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141021.B\V4D08005.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08005.D
Analysis Type: WATER
Lab Sample ID: VSTD0504P
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

Injection Date: 21-OCT-2014 08:46
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88671	0.010	1.70891	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32210	0.010	5.45102	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141021.B\V4D08024.D
Report Date: 23-Oct-2014 08:15

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08024.D
Analysis Type: WATER
Lab Sample ID: VSTD0504Q
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

Injection Date: 21-OCT-2014 17:14
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88143	0.010	2.29429	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32981	0.010	3.18576	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141023.B\V4D08072.D
Report Date: 24-Oct-2014 10:50

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08072.D
Analysis Type: WATER
Lab Sample ID: VSTD0504U
Method: \\avogadro\organics\V4.i\141023.B\v4GRO.m

Injection Date: 23-OCT-2014 16:46
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	78525	0.010	12.95525	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32771	0.010	3.80278	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141023.B\V4D08050.D
Report Date: 24-Oct-2014 10:48

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08050.D
Analysis Type: WATER
Lab Sample ID: VSTD0504T
Method: \\avogadro\organics\V4.i\141023.B\v4GRO.m

Injection Date: 23-OCT-2014 08:14
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	86389	0.010	4.23824	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	34249	0.010	-0.53489	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141024.B\V4D08080.D
Report Date: 27-Oct-2014 11:32

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 24-OCT-2014 08:31
Lab File ID: V4D08080.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504V Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141024.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	92487	0.010	-2.52130	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	34356	0.010	-0.85016	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141024.B\V4D08106.D
Report Date: 27-Oct-2014 11:33

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 24-OCT-2014 18:24
Lab File ID: V4D08106.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504W Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141024.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	89207	0.010	1.11450	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	35287	0.010	-3.58098	20.00000	Averaged

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1914

SW846 8015D TPH, Total Petroleum Hydrocarbons (TPH) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times with the following exceptions:

03SS0220002 (N1914-05ARE) exceed by 1 Days
03SS0180002 (N1914-09ARE) exceed by 1 Days
03SS0190002 (N1914-13ARE) exceed by 1 Days
03SS0200002 (N1914-17ARE) exceed by 1 Days

Please note these samples were initially extracted within the method hold time. They were re-extracted due to surrogate recovery failures. Both sets of data are included in this report.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D TPH

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C
Soil Samples were prepared following procedures in laboratory test

code: SW3550B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: F1
Instrument Type: GC-FID
Description: HP6890
Manufacturer: Hewlett-Packard
Model: 6890
GC Column used: 30 m X 0.32 mm ID [0.25 um thickness] Rtx-5MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits with the following exceptions. Please note that the acceptance criteria allow one surrogate recovery outside of the QC limits per fraction.

03SS0220002 (N1914-05A), recovery is below criteria for ortho-Terphenyl at 23% with criteria of (50-150).

03SS0180002 (N1914-09A), recovery is below criteria for ortho-Terphenyl at 29% with criteria of (50-150).

03SS0190002 (N1914-13A), recovery is below criteria for ortho-Terphenyl at 43% with criteria of (50-150).

03SS0200002 (N1914-17A), recovery is below criteria for ortho-Terphenyl at 32% with criteria of (50-150).

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC

limits.

2. **Matrix Spike / Matrix Spike Duplicate (MS/MSD):**

Matrix spikes were performed on samples: 03SB0220204 (N1914-06AMS), 03SB0220204 (N1914-06AMSD), 03SB0230204 (N1914-28AMS) and 03SB0230204 (N1914-28AMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

The following samples were analyzed at dilution:

03SS0220002 (N1914-05ARE) : Dilution Factor: 5
03SS0180002 (N1914-09ARE) : Dilution Factor: 5

F. Samples:

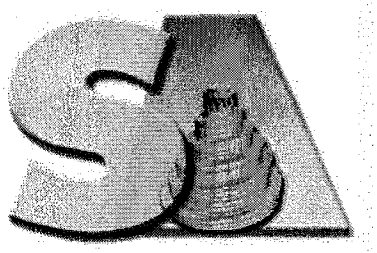
No other unusual occurrences were noted during sample analysis.

G. Manual Integration

No sample in this SDG were performed with manual integration.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____



Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

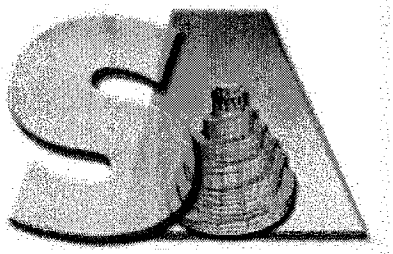
A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79513**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/15/14 13:22**	Run ID: **F1_141020A**
Client ID: **MB-79513**	Batch ID: **79513**	Units: **mg/Kg**	Analysis Date: **10/20/14 12:25**	SeqNo: **2172895**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	2.185		0.83	3.333	0	65.6	50	150	0			

Sample ID: **MB-79553**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/17/14 10:27**	Run ID: **F1_141020A**
Client ID: **MB-79553**	Batch ID: **79553**	Units: **mg/Kg**	Analysis Date: **10/20/14 21:02**	SeqNo: **2172924**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	3.267		0.83	3.333	0	98.0	50	150	0			

Sample ID: **MB-79626**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:27**	Run ID: **F1_141028A**
Client ID: **MB-79626**	Batch ID: **79626**	Units: **mg/Kg**	Analysis Date: **10/28/14 11:03**	SeqNo: **2175595**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	2.744		0.83	3.333	0	82.3	50	150	0			

Sample ID: **MB-79725**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:46**	Run ID: **F1_141030B**
Client ID: **MB-79725**	Batch ID: **79725**	Units: **mg/Kg**	Analysis Date: **10/30/14 12:52**	SeqNo: **2178871**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	3.036		0.83	3.333	0	91.1	50	150	0			

Sample ID: **LCS-79513**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/15/14 13:22**	Run ID: **F1_141020A**
Client ID: **LCS-79513**	Batch ID: **79513**	Units: **mg/Kg**	Analysis Date: **10/20/14 12:44**	SeqNo: **2172897**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	143.7	7.0 ^	7.0	166.7	0	86.2	60	140	0			
Surrogate: ortho-Terphenyl	2.945		0.83	3.333	0	88.3	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

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CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **LCS-79553**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/17/14 10:27**	Run ID: **F1_141020A**
Client ID: **LCS-79553**	Batch ID: **79553**	Units: **mg/Kg**	Analysis Date: **10/20/14 21:23**	SeqNo: **2172925**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	159.8	7.0 ^	7.0	166.7	0	95.9	60	140	0			
Surrogate: ortho-Terphenyl	3.200		0.83	3.333	0	96.0	50	150	0			

Sample ID: **LCS-79626**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:27**	Run ID: **F1_141028A**
Client ID: **LCS-79626**	Batch ID: **79626**	Units: **mg/Kg**	Analysis Date: **10/28/14 11:24**	SeqNo: **2175596**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	140.9	7.0 ^	7.0	166.7	0	84.5	60	140	0			
Surrogate: ortho-Terphenyl	2.715		0.83	3.333	0	81.5	50	150	0			

Sample ID: **LCS-79725**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:46**	Run ID: **F1_141030B**
Client ID: **LCS-79725**	Batch ID: **79725**	Units: **mg/Kg**	Analysis Date: **10/30/14 13:14**	SeqNo: **2178872**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	120.9	7.0 ^	7.0	166.7	0	72.5	60	140	0			
Surrogate: ortho-Terphenyl	2.232		0.83	3.333	0	66.9	50	150	0			

Sample ID: **LCSD-79626**	SampType: **LCSD**	TestCode: **TPH_S**	Prep Date: **10/22/14 7:27**	Run ID: **F1_141028A**
Client ID: **LCSD-79626**	Batch ID: **79626**	Units: **mg/Kg**	Analysis Date: **10/28/14 11:45**	SeqNo: **2175597**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	142.6	7.0 ^	7.0	166.7	0	85.6	60	140	140.9	1.19	20	
Surrogate: ortho-Terphenyl	2.675		0.83	3.333	0	80.3	50	150	0			

Sample ID: **LCSD-79725**	SampType: **LCSD**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:46**	Run ID: **F1_141030B**
Client ID: **LCSD-79725**	Batch ID: **79725**	Units: **mg/Kg**	Analysis Date: **10/30/14 16:02**	SeqNo: **2178879**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	168.6	7.0 ^	7.0	166.7	0	101	60	140	120.9	32.9	20	R
Surrogate: ortho-Terphenyl	2.309		0.83	3.333	0	69.3	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **N1914-06AMS**	SampType: **MS**	TestCode: **TPH_S**	Prep Date: **10/15/14 13:22**	Run ID: **F1_141022A**
Client ID: **03SB0220204**	Batch ID: **79513**	Units: **mg/Kg**	Analysis Date: **10/22/14 15:08**	SeqNo: **2173052**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	141.7	7.5 ^	7.5	179.0	7.655	74.9	50	150	0			
Surrogate: ortho-Terphenyl	2.673		0.89	3.580	0	74.7	50	150	0			

Sample ID: **N1914-28AMS**	SampType: **MS**	TestCode: **TPH_S**	Prep Date: **10/17/14 10:27**	Run ID: **F1_141020A**
Client ID: **03SB0230204**	Batch ID: **79553**	Units: **mg/Kg**	Analysis Date: **10/20/14 22:45**	SeqNo: **2172929**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	133.1	7.9 ^	7.9	188.4	9.743	65.5	50	150	0			
Surrogate: ortho-Terphenyl	2.583		0.94	3.768	0	68.5	50	150	0			

Sample ID: **N1914-06AMSD**	SampType: **MSD**	TestCode: **TPH_S**	Prep Date: **10/15/14 13:22**	Run ID: **F1_141020A**
Client ID: **03SB0220204**	Batch ID: **79513**	Units: **mg/Kg**	Analysis Date: **10/20/14 14:07**	SeqNo: **2172903**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	119.3	7.4 ^	7.4	176.1	7.655	63.4	50	150	141.7	17.2	30	
Surrogate: ortho-Terphenyl	2.325		0.88	3.521	0	66.0	50	150	0			

Sample ID: **N1914-28AMSD**	SampType: **MSD**	TestCode: **TPH_S**	Prep Date: **10/17/14 10:27**	Run ID: **F1_141020A**
Client ID: **03SB0230204**	Batch ID: **79553**	Units: **mg/Kg**	Analysis Date: **10/20/14 23:05**	SeqNo: **2172930**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	139.1	7.9 ^	7.9	188.4	9.743	68.7	50	150	133.1	4.42	30	
Surrogate: ortho-Terphenyl	2.667		0.94	3.768	0	70.8	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1914
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_W

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79593** SampType: **MBLK** TestCode: **TPH_W** Prep Date: **10/20/14 14:50** Run ID: **F1_141022A**
Client ID: **MB-79593** Batch ID: **79593** Units: **mg/L** Analysis Date: **10/22/14 12:02** SeqNo: **2173044**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	0.20 ^	0.20									
Surrogate: ortho-Terphenyl	0.08808		0.025	0.1000	0	88.1	50	150	0			

Sample ID: **LCS-79593** SampType: **LCS** TestCode: **TPH_W** Prep Date: **10/20/14 14:50** Run ID: **F1_141022A**
Client ID: **LCS-79593** Batch ID: **79593** Units: **mg/L** Analysis Date: **10/22/14 14:26** SeqNo: **2173050**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.358	0.20 ^	0.20	5.000	0	87.2	60	140	0			
Surrogate: ortho-Terphenyl	0.08661		0.025	0.1000	0	86.6	50	150	0			

Sample ID: **LCSD-79593** SampType: **LCSD** TestCode: **TPH_W** Prep Date: **10/20/14 14:50** Run ID: **F1_141022A**
Client ID: **LCSD-79593** Batch ID: **79593** Units: **mg/L** Analysis Date: **10/22/14 12:43** SeqNo: **2173045**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.369	0.20 ^	0.20	5.000	0	87.4	60	140	4.358	0.259	20	
Surrogate: ortho-Terphenyl	0.08674		0.025	0.1000	0	86.7	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Response Factor Report FID1

Method Path : O:\F1.I\QMETHODS\
Method File : TPH0717.M
Title : TPH, ETPH, DRO, Fuel ID, ORO
Last Update : Thu Jul 17 14:13:45 2014
Response Via : Initial Calibration

Calibration Files
5 =F1J3033.D 20 =F1J3034.D 50 =F1J3035.D
80 =F1J3036.D 100 =F1J3037.D 120 =F1J3038.D

		Compound	5	20	50	80	100	120	Avg		%RSD
1)	S	1-Chlorooctadeca							0.000		-1.00
2)	S	ortho-Terphenyl	2.830	3.103	2.910	3.255	3.307	3.086	3.084	E5	5.33
3)	H	DRO C10 to C28	2.842	2.831	2.599	3.089	3.059	2.824	2.875	E5	5.59
4)	H	TPH C9 to C36	2.898	2.856	2.622	3.123	3.088	2.856	2.907	E5	5.59
5)	H	Gasoline							0.000		-1.00
6)	H	Jet Fuel							0.000		-1.00
7)	H	Motor Oil/Other							0.000		-1.00
8)	H	Number 2 Fuel							0.000		-1.00
9)	H	Number 4 Fuel							0.000		-1.00
10)	H	Number 6 Fuel							0.000		-1.00
11)	I	5a-Androstane	----------ISTD----------								
12)	S	1-Chlorooctadeca							0.000		-1.00
13)	S	ortho-Terphenyl	0.939	1.011	1.065	1.097	1.063	1.071	1.050		4.86
14)	T	C9 Nonane	0.797	0.784	0.809	0.898	0.822	0.834	0.834		4.68
15)	TD	C10 Decane	0.815	0.807	0.837	0.927	0.853	0.863	0.861		4.85
16)	TD	C12 Dodecane	0.854	0.843	0.879	0.963	0.893	0.902	0.899		4.56
17)	TD	C14 Tetradecane	0.890	0.873	0.913	0.992	0.928	0.932	0.931		4.21
18)	TD	C16 Hexadecane	0.951	0.914	0.946	1.027	0.967	0.966	0.968		3.55
19)	TD	C18 Octadecane	0.940	0.919	0.950	1.033	0.979	0.970	0.972		3.69
20)	TD	C20 Eicosane	0.971	0.945	0.978	1.066	1.015	1.002	1.002		3.77
21)	TD	C22 Docosane	0.977	0.968	0.987	1.081	1.031	1.019	1.016		3.72
22)	TD	C24 Tetracosane	0.997	0.974	0.995	1.092	1.042	1.033	1.028		3.68
23)	TD	C26 Hexacosane	1.011	0.987	1.010	1.110	1.060	1.053	1.045		3.81
24)	TD	C28 Octacosane	1.024	0.993	1.016	1.119	1.067	1.062	1.054		3.85
25)	T	C30 Triacontane	1.017	1.006	1.033	1.138	1.083	1.080	1.069		4.26
26)	T	C32 Dotriaconta	0.986	0.987	1.021	1.123	1.066	1.065	1.051		4.63
27)	T	C36 Hexatriacon	1.229	1.028	1.057	1.162	1.095	1.096	1.113		5.57
28)	H	DRO C10 to C28	0.943	0.922	0.951	1.041	0.984	0.980	0.978		3.91
29)	H	TPH C8 to C40 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
30)	H	TPH C9 to C36 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
31)		----------							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3621.D
Lab Smp Id: FSTD1001E Client Smp ID: FSTD1001E
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 11:23 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 20 11:40:44 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	309.643 E3	-0.4	100	0.00
3	H	DRO C10 to C28	287.452	288.661 E3	-0.4	100	0.00
4	H	TPH C9 to C40	290.717	285.389 E3	1.8	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.060	-1.0	100	0.00
14		C9 Nonane	0.834	0.744	10.8	100	0.00
15		C10 Decane	0.861	0.792	8.0	100	0.00
16		C12 Dodecane	0.899	0.880	2.1	100	0.00
17		C14 Tetradecane	0.931	0.947	-1.7	100	0.00
18		C16 Hexadecane	0.968	0.999	-3.2	100	0.00
19		C18 Octadecane	0.972	1.014	-4.3	100	0.00
20		C20 Eicosane	1.002	1.044	-4.2	100	0.00
21		C22 Docosane	1.016	1.056	-3.9	100	0.00
22		C24 Tetracosane	1.028	1.054	-2.5	100	0.00
23		C26 Hexacosane	1.045	1.055	-1.0	100	0.00
24		C28 Octacosane	1.054	1.045	0.9	100	0.00
25		C30 Triacontane	1.069	1.039	2.8	100	0.00
26		C32 Dotriacontane	1.051	1.007	4.2	100	0.00
27		C36 Hexatriacontane	1.113	1.008	9.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.989	-1.1	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.977	1.2	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.977	1.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3633.D
Lab Smp Id: FSTD1001F Client Smp ID: FSTD1001F
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 15:30 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 20 16:36:05 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	317.256 E3	-2.9	102	0.00
3	H	DRO C10 to C28	287.452	292.700 E3	-1.8	101	0.00
4	H	TPH C9 to C40	290.717	288.566 E3	0.7	101	0.00
11	I	5a-Androstane	1.000	1.000	0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074	-2.3	102	0.00
14		C9 Nonane	0.834	0.748	10.3	102	0.00
15		C10 Decane	0.861	0.801	7.0	102	0.00
16		C12 Dodecane	0.899	0.892	0.8	103	0.00
17		C14 Tetradecane	0.931	0.965	-3.7	103	0.00
18		C16 Hexadecane	0.968	1.017	-5.1	103	0.00
19		C18 Octadecane	0.972	1.022	-5.1	102	0.00
20		C20 Eicosane	1.002	1.048	-4.6	102	0.00
21		C22 Docosane	1.016	1.049	-3.2	100	0.00
22		C24 Tetracosane	1.028	1.044	-1.6	100	0.00
23		C26 Hexacosane	1.045	1.043	0.2	100	0.00
24		C28 Octacosane	1.054	1.031	2.2	100	0.00
25		C30 Triacontane	1.069	1.028	3.8	100	0.00
26		C32 Dotriacontane	1.051	0.996	5.2	100	0.00
27		C36 Hexatriacontane	1.113	0.997	10.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.991	-1.3	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.977	1.2	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.977	1.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3646.D
Lab Smp Id: FSTD1001G Client Smp ID: FSTD1001G
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 20 Oct 2014 20:01 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 21 09:05:41 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	326.840 E3	-6.0	106	0.00
3	H	DRO C10 to C28	287.452	302.026 E3	-5.1	105	0.00
4	H	TPH C9 to C40	290.717	298.887 E3	-2.8	105	0.00
11	I	5a-Androstane	1.000	1.000	0.0	105	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.071	-2.0	106	0.00
14		C9 Nonane	0.834	0.738	11.5	104	0.00
15		C10 Decane	0.861	0.790	8.2	104	0.00
16		C12 Dodecane	0.899	0.881	2.0	105	0.00
17		C14 Tetradecane	0.931	0.951	-2.1	105	0.00
18		C16 Hexadecane	0.968	1.002	-3.5	105	0.00
19		C18 Octadecane	0.972	1.018	-4.7	105	0.00
20		C20 Eicosane	1.002	1.047	-4.5	105	0.00
21		C22 Docosane	1.016	1.054	-3.7	104	0.00
22		C24 Tetracosane	1.028	1.052	-2.3	104	0.00
23		C26 Hexacosane	1.045	1.054	-0.9	104	0.00
24		C28 Octacosane	1.054	1.045	0.9	105	0.00
25		C30 Triacontane	1.069	1.045	2.2	105	0.00
26		C32 Dotriacontane	1.051	1.014	3.5	105	0.00
27		C36 Hexatriacontane	1.113	1.018	8.5	105	-0.01
28	H	DRO C10 to C28 ISTD	0.978	0.989	-1.1	105	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.979	1.0	105	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.979	1.0	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3658.D
Lab Smp Id: FSTD1001H Client Smp ID: FSTD1001H
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 21 Oct 2014 00:06 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 21 09:16:55 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	329.169 E3	-6.7	106	0.00
3	H	DRO C10 to C28	287.452	303.503 E3	-5.6	105	0.00
4	H	TPH C9 to C40	290.717	299.923 E3	-3.2	105	0.00
11	I	5a-Androstane	1.000	1.000	0.0	105	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.069	-1.8	106	0.00
14		C9 Nonane	0.834	0.724	13.2	103	0.00
15		C10 Decane	0.861	0.775	10.0	103	0.00
16		C12 Dodecane	0.899	0.869	3.3	104	0.00
17		C14 Tetradecane	0.931	0.947	-1.7	105	0.00
18		C16 Hexadecane	0.968	1.006	-3.9	106	0.00
19		C18 Octadecane	0.972	1.015	-4.4	106	0.00
20		C20 Eicosane	1.002	1.047	-4.5	106	0.00
21		C22 Docosane	1.016	1.053	-3.6	105	0.00
22		C24 Tetracosane	1.028	1.052	-2.3	105	0.00
23		C26 Hexacosane	1.045	1.052	-0.7	105	0.00
24		C28 Octacosane	1.054	1.041	1.2	105	0.00
25		C30 Triacontane	1.069	1.040	2.7	106	0.00
26		C32 Dotriacontane	1.051	1.007	4.2	105	-0.01
27		C36 Hexatriacontane	1.113	1.009	9.3	105	-0.01
28	H	DRO C10 to C28 ISTD	0.978	0.986	-0.8	105	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.974	1.5	105	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.974	1.5	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141020A.B\F1J3670.D
Lab Smp Id: FSTD1001I Client Smp ID: FSTD1001I
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 21 Oct 2014 4:12 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 21 09:27:26 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	302.969	E3	1.8	98	0.00
3	H	DRO C10 to C28	287.452	281.278	E3	2.1	97	0.00
4	H	TPH C9 to C40	290.717	278.962	E3	4.0	98	0.00
11	I	5a-Androstane	1.000	1.000		0.0	95	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.089		-3.7	98	0.00
14		C9 Nonane	0.834	0.832		0.2	107	0.00
15		C10 Decane	0.861	0.882		-2.4	106	0.00
16		C12 Dodecane	0.899	0.958		-6.6	104	0.00
17		C14 Tetradecane	0.931	1.010		-8.5	102	0.00
18		C16 Hexadecane	0.968	1.041		-7.5	99	0.00
19		C18 Octadecane	0.972	1.030		-6.0	97	0.00
20		C20 Eicosane	1.002	1.048		-4.6	96	0.00
21		C22 Docosane	1.016	1.042		-2.6	94	0.00
22		C24 Tetracosane	1.028	1.031		-0.3	93	0.00
23		C26 Hexacosane	1.045	1.036		0.9	94	0.00
24		C28 Octacosane	1.054	1.030		2.3	94	0.00
25		C30 Triacontane	1.069	1.036		3.1	95	0.00
26		C32 Dotriacontane	1.051	1.012		3.7	96	0.00
27		C36 Hexatriacontane	1.113	1.046		6.0	99	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.011		-3.4	97	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.002		-1.3	98	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.002		-1.3	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3723.D
Lab Smp Id: FSTD1001N Client Smp ID: FSTD1001N
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 9:38 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 09:56:12 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	297.901	E3	3.4	100	0.00
3	H	DRO C10 to C28	287.452	282.607	E3	1.7	100	0.00
4	H	TPH C9 to C40	290.717	288.330	E3	0.8	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.061		-1.0	100	0.00
14		C9 Nonane	0.834	0.791		5.2	100	0.00
15		C10 Decane	0.861	0.814		5.5	100	0.00
16		C12 Dodecane	0.899	0.867		3.6	100	0.00
17		C14 Tetradecane	0.931	0.922		1.0	100	0.00
18		C16 Hexadecane	0.968	0.980		-1.2	100	0.00
19		C18 Octadecane	0.972	1.000		-2.9	100	0.00
20		C20 Eicosane	1.002	1.045		-4.3	100	0.00
21		C22 Docosane	1.016	1.071		-5.4	100	0.00
22		C24 Tetracosane	1.028	1.086		-5.6	100	0.00
23		C26 Hexacosane	1.045	1.135		-8.6	100	0.00
24		C28 Octacosane	1.054	1.147		-8.8	100	0.00
25		C30 Triacontane	1.069	1.172		-9.6	100	0.00
26		C32 Dotriacontane	1.051	1.157		-10.1	100	0.00
27		C36 Hexatriacontane	1.113	1.192		-7.1	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.007		-3.0	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.027		-3.8	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.027		-3.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3735.D
Lab Smp Id: FSTD10010 Client Smp ID: FSTD10010
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 13:45 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 14:02:35 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	301.046 E3	2.4	101	0.00
3	H	DRO C10 to C28	287.452	286.371 E3	0.4	101	0.00
4	H	TPH C9 to C40	290.717	292.647 E3	-0.7	101	0.00
11	I	5a-Androstane	1.000	1.000	0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.057	-0.7	101	0.00
14		C9 Nonane	0.834	0.782	6.2	100	0.00
15		C10 Decane	0.861	0.804	6.6	100	0.00
16		C12 Dodecane	0.899	0.857	4.7	100	0.00
17		C14 Tetradecane	0.931	0.914	1.8	101	0.00
18		C16 Hexadecane	0.968	0.971	-0.3	101	0.00
19		C18 Octadecane	0.972	0.995	-2.4	101	0.00
20		C20 Eicosane	1.002	1.047	-4.5	102	0.00
21		C22 Docosane	1.016	1.074	-5.7	102	0.00
22		C24 Tetracosane	1.028	1.094	-6.4	102	0.00
23		C26 Hexacosane	1.045	1.138	-8.9	102	0.00
24		C28 Octacosane	1.054	1.157	-9.8	102	0.00
25		C30 Triacontane	1.069	1.181	-10.5	102	0.00
26		C32 Dotriacontane	1.051	1.165	-10.8	102	0.00
27		C36 Hexatriacontane	1.113	1.200	-7.8	102	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.005	-2.8	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.027	-3.8	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.027	-3.8	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3741.D
Lab Smp Id: FSTD1001P Client Smp ID: FSTD1001P
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 15:49 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 16:06:49 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	323.981 E3	-5.0	109	0.00
3	H	DRO C10 to C28	287.452	309.010 E3	-7.5	109	0.00
4	H	TPH C9 to C40	290.717	316.753 E3	-9.0	110	0.00
11	I	5a-Androstane	1.000	1.000	0.0	109	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.059	-0.9	109	0.00
14		C9 Nonane	0.834	0.791	5.2	109	0.00
15		C10 Decane	0.861	0.812	5.7	109	0.00
16		C12 Dodecane	0.899	0.860	4.3	108	0.00
17		C14 Tetradecane	0.931	0.916	1.6	108	0.00
18		C16 Hexadecane	0.968	0.975	-0.7	108	0.00
19		C18 Octadecane	0.972	0.997	-2.6	109	0.00
20		C20 Eicosane	1.002	1.047	-4.5	109	0.00
21		C22 Docosane	1.016	1.081	-6.4	110	0.00
22		C24 Tetracosane	1.028	1.100	-7.0	110	0.00
23		C26 Hexacosane	1.045	1.147	-9.8	110	0.00
24		C28 Octacosane	1.054	1.169	-10.9	111	0.00
25		C30 Triacontane	1.069	1.196	-11.9	111	0.00
26		C32 Dotriacontane	1.051	1.184	-12.7	111	0.00
27		C36 Hexatriacontane	1.113	1.225	-10.1	112	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.011	-3.4	109	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.036	-4.8	110	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.036	-4.8	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141028A.B\F1J3844.D
Lab Smp Id: FSTD1001Z Client Smp ID: FSTD1001Z
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 28 Oct 2014 10:21 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 28 10:38:31 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	346.347 E3	-12.3	100	0.00
3	H	DRO C10 to C28	287.452	326.965 E3	-13.7	100	0.00
4	H	TPH C9 to C40	290.717	329.401 E3	-13.3	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.071	-2.0	100	0.00
14		C9 Nonane	0.834	0.785	5.9	100	0.00
15		C10 Decane	0.861	0.819	4.9	100	0.00
16		C12 Dodecane	0.899	0.887	1.3	100	0.00
17		C14 Tetradecane	0.931	0.949	-1.9	100	0.00
18		C16 Hexadecane	0.968	0.993	-2.6	100	0.00
19		C18 Octadecane	0.972	1.021	-5.0	100	0.00
20		C20 Eicosane	1.002	1.069	-6.7	100	0.00
21		C22 Docosane	1.016	1.064	-4.7	100	0.00
22		C24 Tetracosane	1.028	1.079	-5.0	100	0.00
23		C26 Hexacosane	1.045	1.117	-6.9	100	0.00
24		C28 Octacosane	1.054	1.112	-5.5	100	0.00
25		C30 Triacontane	1.069	1.126	-5.3	100	0.00
26		C32 Dotriacontane	1.051	1.104	-5.0	100	0.00
27		C36 Hexatriacontane	1.113	1.136	-2.1	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.011	-3.4	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.019	-3.0	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.019	-3.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141028A.B\F1J3856.D
Lab Smp Id: FSTD1001B Client Smp ID: FSTD1001B
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 28 Oct 2014 14:29 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 29 08:33:14 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	338.086	E3	-9.6	98	0.00
3	H	DRO C10 to C28	287.452	314.976	E3	-9.6	96	0.00
4	H	TPH C9 to C40	290.717	316.541	E3	-8.9	96	0.00
11	I	5a-Androstane	1.000	1.000		0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.075		-2.4	98	0.00
14		C9 Nonane	0.834	0.780		6.5	97	0.00
15		C10 Decane	0.861	0.814		5.5	97	0.00
16		C12 Dodecane	0.899	0.887		1.3	97	0.00
17		C14 Tetradecane	0.931	0.946		-1.6	97	0.00
18		C16 Hexadecane	0.968	0.998		-3.1	98	0.00
19		C18 Octadecane	0.972	1.015		-4.4	97	0.00
20		C20 Eicosane	1.002	1.062		-6.0	97	0.00
21		C22 Docosane	1.016	1.049		-3.2	96	0.00
22		C24 Tetracosane	1.028	1.060		-3.1	96	0.00
23		C26 Hexacosane	1.045	1.096		-4.9	95	0.00
24		C28 Octacosane	1.054	1.090		-3.4	95	0.00
25		C30 Triacontane	1.069	1.103		-3.2	95	0.00
26		C32 Dotriacontane	1.051	1.082		-2.9	95	0.00
27		C36 Hexatriacontane	1.113	1.110		0.3	95	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.002		-2.5	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.007		-1.8	96	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.007		-1.8	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141028A.B\F1J3868.D
Lab Smp Id: FSTD1001C Client Smp ID: FSTD1001C
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 28 Oct 2014 18:37 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 29 08:37:21 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	339.407 E3	-10.0	98	0.00
3	H	DRO C10 to C28	287.452	314.589 E3	-9.4	96	0.00
4	H	TPH C9 to C40	290.717	314.248 E3	-8.1	95	0.00
11	I	5a-Androstane	1.000	1.000	0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.080	-2.9	98	0.00
14		C9 Nonane	0.834	0.780	6.5	97	0.00
15		C10 Decane	0.861	0.817	5.1	97	0.00
16		C12 Dodecane	0.899	0.898	0.1	98	0.00
17		C14 Tetradecane	0.931	0.951	-2.1	97	0.00
18		C16 Hexadecane	0.968	1.006	-3.9	98	0.00
19		C18 Octadecane	0.972	1.018	-4.7	97	0.00
20		C20 Eicosane	1.002	1.060	-5.8	96	0.00
21		C22 Docosane	1.016	1.052	-3.5	96	0.00
22		C24 Tetracosane	1.028	1.050	-2.1	95	0.00
23		C26 Hexacosane	1.045	1.085	-3.8	94	0.00
24		C28 Octacosane	1.054	1.075	-2.0	94	0.00
25		C30 Triacontane	1.069	1.082	-1.2	93	0.00
26		C32 Dotriacontane	1.051	1.055	-0.4	93	0.00
27		C36 Hexatriacontane	1.113	1.073	3.6	92	-0.01
28	H	DRO C10 to C28 ISTD	0.978	1.001	-2.4	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.000	-1.1	95	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.000	-1.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141028A.B\F1J3878.D
Lab Smp Id: FSTD1001D Client Smp ID: FSTD1001D
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 28 Oct 2014 22:01 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 29 08:39:40 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	359.152	E3	-16.4	104	0.00
3	H	DRO C10 to C28	287.452	333.037	E3	-15.9	102	0.00
4	H	TPH C9 to C40	290.717	333.486	E3	-14.7	101	0.00
11	I	5a-Androstane	1.000	1.000		0.0	103	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.080		-2.9	104	0.00
14		C9 Nonane	0.834	0.794		4.8	104	0.00
15		C10 Decane	0.861	0.826		4.1	104	0.00
16		C12 Dodecane	0.899	0.901		-0.2	104	0.00
17		C14 Tetradecane	0.931	0.956		-2.7	104	0.00
18		C16 Hexadecane	0.968	1.004		-3.7	104	0.00
19		C18 Octadecane	0.972	1.016		-4.5	102	0.00
20		C20 Eicosane	1.002	1.055		-5.3	102	0.00
21		C22 Docosane	1.016	1.041		-2.5	101	0.00
22		C24 Tetracosane	1.028	1.051		-2.2	100	0.00
23		C26 Hexacosane	1.045	1.086		-3.9	100	0.00
24		C28 Octacosane	1.054	1.078		-2.3	100	0.00
25		C30 Triacontane	1.069	1.088		-1.8	99	0.00
26		C32 Dotriacontane	1.051	1.060		-0.9	99	0.00
27		C36 Hexatriacontane	1.113	1.082		2.8	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.001		-2.4	102	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.003		-1.4	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.003		-1.4	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141029A.B\F1J3885.D
Lab Smp Id: FSTD1001E Client Smp ID: FSTD1001E
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 29 Oct 2014 10:16 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 29 09:38:57 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	317.747 E3	-3.0	100	0.00
3	H	DRO C10 to C28	287.452	292.133 E3	-1.6	100	0.00
4	H	TPH C9 to C40	290.717	293.400 E3	-0.9	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.073	-2.2	100	0.00
14		C9 Nonane	0.834	0.777	6.8	100	0.00
15		C10 Decane	0.861	0.805	6.5	100	0.00
16		C12 Dodecane	0.899	0.885	1.6	100	0.00
17		C14 Tetradecane	0.931	0.944	-1.4	100	0.00
18		C16 Hexadecane	0.968	0.994	-2.7	100	0.00
19		C18 Octadecane	0.972	1.004	-3.3	100	0.00
20		C20 Eicosane	1.002	1.043	-4.1	100	0.00
21		C22 Docosane	1.016	1.001	1.5	100	0.00
22		C24 Tetracosane	1.028	1.036	-0.8	100	0.00
23		C26 Hexacosane	1.045	1.079	-3.3	100	0.00
24		C28 Octacosane	1.054	1.071	-1.6	100	0.00
25		C30 Triacontane	1.069	1.085	-1.5	100	0.00
26		C32 Dotriacontane	1.051	1.065	-1.3	100	0.00
27		C36 Hexatriacontane	1.113	1.077	3.2	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.986	-0.8	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.990	-0.1	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.990	-0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141029A.B\F1J3909.D
Lab Smp Id: FSTD1001G Client Smp ID: FSTD1001G
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 29 Oct 2014 18:41 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 07:54:14 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	318.657	E3	-3.3	100	0.00
3	H	DRO C10 to C28	287.452	292.263	E3	-1.7	100	0.00
4	H	TPH C9 to C40	290.717	292.048	E3	-0.5	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.073		-2.2	100	0.00
14		C9 Nonane	0.834	0.772		7.4	100	0.00
15		C10 Decane	0.861	0.805		6.5	100	0.00
16		C12 Dodecane	0.899	0.885		1.6	100	0.00
17		C14 Tetradecane	0.931	0.944		-1.4	100	0.00
18		C16 Hexadecane	0.968	0.992		-2.5	100	0.00
19		C18 Octadecane	0.972	1.002		-3.1	100	0.00
20		C20 Eicosane	1.002	1.041		-3.9	100	0.00
21		C22 Docosane	1.016	1.031		-1.5	103	0.00
22		C24 Tetracosane	1.028	1.028		0.0	99	0.00
23		C26 Hexacosane	1.045	1.065		-1.9	99	0.00
24		C28 Octacosane	1.054	1.052		0.2	98	0.00
25		C30 Triacontane	1.069	1.062		0.7	98	0.00
26		C32 Dotriacontane	1.051	1.036		1.4	97	0.00
27		C36 Hexatriacontane	1.113	1.058		4.9	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.984		-0.6	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.984		0.5	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.984		0.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141030A.B\F1J3943.D
Lab Smp Id: FSTD1001J Client Smp ID: FSTD1001J
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 30 Oct 2014 12:11 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 11:31:33 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.219 E3	1.0	97	0.00
3	H	DRO C10 to C28	287.452	281.571 E3	2.0	96	0.00
4	H	TPH C9 to C40	290.717	284.679 E3	2.1	97	0.00
11	I	5a-Androstane	1.000	1.000	0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.069	-1.8	97	0.00
14		C9 Nonane	0.834	0.795	4.7	96	0.00
15		C10 Decane	0.861	0.822	4.5	95	0.00
16		C12 Dodecane	0.899	0.895	0.4	96	0.00
17		C14 Tetradecane	0.931	0.942	-1.2	96	0.00
18		C16 Hexadecane	0.968	0.986	-1.9	96	0.00
19		C18 Octadecane	0.972	0.992	-2.1	97	0.00
20		C20 Eicosane	1.002	1.029	-2.7	97	0.00
21		C22 Docosane	1.016	1.029	-1.3	97	0.00
22		C24 Tetracosane	1.028	1.027	0.1	97	0.00
23		C26 Hexacosane	1.045	1.073	-2.7	97	0.00
24		C28 Octacosane	1.054	1.072	-1.7	97	0.00
25		C30 Triacontane	1.069	1.095	-2.4	97	0.00
26		C32 Dotriacontane	1.051	1.079	-2.7	97	0.00
27		C36 Hexatriacontane	1.113	1.130	-1.5	96	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.987	-0.9	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.997	-0.8	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.997	-0.8	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141030A.B\F1J3955.D
Lab Smp Id: FSTD1001K Client Smp ID: FSTD1001K
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 30 Oct 2014 16:23 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 08:24:11 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.745	E3	0.9	98	0.00
3	H	DRO C10 to C28	287.452	281.400	E3	2.1	96	0.00
4	H	TPH C9 to C40	290.717	284.747	E3	2.1	97	0.00
11	I	5a-Androstane	1.000	1.000		0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074		-2.3	98	0.00
14		C9 Nonane	0.834	0.827		0.8	100	0.00
15		C10 Decane	0.861	0.851		1.2	98	0.00
16		C12 Dodecane	0.899	0.921		-2.4	98	0.00
17		C14 Tetradecane	0.931	0.958		-2.9	97	0.00
18		C16 Hexadecane	0.968	0.988		-2.1	96	0.00
19		C18 Octadecane	0.972	0.987		-1.5	96	0.00
20		C20 Eicosane	1.002	1.021		-1.9	96	0.00
21		C22 Docosane	1.016	1.011		0.5	95	0.00
22		C24 Tetracosane	1.028	1.021		0.7	96	0.00
23		C26 Hexacosane	1.045	1.061		-1.5	96	0.00
24		C28 Octacosane	1.054	1.066		-1.1	96	0.00
25		C30 Triacontane	1.069	1.085		-1.5	96	0.00
26		C32 Dotriacontane	1.051	1.075		-2.3	97	0.00
27		C36 Hexatriacontane	1.113	1.131		-1.6	96	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.988		-1.0	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.000		-1.1	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.000		-1.1	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/15/2014 13:22**
Prep End Date: **10/16/2014 16:22** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79513** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | End Time: N/A | Cycles/Hour 0 | Sonicator Tuned? Yes | BalanceID: TL1 | Bath Temp1 (C): N/A | Corr Fac: N/A | Therm ID1: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79513	BatchQC		30	1	OFW140805A	1			AMC	KNL			10/16/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
LCS-79513	BatchQC		30	1	OFW140805A	1	OFW141007A	1	AMC	KNL			10/16/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
N1914-01A	03SB0170204	S	30.5	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-04A	FD04-101314	S	30.2	5	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-05A	03SS0220002	S	30.1	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-06A	03SB0220204	S	30.3	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-06AMS	03SB0220204	S	30	1	OFW140805A	1	OFW141007A	1	AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-06AMSD	03SB0220204	S	30.5	1	OFW140805A	1	OFW141007A	1	AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-09A	03SS0180002	S	30	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-10A	03SS0180204	S	30.5	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-13A	03SS0190002	S	30.5	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-14A	03SB0190204	S	30.3	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-17A	03SS0200002	S	30.3	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-18A	03SB0200204	S	30.4	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD

Logbook ID: 50.0147-09/14

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/15/2014 13:22**
Prep End Date: **10/16/2014 16:22** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79513** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DK494	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: TL1	Start Time: N/A End Time: N/A	Cycles/Hour 0	Sonicator Tuned? Yes BalanceID: TL1	Bath Temp1 (C): N/A Corr Fac: N/A	Therm ID1: N/A Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
N1914-21A	03SS0210002	S	30.5	5	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-22A	03SB0210204	S	30.1	1	OFW140805A	1			AMC	KNL	10/31/14	01	10/16/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD

Analisa M Caruso 10/16/2014 Devin M Pierel 10/17/2014
Analyst Reviewed Date Manager Reviewed Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

DMP 10/17/14

Logbook ID: 50.0147-09/14

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: 10/17/2014 10:27 | Prep Code: TPH_S_PR | Prep Type: SONC/SW3550B | Prep Factor Units: mL / g

Prep End Date: 10/20/2014 08:36

Prep Batch ID: 79553 | Technician: Kristin N Lewis

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DK494	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: TL1	Start Time: N/A	Cycles/Hour 0	Sonicator Tuned?Yes	Bath Temp1 (C): N/A	Therm ID1: N/A
	End Time: N/A		BalanceID: TL1	Corr Fac: N/A	Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79553	BatchQC		30	1	OFW141016A	1			DMP	AMC			10/20/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
LCS-79553	BatchQC		30	1	OFW141016A	1	OFW141007A	1	DMP	AMC			10/20/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
N1914-26A	FD05-101414	S	30.2	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-27A	03SS0230002	S	30	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-28A	03SB0230204	S	30.1	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-28AMS	03SB0230204	S	30	1	OFW141016A	1	OFW141007A	1	DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-28AMSD	03SB0230204	S	30	1	OFW141016A	1	OFW141007A	1	DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-32A	03SS0240002	S	30.1	5	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-33A	03SB0240204	S	30	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-36A	03SS0250002	S	30.3	5	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-37A	03SB0250204	S	30.2	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-40A	03SS0260002	S	30.3	5	OFW141016A	1			DMP	AMC	10/31/14	01	10/20/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD

Anatisa M Caruso 10/20/2014
Analyst Reviewed Date

Devin M Pierel 10/20/2014
Manager Reviewed Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-10/14

AC 10/20/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/20/2014 14:50**

Prep End Date: **10/21/2014 13:52** Prep Code: **TPH_W_PR** Prep Type: **SEPF/SW3510C** Prep Factor Units: mL / mL

Prep Batch ID: **79593** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DK494	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: N/A	Start Time: N/A	Cycles/Hour 0	Sonicator Tuned?N/A	Bath Temp1 (C): N/A	Therm ID1: N/A
	End Time: N/A		BalanceID: N/A	Corr Fac: N/A	Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79593	BatchQC		1000	1	OFW141016A	1			DMP	AMC			10/21/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
LCS-79593	BatchQC		1000	1	OFW141016A	1	OFW141007A	1	DMP	AMC			10/21/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
LCSD-79593	BatchQC		1000	1	OFW141016A	1	OFW141007A	1	DMP	AMC			10/21/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
N1914-31B	RB02-101414	A	1000	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/21/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
																			DoD
N1931-42B	RB03-101414	A	1000	1	OFW141016A	1			DMP	AMC	11/03/14	01	10/21/14	AMC	R7	7	☐	☑	N/A / Turbo Vap 1
																			DoD

Analisa M Caruso 10/21/2014

Analyst Reviewed Date

Devin M Pierel 10/22/2014

Manager Reviewed Date

Comments:

A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

IAC 10/22/2014

N1914

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/22/2014 07:27**

Prep End Date: **10/23/2014 12:33** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**

Prep Batch ID: **79626** Technician: **Kristin N Lewis**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | Bath Temp1 (C): N/A | Therm ID1: N/A
End Time: N/A | BalanceID: TL1 | Corr Fac: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79626	BatchQC		30	1	OFW141016A	1			DMP	AMC			10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1
LCS-79626	BatchQC		30	1	OFW141016A	1	OFW141007A	1	DMP	AMC			10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1
LCSD-79626	BatchQC		30	1	OFW141016A	1	OFW141007A	1	DMP	AMC			10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1
N1914-02A	03SB0170406	S	30.4	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-03A	03SB0170610	S	30.2	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-07A	03SB0220406	S	30.3	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-08A	03SB0220610	S	30.4	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-11A	03SB0180406	S	30	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-12A	03SB0180610	S	30.1	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-15A	03SB0190406	S	30.2	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-16A	03SB0190610	S	30.1	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-19A	03SB0200406	S	30.3	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-20A	03SB0200610	S	30.3	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-23A	03SB0210406	S	30.3	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD

Logbook ID: 50.014/-10/14

IAC 10/23/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/22/2014 07:27**
Prep End Date: **10/23/2014 12:33** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79626** Technician: **Kristin N Lewis**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DK494 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | BalanceID: TL1 | Bath Temp1 (C): N/A | Corr Fac: N/A | Therm ID1: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
N1914-24A	03SB0210610	S	30.3	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-29A	03SB0230406	S	30.4	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-30A	03SB0230610	S	30	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-34A	03SB0240406	S	30.2	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-35A	03SB0240610	S	30.2	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1914-38A	03SB0250406	S	30.1	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1914-39A	03SB0250610	S	30	1	OFW141016A	1			DMP	AMC	10/31/14	01	10/23/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD

Analisa M Caruso 10/23/2014
Analyst Reviewed Date

Devin M Pierel 10/23/2014
Manager Reviewed Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-10/14

AC 10/23/2014

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/28/2014 07:46**
Prep End Date: **10/31/2014 15:00** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79725** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DL501 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | BalanceID: TL1 | Bath Temp1 (C): N/A | Corr Fac: N/A | Therm ID1: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79725	BatchQC		30	1	OFW141016A	1			TM	DMP			10/31/14	AMC	R21		☐	☐	Sonicator 1 / Turbo Vap 1
LCS-79725	BatchQC		30	1	OFW141016A	1	OFW141007A	1	TM	DMP			10/31/14	AMC	R21		☐	☐	Sonicator 1 / Turbo Vap 1
N1914-05A	03SS0220002	S	30.4	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 2 / Turbo Vap 1
																			DoD
N1914-09A	03SS0180002	S	30.5	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 2 / Turbo Vap 1
																			DoD
N1914-13A	03SS0190002	S	30.5	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 3 / Turbo Vap 1
																			DoD
N1914-17A	03SS0200002	S	30	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 3 / Turbo Vap 1
																			DoD
N1931-41A	03SB0350610	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 5 / Turbo Vap 1
																			DoD
LCSD-79725	BatchQC		30	1									10/31/14	AMC	R21		☐	☐	Sonicator 5 / Turbo Vap 1

Analisa M Caruso 10/31/2014
Analyst Reviewed Date

Devin M Pierel 11/03/2014
Manager Reviewed Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

DMP 11/3/14

Logbook ID: 50.0147-10/14

Data File: \\Avogadro\Organics\F1.I\141030A.B\F1J3949.D
Lab Smp Id: N1914-05ARE BN: 79725 Client Smp ID: 03SS0220002RE
Misc : | TPH 5X DIL Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 30 Oct 2014 14:17 Operator: TM
ALS Vial : 36 Sample Multiplier: 1

Quant Time: Nov 04 08:26:40 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Compound	R.T.	Response	Conc Units
Internal Standards			
11) I 5a-Androstane	6.75	12152281	40.000 ug/mL
System Monitoring Compounds			
2) S ortho-Terphenyl	6.27	3983319	12.915 ug/mL
Spiked Amount 100.000		Recovery =	12.91%
Target Compounds			
4) H TPH C9 to C40	1.30	1914681426	6586.067 ug/mL
Integration Range:			1.30 to 12.70 minutes
Raw Range Area:		2078015087	
Corrected Range Area (IS,SS):		2061879487	
Instrument Blank Area (F1J3944):		147198061	

Corrected Range Area = Raw Range Area - Internal and Surrogate Area
Reported Area = Corrected Range Area - Instrument Blank Area

(f)=RT Delta > 1/2 Window (m)=manual int.

$$\frac{1914681426 \times 5}{290717 \pm 304 \pm 0.9697} = 1117 \text{ mg/kg}$$

TPH (C9-C40) = 1110 mg/kg

TETRA TECH INTERNAL CORRESPONDENCE

TO: S. ANDERSON **DATE:** NOVEMBER 20, 2014

FROM: EDWARD SEDLMYER **COPIES:** DV FILE

SUBJECT: ORGANIC DATA VALIDATION – TPH (C9-C40) and GRO
FRMR NCBC DAVISVILLE, CTO WE01
SDG N1931

SAMPLES:

41/Soil/TPH (C9-C40)/GRO

03SB0260204	03SB0260406	03SB0260610
03SB0270204	03SB0270406	03SB0270610
03SB0280204	03SB0280406	03SB0280610
03SB0290204	03SB0290406	03SB0290610
03SB0300204	03SB0300406	03SB0300610
03SB0310204	03SB0310406	03SB0310610
03SB0320204	03SB0320406	03SB0320610
03SB0330002	03SB0330204	03SB0330406
03SB0330610	03SB0340204	03SB0340406
03SB0340610	03SB0350204	03SB0350406
03SB0350610	03SS0270002	03SS0280002
03SS0290002	03SS0300002	03SS0310002
03SS0320002	03SS0340002	03SS0350002
FD06-101414	FD07-101414	

1/Aqueous/ TPH (C9-C40)/GRO

RB03-101414

OVERVIEW

The sample set for FRMR NCBC Davisville, CTO WE01, SDG N1931 consisted of forty-one (41) soil samples and one (1) rinse blank. The samples were analyzed for total petroleum hydrocarbons (TPH) (C9-C40) and gasoline range organics (GRO). Two (2) field duplicate sample pairs were included in this sample delivery group (SDG): 03SB0270204 / FD06-101414 and 03SB0320204 / FD07-101414.

The samples were collected by Tetra Tech on October 14, 2014 and analyzed by Spectrum Analytical, Inc. for all fractions. All analyses were conducted in accordance with EPA SW-846 Method 8015D analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Blank Results
* • Initial and Continuing Calibration
* • Surrogate Spike Recoveries
* • Internal Standards
• Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
* • Matrix Spike / Matrix Spike Duplicate (MS/MSD) Results

* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

LCS/LCSD

The LCS/LCSD relative percent difference (RPD) for TPH (C9-C40) exceeded the quality control limit for batch 79725. No action was taken on this basis because the percent recoveries for the LCS and LCSD were acceptable.

ADDITIONAL COMMENTS

Sample 03SS0280002 was analyzed at a five-fold dilution due to a possible matrix interference.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	03SB0260204						03SB0260406					
SDG: N1931	LAB_ID	N1931-01A						N1931-02A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	90.2			90.2			96.5			96.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					690	U					730	U	
TPH (C09-C40)		12						11					

PROJ_NO: 01813	NSAMPLE	03SB0260610						03SB0270204					
SDG: N1931	LAB_ID	N1931-03A						N1931-10A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			93.9			93.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					700	U					1000	U	
TPH (C09-C40)		13						14					

PROJ_NO: 01813	NSAMPLE	03SB0270406						03SB0270610					
SDG: N1931	LAB_ID	N1931-11A						N1931-12A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.6			92.6			92.5			92.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					820	U					750	U	
TPH (C09-C40)		11						14					

PROJ_NO: 01813	NSAMPLE	03SB0280204						03SB0280406					
SDG: N1931	LAB_ID	N1931-05A						N1931-07A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.7			96.7			93.2			93.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					650	U					620	U	
TPH (C09-C40)		13						15					

PROJ_NO: 01813	NSAMPLE	03SB0280610						03SB0290204					
SDG: N1931	LAB_ID	N1931-08A						N1931-14A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.3			93.3			94.3			94.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					740	U					760	U	
TPH (C09-C40)		35						16					

PROJ_NO: 01813	NSAMPLE	03SB0290406						03SB0290610					
SDG: N1931	LAB_ID	N1931-15A						N1931-16A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.5			93.5			90.1			90.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					640	U	
TPH (C09-C40)		12						11					

PROJ_NO: 01813	NSAMPLE	03SB0300204						03SB0300406					
SDG: N1931	LAB_ID	N1931-18A						N1931-19A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	91.1			91.1			94.4			94.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					660	U					620	U	
TPH (C09-C40)		15						28					

PROJ_NO: 01813	NSAMPLE	03SB0300610						03SB0310204					
SDG: N1931	LAB_ID	N1931-20A						N1931-22A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.3			95.3			93.9			93.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					690	U					680	U	
TPH (C09-C40)		27						1.8	U				

PROJ_NO: 01813	NSAMPLE	03SB0310406						03SB0310610					
SDG: N1931	LAB_ID	N1931-23A						N1931-24A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.8			94.8			91.3			91.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					670	U					680	U	
TPH (C09-C40)		1.8	U					1.9	U				

PROJ_NO: 01813	NSAMPLE	03SB0320204						03SB0320406					
SDG: N1931	LAB_ID	N1931-31A						N1931-32A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.6			94.6			90.8			90.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					660	U					680	U	
TPH (C09-C40)		9.7						13					

PROJ_NO: 01813	NSAMPLE	03SB0320610						03SB0330002					
SDG: N1931	LAB_ID	N1931-33A						N1931-25A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	91.8			91.8			95.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					790	U					580	U	
TPH (C09-C40)		10						22					

PROJ_NO: 01813	NSAMPLE	03SB0330204						03SB0330406					
SDG: N1931	LAB_ID	N1931-27A						N1931-28A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	78.8			78.8			97.3			97.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					920	U					660	U	
TPH (C09-C40)		2.1	U					1.7	U				

PROJ_NO: 01813	NSAMPLE	03SB0330610						03SB0340204					
SDG: N1931	LAB_ID	N1931-29A						N1931-35A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	80.9			80.9			96.0			96.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					890	U					600	U	
TPH (C09-C40)		10						7.4					

PROJ_NO: 01813	NSAMPLE	03SB0340406						03SB0340610					
SDG: N1931	LAB_ID	N1931-36A						N1931-37A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	95.5			95.5			92.2			92.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					670	U					710	U	
TPH (C09-C40)		13						11					

PROJ_NO: 01813	NSAMPLE	03SB0350204						03SB0350406					
SDG: N1931	LAB_ID	N1931-39A						N1931-40A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	98.1			98.1			93.1			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					750	U					680	U	
TPH (C09-C40)		8.9						1.8	U				

PROJ_NO: 01813	NSAMPLE	03SB0350610						03SS0270002					
SDG: N1931	LAB_ID	N1931-41A						N1931-09A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.6			92.6			94.9			94.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					680	U	
TPH (C09-C40)		110						110					

PROJ_NO: 01813	NSAMPLE	03SS0280002						03SS0290002					
SDG: N1931	LAB_ID	N1931-04A						N1931-13A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	94.5			94.5			95.5			95.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					710	U					700	U	
TPH (C09-C40)		180						170					

PROJ_NO: 01813	NSAMPLE	03SS0300002						03SS0310002					
SDG: N1931	LAB_ID	N1931-17A						N1931-21A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	93.3			93.3			94.9			94.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					730	U					630	U	
TPH (C09-C40)		330						26					

PROJ_NO: 01813	NSAMPLE	03SS0320002						03SS0340002					
SDG: N1931	LAB_ID	N1931-30A						N1931-34A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	92.8			92.8			94.4			94.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					730	U					660	U	
TPH (C09-C40)		53						130					

PROJ_NO: 01813	NSAMPLE	03SS0350002						FD06-101414					
SDG: N1931	LAB_ID	N1931-38A						N1931-06A					
FRACTION: PET	SAMP_DATE	10/14/2014						10/14/2014					
MEDIA: SOIL	QC_TYPE	NM						NM					
	UNITS	MG/KG			UG/KG			MG/KG			UG/KG		
	PCT_SOLIDS	96.9			96.9			94.8			94.8		
	DUP_OF							03SB0270204			03SB0270204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					590	U					980	U	
TPH (C09-C40)		17						14					

PROJ_NO: 01813	NSAMPLE	FD07-101414					
SDG: N1931	LAB_ID	N1931-26A					
FRACTION: PET	SAMP_DATE	10/14/2014					
MEDIA: SOIL	QC_TYPE	NM					
	UNITS	MG/KG			UG/KG		
	PCT_SOLIDS	94.4			94.4		
	DUP_OF	03SB0320204			03SB0320204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					660	U	
TPH (C09-C40)		7.8					

PROJ_NO: 01813	NSAMPLE	RB03-101414					
SDG: N1931	LAB_ID	N1931-42A					
FRACTION: PET	SAMP_DATE	10/14/2014					
MEDIA: WATER	QC_TYPE	NM					
	UNITS	MG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U	
TPH (C09-C40)		0.05	U				

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0260204
Lab ID: N1931-01
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/25/2014 10:41	79687
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/25/2014 10:41	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0260406
Lab ID: N1931-02
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/25/2014 11:04	79687
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/25/2014 11:04	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0260610
Lab ID: N1931-03
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/25/2014 11:25	79687
Surrogate: Bromofluorobenzene	100			79-118	%REC	1	10/25/2014 11:25	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0280204
Lab ID: N1931-05
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/25/2014 12:17	79687
Surrogate: Bromofluorobenzene	97.3			79-118	%REC	1	10/25/2014 12:17	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0280406
Lab ID: N1931-07
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						**GRO_S**		
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/25/2014 13:01	79687
Surrogate: Bromofluorobenzene	96.7			79-118	%REC	1	10/25/2014 13:01	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0280610
Lab ID: N1931-08

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/25/2014 13:22	79687
Surrogate: Bromofluorobenzene	98.0			79-118	%REC	1	10/25/2014 13:22	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0270204
Lab ID: N1931-10
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2600 ^	2600	ug/Kg	1	10/25/2014 14:16	79687
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/25/2014 14:16	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0270406
Lab ID: N1931-11
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/25/2014 14:38	79687
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/25/2014 14:38	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0270610
Lab ID: N1931-12
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID					GRO_S			
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/25/2014 14:59	79687
Surrogate: Bromofluorobenzene	96.5			79-118	%REC	1	10/25/2014 14:59	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0290204
Lab ID: N1931-14
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/25/2014 15:49	79687
Surrogate: Bromofluorobenzene	104			79-118	%REC	1	10/25/2014 15:49	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0290406
Lab ID: N1931-15
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/25/2014 16:11	79687
Surrogate: Bromofluorobenzene	88.9			79-118	%REC	1	10/25/2014 16:11	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0290610
Lab ID: N1931-16
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/25/2014 16:36	79687
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/25/2014 16:36	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0300204
Lab ID: N1931-18
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/25/2014 17:28	79687
Surrogate: Bromofluorobenzene	93.2			79-118	%REC	1	10/25/2014 17:28	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0300406
Lab ID: N1931-19
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/25/2014 17:50	79687
Surrogate: Bromofluorobenzene	91.4			79-118	%REC	1	10/25/2014 17:50	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0300610
Lab ID: N1931-20
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/25/2014 18:10	79687
Surrogate: Bromofluorobenzene	80.2			79-118	%REC	1	10/25/2014 18:10	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0310204
Lab ID: N1931-22
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 9:30	79711
Surrogate: Bromofluorobenzene	95.6			79-118	%REC	1	10/27/2014 9:30	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0310406
Lab ID: N1931-23

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 9:56	79711
Surrogate: Bromofluorobenzene	95.5			79-118	%REC	1	10/27/2014 9:56	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0310610
Lab ID: N1931-24
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 10:18	79711
Surrogate: Bromofluorobenzene	89.5			79-118	%REC	1	10/27/2014 10:18	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0320204 Project: CED Area, WE01-Davisville
Lab ID: N1931-31 Collection Date: 10/14/14 14:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 13:04	79711
Surrogate: Bromofluorobenzene	99.1			79-118	%REC	1	10/27/2014 13:04	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0320406
Lab ID: N1931-32
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 13:25	79711
Surrogate: Bromofluorobenzene	97.0			79-118	%REC	1	10/27/2014 13:25	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0320610
Lab ID: N1931-33
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2000 ^	2000	ug/Kg	1	10/27/2014 13:47	79711
Surrogate: Bromofluorobenzene	106			79-118	%REC	1	10/27/2014 13:47	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330204
Lab ID: N1931-27
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		2300 ^	2300	ug/Kg	1	10/27/2014 11:31	79711
Surrogate: Bromofluorobenzene	87.7			79-118	%REC	1	10/27/2014 11:31	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330406
Lab ID: N1931-28
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/27/2014 11:54	79711
Surrogate: Bromofluorobenzene	95.6			79-118	%REC	1	10/27/2014 11:54	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330610
Lab ID: N1931-29
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2200 ^	2200	ug/Kg	1	10/27/2014 12:18	79711
Surrogate: Bromofluorobenzene	95.0			79-118	%REC	1	10/27/2014 12:18	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0340204
Lab ID: N1931-35
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							**GRO_S**	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/27/2014 14:34	79711
Surrogate: Bromofluorobenzene	95.3			79-118	%REC	1	10/27/2014 14:34	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0340406
Lab ID: N1931-36
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 15:00	79711
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/27/2014 15:00	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0340610
Lab ID: N1931-37
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/27/2014 15:21	79711
Surrogate: Bromofluorobenzene	97.5			79-118	%REC	1	10/27/2014 15:21	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0350204
Lab ID: N1931-39
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1900 ^	1900	ug/Kg	1	10/27/2014 16:19	79711
Surrogate: Bromofluorobenzene	107			79-118	%REC	1	10/27/2014 16:19	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0350406
Lab ID: N1931-40
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 16:59	79711
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/27/2014 16:59	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0350610
Lab ID: N1931-41

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/27/2014 17:21	79711
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/27/2014 17:21	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0270002
Lab ID: N1931-09
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/25/2014 13:55	79687
Surrogate: Bromofluorobenzene	108			79-118	%REC	1	10/25/2014 13:55	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0280002
Lab ID: N1931-04
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/25/2014 11:54	79687
Surrogate: Bromofluorobenzene	98.7			79-118	%REC	1	10/25/2014 11:54	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0290002
Lab ID: N1931-13
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/25/2014 15:20	79687
Surrogate: Bromofluorobenzene	100			79-118	%REC	1	10/25/2014 15:20	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0300002
Lab ID: N1931-17

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/25/2014 17:02	79687
Surrogate: Bromofluorobenzene	102			79-118	%REC	1	10/25/2014 17:02	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0310002
Lab ID: N1931-21
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1600 ^	1600	ug/Kg	1	10/25/2014 18:34	79687
Surrogate: Bromofluorobenzene	97.6			79-118	%REC	1	10/25/2014 18:34	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0320002
Lab ID: N1931-30
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1800 ^	1800	ug/Kg	1	10/27/2014 12:40	79711
Surrogate: Bromofluorobenzene	97.0			79-118	%REC	1	10/27/2014 12:40	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330002
Lab ID: N1931-25

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_S	
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/27/2014 10:41	79711
Surrogate: Bromofluorobenzene	88.2			79-118	%REC	1	10/27/2014 10:41	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0340002 Project: CED Area, WE01-Davisville
Lab ID: N1931-34 Collection Date: 10/14/14 14:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 14:08	79711
Surrogate: Bromofluorobenzene	94.5			79-118	%REC	1	10/27/2014 14:08	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0350002
Lab ID: N1931-38
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1500 ^	1500	ug/Kg	1	10/27/2014 15:45	79711
Surrogate: Bromofluorobenzene	85.9			79-118	%REC	1	10/27/2014 15:45	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD06-101414
Lab ID: N1931-06
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		2500 ^	2500	ug/Kg	1	10/25/2014 12:39	79687
Surrogate: Bromofluorobenzene	103			79-118	%REC	1	10/25/2014 12:39	79687

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD07-101414
Lab ID: N1931-26
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_S		
Gasoline Range Organics	ND		1700 ^	1700	ug/Kg	1	10/27/2014 11:05	79711
Surrogate: Bromofluorobenzene	101			79-118	%REC	1	10/27/2014 11:05	79711

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB03-101414
Lab ID: N1931-42

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 16:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/21/2014 11:40	79616
Surrogate: Bromofluorobenzene	95.4			87-112	%REC	1	10/21/2014 11:40	79616

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/06/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0260204
Lab ID: N1931-01
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	12		7.7 ^	7.7	mg/Kg	1	10/31/2014 12:54	79723
Surrogate: ortho-Terphenyl	80.9			50-150	%REC	1	10/31/2014 12:54	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/06/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0260406
Lab ID: N1931-02
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	11		7.1 ^	7.1	mg/Kg	1	10/31/2014 13:15	79723
Surrogate: ortho-Terphenyl	97.2			50-150	%REC	1	10/31/2014 13:15	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0260610
Lab ID: N1931-03

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	13		7.5 ^	7.5	mg/Kg	1	10/31/2014 13:36	79723
Surrogate: ortho-Terphenyl	98.7			50-150	%REC	1	10/31/2014 13:36	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0270204
Lab ID: N1931-10
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	14		7.4 ^	7.4	mg/Kg	1	10/31/2014 15:00	79723
Surrogate: ortho-Terphenyl	78.8			50-150	%REC	1	10/31/2014 15:00	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0270406
Lab ID: N1931-11

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	11		7.5 ^	7.5	mg/Kg	1	10/31/2014 16:24	79723
Surrogate: ortho-Terphenyl	77.8			50-150	%REC	1	10/31/2014 16:24	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0270610
Lab ID: N1931-12

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	14		7.6 ^	7.6	mg/Kg	1	10/31/2014 16:45	79723
Surrogate: ortho-Terphenyl	88.3			50-150	%REC	1	10/31/2014 16:45	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0280204
Lab ID: N1931-05
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	13		7.2 ^	7.2	mg/Kg	1	10/31/2014 13:57	79723
Surrogate: ortho-Terphenyl	79.3			50-150	%REC	1	10/31/2014 13:57	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0280406
Lab ID: N1931-07
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	15		7.4 ^	7.4	mg/Kg	1	10/31/2014 14:39	79723
Surrogate: ortho-Terphenyl	96.8			50-150	%REC	1	10/31/2014 14:39	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0280610
Lab ID: N1931-08

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	35		7.5 ^	7.5	mg/Kg	1	10/31/2014 20:56	79723
Surrogate: ortho-Terphenyl	60.6			50-150	%REC	1	10/31/2014 20:56	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/06/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0290204
Lab ID: N1931-14
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	16		7.3 ^	7.3	mg/Kg	1	10/31/2014 17:06	79723
Surrogate: ortho-Terphenyl	91.4			50-150	%REC	1	10/31/2014 17:06	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0290406
Lab ID: N1931-15

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	12		7.4 ^	7.4	mg/Kg	1	10/31/2014 17:27	79723
Surrogate: ortho-Terphenyl	87.6			50-150	%REC	1	10/31/2014 17:27	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0290610
Lab ID: N1931-16

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	11		7.8 ^	7.8	mg/Kg	1	10/31/2014 17:48	79723
Surrogate: ortho-Terphenyl	96.4			50-150	%REC	1	10/31/2014 17:48	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0300204
Lab ID: N1931-18
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	15		7.7 ^	7.7	mg/Kg	1	10/31/2014 18:09	79723
Surrogate: ortho-Terphenyl	96.1			50-150	%REC	1	10/31/2014 18:09	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0300406
Lab ID: N1931-19
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	28		7.3 ^	7.3	mg/Kg	1	10/31/2014 18:30	79723
Surrogate: ortho-Terphenyl	130			50-150	%REC	1	10/31/2014 18:30	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0300610
Lab ID: N1931-20
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	27		7.2 ^	7.2	mg/Kg	1	10/31/2014 18:51	79723
Surrogate: ortho-Terphenyl	93.3			50-150	%REC	1	10/31/2014 18:51	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0310204
Lab ID: N1931-22

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.4 ^	7.4	mg/Kg	1	11/04/2014 10:36	79724
Surrogate: ortho-Terphenyl	86.4			50-150	%REC	1	11/04/2014 10:36	79724

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0310406
Lab ID: N1931-23
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.3 ^	7.3	mg/Kg	1	11/04/2014 10:57	79724
Surrogate: ortho-Terphenyl	79.1			50-150	%REC	1	11/04/2014 10:57	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0310610
Lab ID: N1931-24

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.6 ^	7.6	mg/Kg	1	11/04/2014 11:19	79724
Surrogate: ortho-Terphenyl	89.1			50-150	%REC	1	11/04/2014 11:19	79724

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/06/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0320204
Lab ID: N1931-31
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_S		
Extractable Total Petroleum Hydrocarbon	9.7		7.4 ^	7.4	mg/Kg	1	11/04/2014 14:29	79724
Surrogate: ortho-Terphenyl	91.3			50-150	%REC	1	11/04/2014 14:29	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0320406 **Project:** CED Area, WE01-Davisville
Lab ID: N1931-32 **Collection Date:** 10/14/14 14:15

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	13		7.7 ^	7.7	mg/Kg	1	11/04/2014 14:50	79724
Surrogate: ortho-Terphenyl	76.3			50-150	%REC	1	11/04/2014 14:50	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0320610
Lab ID: N1931-33
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	10		7.6 ^	7.6	mg/Kg	1	11/04/2014 15:11	79724
Surrogate: ortho-Terphenyl	65.6			50-150	%REC	1	11/04/2014 15:11	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330204
Lab ID: N1931-27
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		8.7 ^	8.7	mg/Kg	1	11/04/2014 12:22	79724
Surrogate: ortho-Terphenyl	79.7			50-150	%REC	1	11/04/2014 12:22	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330406
Lab ID: N1931-28
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.1 ^	7.1	mg/Kg	1	11/04/2014 12:44	79724
Surrogate: ortho-Terphenyl	74.9			50-150	%REC	1	11/04/2014 12:44	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330610 **Project:** CED Area, WE01-Davisville
Lab ID: N1931-29 **Collection Date:** 10/14/14 13:45

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	10		8.5 ^	8.5	mg/Kg	1	11/04/2014 14:08	79724
Surrogate: ortho-Terphenyl	78.6			50-150	%REC	1	11/04/2014 14:08	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0340204 **Project:** CED Area, WE01-Davisville
Lab ID: N1931-35 **Collection Date:** 10/14/14 14:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	7.4		7.2 ^	7.2	mg/Kg	1	11/04/2014 15:32	79724
Surrogate: ortho-Terphenyl	73.5			50-150	%REC	1	11/04/2014 15:32	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0340406
Lab ID: N1931-36
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	13		7.2 ^	7.2	mg/Kg	1	11/04/2014 15:53	79724
Surrogate: ortho-Terphenyl	87.2			50-150	%REC	1	11/04/2014 15:53	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0340610
Lab ID: N1931-37
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	11		7.6 ^	7.6	mg/Kg	1	11/04/2014 16:14	79724
Surrogate: ortho-Terphenyl	84.2			50-150	%REC	1	11/04/2014 16:14	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0350204
Lab ID: N1931-39

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	8.9		7.1 ^	7.1	mg/Kg	1	11/04/2014 18:20	79724
Surrogate: ortho-Terphenyl	77.4			50-150	%REC	1	11/04/2014 18:20	79724

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0350406
Lab ID: N1931-40
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:35

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	ND		7.5 ^	7.5	mg/Kg	1	11/04/2014 18:41	79724
Surrogate: ortho-Terphenyl	65.2			50-150	%REC	1	11/04/2014 18:41	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/06/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0350610
Lab ID: N1931-41

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:40

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	110		7.5 ^	7.5	mg/Kg	1	10/30/2014 15:41	79725
Surrogate: ortho-Terphenyl	62.7			50-150	%REC	1	10/30/2014 15:41	79725

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0270002
Lab ID: N1931-09
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	110		7.3 ^	7.3	mg/Kg	1	10/31/2014 21:17	79723
Surrogate: ortho-Terphenyl	77.0			50-150	%REC	1	10/31/2014 21:17	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0280002
Lab ID: N1931-04

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 10:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_S**			
Extractable Total Petroleum Hydrocarbon	180		37 ^	37	mg/Kg	5	10/31/2014 20:35	79723
Surrogate: ortho-Terphenyl	78.8			50-150	%REC	5	10/31/2014 20:35	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0290002
Lab ID: N1931-13

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 11:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	170		7.3 ^	7.3	mg/Kg	1	10/31/2014 22:20	79723
Surrogate: ortho-Terphenyl	86.2			50-150	%REC	1	10/31/2014 22:20	79723

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0300002 **Project:** CED Area, WE01-Davisville
Lab ID: N1931-17 **Collection Date:** 10/14/14 12:20

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	330		7.5 ^	7.5	mg/Kg	1	10/31/2014 22:41	79723
Surrogate: ortho-Terphenyl	78.5			50-150	%REC	1	10/31/2014 22:41	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/06/2014

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0310002
Lab ID: N1931-21

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 12:55

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	26		7.3 ^	7.3	mg/Kg	1	11/04/2014 19:02	79724
Surrogate: ortho-Terphenyl	93.4			50-150	%REC	1	11/04/2014 19:02	79724

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0320002
Lab ID: N1931-30
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	53		7.4 ^	7.4	mg/Kg	1	11/04/2014 19:23	79724
Surrogate: ortho-Terphenyl	70.5			50-150	%REC	1	11/04/2014 19:23	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SB0330002
Lab ID: N1931-25

Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 13:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	22		7.4 ^	7.4	mg/Kg	1	11/04/2014 11:40	79724
Surrogate: ortho-Terphenyl	86.2			50-150	%REC	1	11/04/2014 11:40	79724

Qualifiers:

ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0340002
Lab ID: N1931-34
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 14:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	130		7.4 ^	7.4	mg/Kg	1	11/04/2014 20:26	79724
Surrogate: ortho-Terphenyl	75.7			50-150	%REC	1	11/04/2014 20:26	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: 03SS0350002
Lab ID: N1931-38
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 15:25

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	17		7.1 ^	7.1	mg/Kg	1	11/04/2014 16:35	79724
Surrogate: ortho-Terphenyl	82.9			50-150	%REC	1	11/04/2014 16:35	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/06/2014

Client: Tetra Tech, Inc.
Client Sample ID: FD06-101414
Lab ID: N1931-06
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	14		7.3 ^	7.3	mg/Kg	1	10/31/2014 14:18	79723
Surrogate: ortho-Terphenyl	103			50-150	%REC	1	10/31/2014 14:18	79723

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: FD07-101414
Lab ID: N1931-26
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_S**		
Extractable Total Petroleum Hydrocarbon	7.8		7.4 ^	7.4	mg/Kg	1	11/04/2014 12:01	79724
Surrogate: ortho-Terphenyl	68.7			50-150	%REC	1	11/04/2014 12:01	79724

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: RB03-101414
Lab ID: N1931-42
Project: CED Area, WE01-Davisville
Collection Date: 10/14/14 16:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	10/22/2014 13:24	79593
Surrogate: ortho-Terphenyl	69.5			50-150	%REC	1	10/22/2014 13:24	79593

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Sadlowski Date: 11/20/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: ERM NCBC Davisville SDG: N1931

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Hallgren Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sedlyn Date: 1/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlmyer Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FMR NCBC Davisville SDG: N1931

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Sedlyar Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlyar Date: 11/20/14

See DV Report

EPA NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sedlazo

Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Sadlon Date: 1/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Sadlyn Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sedlyn Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Hedlund

Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FMR NCBC Davisville SDG: N1931

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlazo Date: 4/20/19

EPA-NE - Data Validation Worksheet See DV Report

Case: FMR NCBC Davisville SDG: N1931

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: Edward Sedlyn Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Sadlon Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Kelly Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4
2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4
4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sedlyn Date: 1/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlay Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria							
		Fluoranthene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1,2,2-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Nedley Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NEBC Danbville SDG: N1931

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward Sedlmyer Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedbye Date: 1/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNCBC Davisville SDG: N1931

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Hedlund Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Hedbyn Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. Y N NA

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? Y N

Were acceptable GPC Calibration Verifications performed at the correct frequency? Y N

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? Y N

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sadlyn Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Ludlow Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Hedlund Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Sedlazo Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sedlyar Date: 1/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMRNC@CDavisville SDG: N1931

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sedlazo Date: 11/20/14

Sec DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Sedlyn Date: 1/20/19

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Hedbye Date: 11/20/14

See DV Report

EPA NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? Y N

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? Y N

Validator: Edward Sedlyar Date: 1/20/14

EPA-NE - Data Validation Worksheet See DV Report

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sudlow Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sullivan Date: 11/20/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: N1931

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? Y N

If no, list sample numbers

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlyn Date: 11/20/14

See DU Report

EPA-NE - Data Validation Worksheet

Case: FRMR NCBC Davisville SDG: JV1931

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Sadlyn Date: 1/20/14

APPENDIX D

SUPPORT DOCUMENTATION

FORMER NCBC DAVISVILLE
SOIL DATA
N1931

FRACTION	CHEMICAL	03SB0270204	UNITS	FD06-101414	RPD	D
PET	TPH (C09-C40)	14	MG/KG	14	0.00	0.00

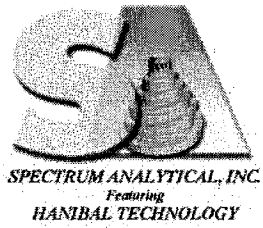
Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

FORMER NCBC DAVISVILLE
SOIL DATA
N1931

FRACTION	CHEMICAL	03SB0320204	UNITS	FD07-101414	RPD	D
PET	TPH (C09-C40)	9.7	MG/KG	7.8	21.71	1.90

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Report Date:
10-Nov-14 10:04



☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Attn: Amy Thomson

Work Order: N1931
Project : CED Area, WE01-Davisville
Project #:

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N1931-01	03SB0260204	Soil	14-Oct-14 10:10	15-Oct-14 12:20
N1931-02	03SB0260406	Soil	14-Oct-14 10:15	15-Oct-14 12:20
N1931-03	03SB0260610	Soil	14-Oct-14 10:20	15-Oct-14 12:20
N1931-04	03SS0280002	Soil	14-Oct-14 10:30	15-Oct-14 12:20
N1931-05	03SB0280204	Soil	14-Oct-14 10:35	15-Oct-14 12:20
N1931-06	FD06-101414	Soil	14-Oct-14 00:00	15-Oct-14 12:20
N1931-07	03SB0280406	Soil	14-Oct-14 10:40	15-Oct-14 12:20
N1931-08	03SB0280610	Soil	14-Oct-14 10:45	15-Oct-14 12:20
N1931-09	03SS0270002	Soil	14-Oct-14 10:55	15-Oct-14 12:20
N1931-10	03SB0270204	Soil	14-Oct-14 11:00	15-Oct-14 12:20
N1931-11	03SB0270406	Soil	14-Oct-14 11:05	15-Oct-14 12:20
N1931-12	03SB0270610	Soil	14-Oct-14 11:10	15-Oct-14 12:20
N1931-13	03SS0290002	Soil	14-Oct-14 11:50	15-Oct-14 12:20
N1931-14	03SB0290204	Soil	14-Oct-14 11:55	15-Oct-14 12:20
N1931-15	03SB0290406	Soil	14-Oct-14 12:00	15-Oct-14 12:20
N1931-16	03SB0290610	Soil	14-Oct-14 12:05	15-Oct-14 12:20
N1931-17	03SS0300002	Soil	14-Oct-14 12:20	15-Oct-14 12:20
N1931-18	03SB0300204	Soil	14-Oct-14 12:25	15-Oct-14 12:20
N1931-19	03SB0300406	Soil	14-Oct-14 12:30	15-Oct-14 12:20
N1931-20	03SB0300610	Soil	14-Oct-14 12:35	15-Oct-14 12:20
N1931-21	03SS0310002	Soil	14-Oct-14 12:55	15-Oct-14 12:20
N1931-22	03SB0310204	Soil	14-Oct-14 13:00	15-Oct-14 12:20
N1931-23	03SB0310406	Soil	14-Oct-14 13:05	15-Oct-14 12:20
N1931-24	03SB0310610	Soil	14-Oct-14 13:10	15-Oct-14 12:20
N1931-25	03SB0330002	Soil	14-Oct-14 13:30	15-Oct-14 12:20
N1931-26	FD07-101414	Soil	14-Oct-14 00:00	15-Oct-14 12:20
N1931-27	03SB0330204	Soil	14-Oct-14 13:35	15-Oct-14 12:20
N1931-28	03SB0330406	Soil	14-Oct-14 13:40	15-Oct-14 12:20
N1931-29	03SB0330610	Soil	14-Oct-14 13:45	15-Oct-14 12:20
N1931-30	03SS0320002	Soil	14-Oct-14 14:05	15-Oct-14 12:20
N1931-31	03SB0320204	Soil	14-Oct-14 14:10	15-Oct-14 12:20
N1931-32	03SB0320406	Soil	14-Oct-14 14:15	15-Oct-14 12:20
N1931-33	03SB0320610	Soil	14-Oct-14 14:20	15-Oct-14 12:20
N1931-34	03SS0340002	Soil	14-Oct-14 14:50	15-Oct-14 12:20
N1931-35	03SB0340204	Soil	14-Oct-14 14:55	15-Oct-14 12:20
N1931-36	03SB0340406	Soil	14-Oct-14 15:00	15-Oct-14 12:20
N1931-37	03SB0340610	Soil	14-Oct-14 15:05	15-Oct-14 12:20
N1931-38	03SS0350002	Soil	14-Oct-14 15:25	15-Oct-14 12:20
N1931-39	03SB0350204	Soil	14-Oct-14 15:30	15-Oct-14 12:20
N1931-40	03SB0350406	Soil	14-Oct-14 15:35	15-Oct-14 12:20
N1931-41	03SB0350610	Soil	14-Oct-14 15:40	15-Oct-14 12:20
N1931-42	RB03-101414	Aqueous	14-Oct-14 16:00	15-Oct-14 12:20

Report Date:
10-Nov-14 10:04

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☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N1931
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

N1931

SPECTRUM ANALYTICAL, INC.
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Page 2 of 6

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc
661 Andersen Dr.
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Jalkut, P. Seward, W. Pyor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | | – | | | | | | |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials (2 unpres, 1 MeOH)	# of Amber Glass (2oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Tabd Solid	QA/QC Reporting Level / Notes
N1931		2014										
-	03SB024 0610	10/14	0925	G	SO	1	1			1	1	On Hold
-	03SB025 0002	10/14	0940	G	SO	1	1			1	1	
-	03SB025 0204	10/14	0945	G	SO	1	1			1	1	
-	03SB025 0406	10/14	0950	G	SO	1	1			1	1	On Hold
-	03SB025 0610	10/14	0955	G	SO	1	1			1	1	On Hold
-	03SS026 0002	10/14	1005	G	SO	1	1			1	1	
c1	03SB026 0204	10/14	1010	G	SO	1	1			1	1	
c2	03SB026 0406	10/14	1015	G	SO	1	1			1	1	On Hold
c3	03SB026 0610	10/14	1020	G	SO	1	1			1	1	On Hold
c4	03SB028 0002	10/14	1030	G	SO	1	1			1	1	

Refer to lab subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	5.2°c
				4.2°c
				3.1°c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☒ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Page 9 of 486

N1931

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CHAIN OF CUSTODY RECORD

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☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Indicate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/O Tetra Tech, Inc.
6641 Andersen Dr.
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K. Talkot P. Seward, W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 | – |

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials (40ml vials)	# of Amber Glass (4oz jar)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (nonBE Naphthalene)	TPH DRO (C9-C40) Total Solids	QA/QC Reporting Level
N1931		2014										
05	03SB028 0204	10/14	1035	G	SO	1	1	–	–	1	1	
06	FD06-101414	10/14	0000	G	SO	1	1	–	–	1	1	
07	03SB028 0406	10/14	1040	G	SO	1	1	–	–	1	1	On Hold
08	03SB028 0610	10/14	1045	G	SO	1	1	–	–	1	1	On Hold
09	03SS027 0002	10/14	1055	G	SO	3	2	–	–	3	2	Lab QC volume #7
10	03SB027 0204	10/14	1100	G	SO	1	1	–	–	1	1	
11	03SB027 0406	10/14	1105	G	SO	1	1	–	–	1	1	On Hold
12	03SB027 0610	10/14	1110	G	SO	1	1	–	–	1	1	On Hold
13	03SS029 0002	10/14	1150	G	SO	1	1			1	1	
14	03SB029 0204	10/14	1155	G	SO	1	1			1	1	

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: Refer to lab comment

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	5.2°c
				4.2°c
				3.1°c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☒ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1931

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

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☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☒ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
c/o Tetra Tech, Inc.
661 Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K. Talkut, P. Seward, W. Ayer

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1931

Lab Id:	Sample Id:	Date: (2014)	Time:	Type	Matrix	Containers: # of VOA Vials (5ml methanol)	# of Amber Glass (40z jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (MTBE-Naphthalene)	TPH DRO (C9-C40) Total Solids	List preservative code below:	QA/QC Reporting Notes:
15	03SB029 0406	10/14	1200	G	SO	1	1	–	–	1	1	11	On Hold
16	03SB029 0610	10/14	1205	G	SO	1	1	–	–	1	1		On Hold
17	03SS030 0002	10/14	1220	G	SO	1	1	–	–	1	1		
18	03SB030 0204	10/14	1225	G	SO	1	1	–	–	1	1		
19	03SB030 0406	10/14	1230	G	SO	1	1	–	–	1	1		On Hold
20	03SB030 0610	10/14	1235	G	SO	1	1	–	–	1	1		On Hold
21	03SS031 0002	10/14	1255	G	SO	1	1	–	–	1	1		
22	03SB031 0204	10/14	1300	G	SO	1	1	–	–	1	1		
23	03SB031 0406	10/14	1305	G	SO	1	1	–	–	1	1		On Hold
24	03SB031 0610	10/14	1310	G	SO	1	1	–	–	1	1		On Hold

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to Lab Sop for Holding Times

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	5.2°c
				4.2°c
				2.1°c

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1931

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HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

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661 Anderson Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112601813 0000 2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K. Jalkut, P. Seward, W. Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

List preservative code below: 11 – (Containers: Analyses:)

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1931 Lab Id:	Sample Id:	2014 Date:	Time:	Type	Matrix	# of VOA Vials (40 ml vials)	# of Amber Glass (402 jars)	# of Clear Glass	# of Plastic	TPH GRO (C5-C12 Aliphatic)	TPH DRO (C9-C40 Total Solids)	QA/QC Reporting Level / State-specific reporting standards
25	03SS033 0002	10/14	1330	G	SO	1	1			1	1	
26	FD07-101414	10/14	0000	G	SO	1	1			1	1	
27	03SB033 0204	10/14	1335	G	SO	1	1			1	1	
28	03SB033 0406	10/14	1340	G	SO	1	1			1	1	On Hold
29	03SB033 0610	10/14	1345	G	SO	1	1			1	1	On Hold
30	03SS032 0002	10/14	1405	G	SO	3	2			3	2	Lab QC volume #7
31	03SB032 0204	10/14	1410	G	SO	1	1			1	1	
32	03SB032 0406	10/14	1415	G	SO	1	1			1	1	On Hold
33	03SB032 0610	10/14	1420	G	SO	1	1			1	1	On Hold
34	03SS034 0002	10/14	1450	G	SO	1	1			1	1	

QA/QC Reporting Level: ☐ Level I ☐ Level II ☐ Level III ☐ Level IV ☐ Other _____
State-specific reporting standards: Refer to Lab Subcontract

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	10/15/14	12:20	5.2°C
				4.2°C
				3.1°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

N1931

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Page 6 of 6

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☑ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: Quick Turn
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson
C/o Tetra Tech, Inc.
Codel Andersen Dr
Pittsburgh, PA
Telephone #: 412 921 7090
Project Mgr. Scott Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000.2123 WE01
Site Name: NCBC Davisville, CED Area, TPH delineation
Location: N. Kingstown State: RI
Sampler(s): K Talkut P Seward W Pryor

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 5ml methanol 12= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

N1931 Lab Id:	Sample Id:	2014 Date:	Time:	Type	Matrix	Containers: # of VOA Vials (40 ml vials)	# of Amber Glass (4oz jars)	# of Clear Glass	# of Plastic	Analyses: TPH GRO (nTBE - Naphthalene)	TPH DRO (C9-C40) Total Solids	TPH GRO (nTBE - Naphthalene)	TPH DRO (C9-C40)	QA/QC Reporting Notes:
						List preservative code below: 11	2	2	1					
35	03SB034 0204	10/14	1455	G	SO	1	1	—	—	1	1	—	—	
36	03SB034 0406	10/14	1500	G	SO	1	1	—	—	1	1	—	—	On Hold
37	03SB034 0610	10/14	1505	G	SO	1	1	—	—	1	1	—	—	On Hold
38	03SS035 0002	10/14	1525	G	SO	1	1	—	—	1	1	—	—	
39	03SB035 0204	10/14	1530	G	SO	1	1	—	—	1	1	—	—	
40	03SB035 0406	10/14	1535	G	SO	1	1	—	—	1	1	—	—	On Hold
41	03SB035 0610	10/14	1540	G	SO	1	1	—	—	1	1	—	—	On Hold
42	RB03-101414	10/14	1600	G	QC	2**	2*	—	—	—	—	2	2	*1 Amber bottle; **40ml vial w/HCl

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Refer to lab Subcontract

RFarkent 10/14/14

Relinquished by:	Received by:	Date:	Time:	Temp°C
		10/15/14	12:20	5.2°C
				4.2°C
				3.1°C

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Edward Lawler [Warwick]

From: Sinagoga, Leeann [LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 9:27 AM
To: Edward Lawler [RI]; Jennifer Emerson [RI]; Agnes Huntley [RI]
Cc: Anderson, Scott; Ciofani, Leigh Ann; Jalkut, Kayleen; Dale, Jeffrey M CIV NAVFAC MIDLANT, EV (jeffrey.m.dale@navy.mil); Barney, David A CIV OASN (EI&E), BRAC PMO NE (david.a.barney@navy.mil); Logan, Joe
Subject: FW: TPH Results

N1987 – ✓
N1911 – ✓
N1914 → ✓
N1931 → ✓

Good Morning Ed,

I have looked over the GRO/DRO data sent on Friday.

Since we are getting a few hits > the RIDEM 500 mg/kg DRO res DEC standard, we've decided to analyze all samples for GRO/DRO.

So, please analyze all soil samples submitted (including those currently on-hold).

If you can, please continue to send preliminary results for both waters and soils.... Getting a preliminary look at the data is extremely helpful.

Thanks very much for your time and support,

Lee Ann

PS THANKS MUCH TO JENNIFER AND AGNES FOR PITCHING IN LAST WEEK WHILE YOU WERE GONE!

Lee Ann Sinagoga | Department Manager/Chemistry & Risk Assessment
Direct: 412.921.8887 | Main: 412.921.7090 | Fax: 412.921.4040
leeann.sinagoga@tetratech.com

Tetra Tech | Chemistry & Risk Assessment
661 Andersen Drive | Pittsburgh, PA 15220 | www.tetratech.com

-----Original Message-----
From: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV [mailto:jeffrey.m.dale@navy.mil]
Sent: Monday, October 20, 2014 9:13 AM
To: Sinagoga, Leeann
Cc: Anderson, Scott
Subject: RE: TPH Results

Agree 100% with you.
Thanks - got your email yesterday but have a deadline of today.
Jeff

-----Original Message-----
From: Sinagoga, Leeann [mailto:LeeAnn.Sinagoga@tetratech.com]
Sent: Monday, October 20, 2014 8:52 AM
To: Dale, Jeffrey M CIV NAVFAC MIDLANT, EV
Cc: Anderson, Scott
Subject: RE: TPH Results

Hi Jeff,

Just to follow up on my message yesterday...

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 01
Reviewed By: KP	Log-in Date 10/15/2014
Work Order: N1931	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent
9. Cooler Temperature: 5.2 °C
10. Does information on TR/COCs and sample tags agree? Yes / No
11. Date Received at Laboratory: 10/15/2014
12. Time Received: 12:20

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1931-01						M	
N1931-02						M	
N1931-03						M	
N1931-04						M	
N1931-05						M	
N1931-06						M	
N1931-07						M	
N1931-08						M	
N1931-09						M	
N1931-10						M	
N1931-11						M	
N1931-12						M	
N1931-13						M	
N1931-14						M	
N1931-15						M	
N1931-16						M	
N1931-17						M	
N1931-18						M	
N1931-19						M	
N1931-20						M	
N1931-21						M	
N1931-22						M	
N1931-23						M	
N1931-24						M	
N1931-25						M	
N1931-26						M	
N1931-27						M	
N1931-28						M	
N1931-29						M	
N1931-30						M	
N1931-31						M	
N1931-32						M	
N1931-33						M	
N1931-34						M	

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form — Yes / No

Rad OK — Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KV	Log-in Date 10/15/2014
Work Order: N1931	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers
   Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent
9. Cooler Temperature: 5.2 °C
10. Does information on TR/COCs and sample tags agree? — Yes / No
11. Date Received at Laboratory: 10/15/2014
12. Time Received: 12:20

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N1931-35						M	
N1931-36						M	
N1931-37						M	
N1931-38						M	
N1931-39						M	
N1931-40						M	
N1931-41						M	
N1931-42						H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form — Yes / No

Rad OK — Yes / No

* Volatiles *

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1931

SW846 8015D GRO, Gasoline Range Organic (GRO) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D GRO

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B
Soil Samples were prepared following procedures in laboratory test code: SW5035

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: V4
Instrument Type: GC-FID/PID
Description: HP5890 A
Manufacturer: Hewlett-Packard
Model: 5890
GC Column used: 30 m X 0.53 mm ID [um thickness] RTX-502.2 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: 03SS0270002 (N1931-09BMS), 03SS0270002 (N1931-09BMSD), 03SS0320002 (N1931-30BMS) and 03SS0320002 (N1931-30BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

NA.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

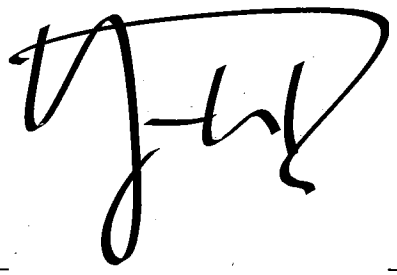
No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

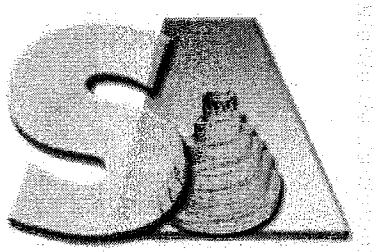
· M1 peak tailing or fronting
· M2 peak co-elution
· M3 rising or falling baseline
· M4 retention time shift
· M5 miscellaneous - under this category, the justification is explained
· M6 software did not integrate peak
· M7 partial peak integration

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____11/7/2014_____



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

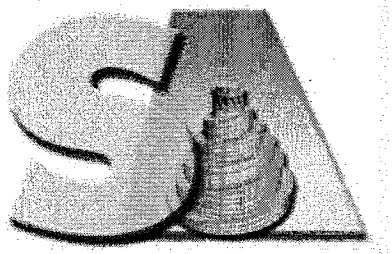
A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

CLIENT: Tetra Tech, Inc.
Work Order: N1931
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79687**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/25/14 7:12**			Run ID: **V4_141025A**				
Client ID: **MB-79687**	Batch ID: **79687**	Units: **ug/Kg**			Analysis Date: **10/25/14 9:29**			SeqNo: **2175568**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	18.51		250	20.00	0	92.6	79	118	0			

Sample ID: **MB-79711**	SampType: **MBLK**	TestCode: **GRO_S**			Prep Date: **10/27/14 7:38**			Run ID: **V4_141027A**				
Client ID: **MB-79711**	Batch ID: **79711**	Units: **ug/Kg**			Analysis Date: **10/27/14 9:06**			SeqNo: **2176116**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	2500 ^	2500									
Surrogate: Bromofluorobenzene	18.03		250	20.00	0	90.1	79	118	0			

Sample ID: **LCS-79687**	SampType: **LCS**	TestCode: **GRO_S**			Prep Date: **10/25/14 7:12**			Run ID: **V4_141025A**				
Client ID: **LCS-79687**	Batch ID: **79687**	Units: **ug/Kg**			Analysis Date: **10/25/14 9:07**			SeqNo: **2175567**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	26930	2500 ^	2500	25000	0	108	80	120	0			
Surrogate: Bromofluorobenzene	17.86		250	20.00	0	89.3	79	118	0			

Sample ID: **LCS-79711**	SampType: **LCS**	TestCode: **GRO_S**			Prep Date: **10/27/14 7:38**			Run ID: **V4_141027A**				
Client ID: **LCS-79711**	Batch ID: **79711**	Units: **ug/Kg**			Analysis Date: **10/27/14 8:36**			SeqNo: **2176115**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	27780	2500 ^	2500	25000	0	111	80	120	0			
Surrogate: Bromofluorobenzene	19.29		250	20.00	0	96.4	79	118	0			

Sample ID: **N1931-09BMS**	SampType: **MS**	TestCode: **GRO_S**			Prep Date: **10/25/14 7:12**			Run ID: **V4_141025A**				
Client ID: **03SS0270002**	Batch ID: **79687**	Units: **ug/Kg**			Analysis Date: **10/25/14 9:53**			SeqNo: **2175569**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	17500	1800 ^	1800	18220	0	96.1	60	140	0			
Surrogate: Bromofluorobenzene	19.40		180	20.00	0	97.0	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank; J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1931
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_S

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: N1931-30BMS	SampType: MS	TestCode: GRO_S	Prep Date: 10/27/14 7:38	Run ID: V4_141027A
Client ID: 03SS0320002	Batch ID: 79711	Units: ug/Kg	Analysis Date: 10/27/14 18:02	SeqNo: 2176137

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	18420	1800 ^	1800	18170	0	101	60	140	0			
Surrogate: Bromofluorobenzene	20.28		180	20.00	0	101	79	118	0			

Sample ID: N1931-09BMSD	SampType: MSD	TestCode: GRO_S	Prep Date: 10/25/14 7:12	Run ID: V4_141025A
Client ID: 03SS0270002	Batch ID: 79687	Units: ug/Kg	Analysis Date: 10/25/14 10:14	SeqNo: 2175570

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	14950	1800 ^	1800	18000	0	83.0	60	140	17500	15.7	20	
Surrogate: Bromofluorobenzene	19.75		180	20.00	0	98.8	79	118	0			

Sample ID: N1931-30BMSD	SampType: MSD	TestCode: GRO_S	Prep Date: 10/27/14 7:38	Run ID: V4_141027A
Client ID: 03SS0320002	Batch ID: 79711	Units: ug/Kg	Analysis Date: 10/27/14 18:23	SeqNo: 2176138

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	19310	1800 ^	1800	18170	0	106	60	140	18420	4.75	20	
Surrogate: Bromofluorobenzene	21.16		180	20.00	0	106	79	118	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
m14.10.24.0936 J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1931
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79616**	SampType: **MBLK**	TestCode: **GRO_W**			Prep Date: **10/21/14 7:55**			Run ID: **V4_141021A**			
Client ID: **MB-79616**	Batch ID: **79616**	Units: **ug/L**			Analysis Date: **10/21/14 10:28**			SeqNo: **2169956**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	19.67		5.0	20.00	0	98.3	87	112	0			

Sample ID: **LCS-79616**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **10/21/14 7:55**			Run ID: **V4_141021A**			
Client ID: **LCS-79616**	Batch ID: **79616**	Units: **ug/L**			Analysis Date: **10/21/14 9:19**			SeqNo: **2169953**			
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	519.9	100 ^	100	500.0	0	104	80	120	0			
Surrogate: Bromofluorobenzene	19.16		5.0	20.00	0	95.8	87	112	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

Data File: \\avogadro\organics\V4.i\141021.B\V4D08005.D
Report Date: 23-Oct-2014 08:14

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 21-OCT-2014 08:46
Lab File ID: V4D08005.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504P Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88671	0.010	1.70891	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32210	0.010	5.45102	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141021.B\V4D08024.D
Report Date: 23-Oct-2014 08:15

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 21-OCT-2014 17:14
Lab File ID: V4D08024.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504Q Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141021.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88143	0.010	2.29429	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32981	0.010	3.18576	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141025.B\V4D08110.D
Report Date: 29-Oct-2014 13:26

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08110.D
Analysis Type: WATER
Lab Sample ID: VSTD0504X
Method: \\avogadro\organics\V4.i\141025.B\v4GRO.m

Injection Date: 25-OCT-2014 08:46
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88834	0.010	1.52728	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	31459	0.010	7.65347	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141025.B\V4D08137.D
Report Date: 29-Oct-2014 13:26

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08137.D
Analysis Type: WATER
Lab Sample ID: VSTD0504Y
Method: \\avogadro\organics\V4.i\141025.B\v4GRO.m

Injection Date: 25-OCT-2014 19:10
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88158	0.010	2.27740	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	32891	0.010	3.45009	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141027.B\V4D08140.D
Report Date: 30-Oct-2014 10:54

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i
Lab File ID: V4D08140.D
Analysis Type: WATER
Lab Sample ID: VSTD0504Z
Method: \\avogadro\organics\V4.i\141027.B\v4GRO.m

Injection Date: 27-OCT-2014 08:13
Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Init. Cal. Times: 10:27 12:52
Quant Type: ESTD

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	86626	0.010	3.97530	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	31083	0.010	8.75954	20.00000	Averaged

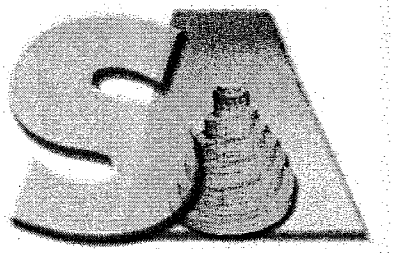
Data File: \\avogadro\organics\V4.i\141027.B\V4D08165.D
Report Date: 30-Oct-2014 10:55

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 27-OCT-2014 18:45
Lab File ID: V4D08165.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504C Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141027.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	82516	0.010	8.53170	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	30714	0.010	9.84080	20.00000	Averaged



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

* Total Petroleum Hydrocarbons *

646 Camp Ave · North Kingstown, RI 02852-4008 · 401-732-3400 · FAX 401-732-3499
www.spectrum-analytical.com

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N1931

SW846 8015D TPH, Total Petroleum Hydrocarbons (TPH) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D TPH

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C
Soil Samples were prepared following procedures in laboratory test code: SW3550B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: F1
Instrument Type: GC-FID

Description: HP6890
Manufacturer: Hewlett-Packard
Model: 6890
GC Column used: 30 m X 0.32 mm ID [0.25 um thickness] Rtx-5MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: 03SS0270002 (N1931-09AMS), 03SS0270002 (N1931-09AMSD), 03SS0320002 (N1931-30AMS) and 03SS0320002 (N1931-30AMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

The following samples were analyzed at dilution:

03SS0280002 (N1931-04A) : Dilution Factor: 5

F. Samples:

No other unusual occurrences were noted during sample analysis.

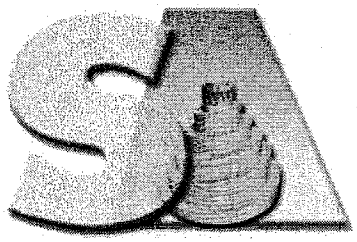
G. Manual Integration

No sample in this SDG were performed with manual integration.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____11/7/2014_____



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Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

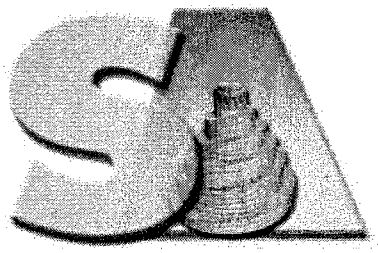
A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

CLIENT: Tetra Tech, Inc.
Work Order: N1931
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79723**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:41**	Run ID: **F1_141031A**
Client ID: **MB-79723**	Batch ID: **79723**	Units: **mg/Kg**	Analysis Date: **10/31/14 12:12**	SeqNo: **2179112**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	3.893		0.83	3.333	0	117	50	150	0			

Sample ID: **MB-79724**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:43**	Run ID: **F1_141104A**
Client ID: **MB-79724**	Batch ID: **79724**	Units: **mg/Kg**	Analysis Date: **11/04/14 9:55**	SeqNo: **2179785**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	3.513		0.83	3.333	0	105	50	150	0			

Sample ID: **MB-79725**	SampType: **MBLK**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:46**	Run ID: **F1_141030B**
Client ID: **MB-79725**	Batch ID: **79725**	Units: **mg/Kg**	Analysis Date: **10/30/14 12:52**	SeqNo: **2178871**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	7.0 ^	7.0									
Surrogate: ortho-Terphenyl	3.036		0.83	3.333	0	91.1	50	150	0			

Sample ID: **LCS-79723**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:41**	Run ID: **F1_141031A**
Client ID: **LCS-79723**	Batch ID: **79723**	Units: **mg/Kg**	Analysis Date: **10/31/14 12:33**	SeqNo: **2179113**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	170.8	7.0 ^	7.0	166.7	0	103	60	140	0			
Surrogate: ortho-Terphenyl	3.209		0.83	3.333	0	96.3	50	150	0			

Sample ID: **LCS-79724**	SampType: **LCS**	TestCode: **TPH_S**	Prep Date: **10/28/14 7:43**	Run ID: **F1_141104A**
Client ID: **LCS-79724**	Batch ID: **79724**	Units: **mg/Kg**	Analysis Date: **11/04/14 10:15**	SeqNo: **2179786**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	125.1	7.0 ^	7.0	166.7	0	75.0	60	140	0			
Surrogate: ortho-Terphenyl	2.355		0.83	3.333	0	70.6	50	150	0			

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
LOD - Limit of Detection
LOQ - Limit of Quantitation
B - Analyte detected in the associated Method Blank
^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1931
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: LCS-79725	SampType: LCS	TestCode: TPH_S	Prep Date: 10/28/14 7:46	Run ID: F1_141030B
Client ID: LCS-79725	Batch ID: 79725	Units: mg/Kg	Analysis Date: 10/30/14 13:14	SeqNo: 2178872

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	120.9	7.0 ^	7.0	166.7	0	72.5	60	140	0			
Surrogate: ortho-Terphenyl	2.232		0.83	3.333	0	66.9	50	150	0			

Sample ID: LCSD-79725	SampType: LCSD	TestCode: TPH_S	Prep Date: 10/28/14 7:46	Run ID: F1_141030B
Client ID: LCSD-79725	Batch ID: 79725	Units: mg/Kg	Analysis Date: 10/30/14 16:02	SeqNo: 2178879

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	168.6	7.0 ^	7.0	166.7	0	101	60	140	120.9	32.9	20	R
Surrogate: ortho-Terphenyl	2.309		0.83	3.333	0	69.3	50	150	0			

Sample ID: N1931-30AMS	SampType: MS	TestCode: TPH_S	Prep Date: 10/28/14 7:43	Run ID: F1_141104A
Client ID: 03SS0320002	Batch ID: 79724	Units: mg/Kg	Analysis Date: 11/04/14 19:44	SeqNo: 2179810

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	194.3	7.5 ^	7.5	177.8	53.44	79.2	50	150	0			
Surrogate: ortho-Terphenyl	2.703		0.89	3.557	0	76.0	50	150	0			

Sample ID: N1931-09AMS	SampType: MSD	TestCode: TPH_S	Prep Date: 10/28/14 7:41	Run ID: F1_141031A
Client ID: 03SS0270002	Batch ID: 79723	Units: mg/Kg	Analysis Date: 10/31/14 21:38	SeqNo: 2179136

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	284.0	7.3 ^	7.3	174.4	108.2	101	50	150	0			
Surrogate: ortho-Terphenyl	2.469		0.87	3.488	0	70.8	50	150	0			

Sample ID: N1931-09AMSD	SampType: MSD	TestCode: TPH_S	Prep Date: 10/28/14 7:41	Run ID: F1_141031A
Client ID: 03SS0270002	Batch ID: 79723	Units: mg/Kg	Analysis Date: 10/31/14 21:59	SeqNo: 2179137

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	354.1	7.3 ^	7.3	173.3	108.2	142	50	150	284.0	22	30	
Surrogate: ortho-Terphenyl	2.849		0.86	3.465	0	82.2	50	150	0			

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
LOD - Limit of Detection
LOQ - Limit of Quantitation
B - Analyte detected in the associated Method Blank
^ Qualified to the Limit of Detection (LOD)

m14.10.24.0936

CLIENT: Tetra Tech, Inc.
Work Order: N1931
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_S

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **N1931-30AMSD**	SampType: **MSD**	TestCode: **TPH_S**		Prep Date: **10/28/14 7:43**		Run ID: **F1_141104A**	
Client ID: **03SS0320002**	Batch ID: **79724**	Units: **mg/Kg**		Analysis Date: **11/04/14 20:05**		SeqNo: **2179811**	

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	197.9	7.5 ^	7.5	178.4	53.44	81.0	50	150	194.3	1.84	30	
Surrogate: ortho-Terphenyl	2.747		0.89	3.568	0	77.0	50	150	0			

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
LOD - Limit of Detection
LOQ - Limit of Quantitation
B - Analyte detected in the associated Method Blank
^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N1931
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_W

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79593**	SampType: **MBLK**	TestCode: **TPH_W**	Prep Date: **10/20/14 14:50**	Run ID: **F1_141022A**
Client ID: **MB-79593**	Batch ID: **79593**	Units: **mg/L**	Analysis Date: **10/22/14 12:02**	SeqNo: **2173044**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	0.20 ^	0.20									
Surrogate: ortho-Terphenyl	0.08808		0.025	0.1000	0	88.1	50	150	0			

Sample ID: **LCS-79593**	SampType: **LCS**	TestCode: **TPH_W**	Prep Date: **10/20/14 14:50**	Run ID: **F1_141022A**
Client ID: **LCS-79593**	Batch ID: **79593**	Units: **mg/L**	Analysis Date: **10/22/14 14:26**	SeqNo: **2173050**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.358	0.20 ^	0.20	5.000	0	87.2	60	140	0			
Surrogate: ortho-Terphenyl	0.08661		0.025	0.1000	0	86.6	50	150	0			

Sample ID: **LCSD-79593**	SampType: **LCSD**	TestCode: **TPH_W**	Prep Date: **10/20/14 14:50**	Run ID: **F1_141022A**
Client ID: **LCSD-79593**	Batch ID: **79593**	Units: **mg/L**	Analysis Date: **10/22/14 12:43**	SeqNo: **2173045**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.369	0.20 ^	0.20	5.000	0	87.4	60	140	4.358	0.259	20	
Surrogate: ortho-Terphenyl	0.08674		0.025	0.1000	0	86.7	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Response Factor Report FID1

Method Path : O:\F1.I\QMETHODS\
Method File : TPH0717.M
Title : TPH, ETPH, DRO, Fuel ID, ORO
Last Update : Thu Jul 17 14:13:45 2014
Response Via : Initial Calibration

Calibration Files
5 =F1J3033.D 20 =F1J3034.D 50 =F1J3035.D
80 =F1J3036.D 100 =F1J3037.D 120 =F1J3038.D

		Compound	5	20	50	80	100	120	Avg		%RSD
1)	S	1-Chlorooctadeca							0.000		-1.00
2)	S	ortho-Terphenyl	2.830	3.103	2.910	3.255	3.307	3.086	3.084	E5	5.33
3)	H	DRO C10 to C28	2.842	2.831	2.599	3.089	3.059	2.824	2.875	E5	5.59
4)	H	TPH C9 to C36	2.898	2.856	2.622	3.123	3.088	2.856	2.907	E5	5.59
5)	H	Gasoline							0.000		-1.00
6)	H	Jet Fuel							0.000		-1.00
7)	H	Motor Oil/Other							0.000		-1.00
8)	H	Number 2 Fuel							0.000		-1.00
9)	H	Number 4 Fuel							0.000		-1.00
10)	H	Number 6 Fuel							0.000		-1.00
11)	I	5a-Androstane	----------ISTD----------								
12)	S	1-Chlorooctadeca							0.000		-1.00
13)	S	ortho-Terphenyl	0.939	1.011	1.065	1.097	1.063	1.071	1.050		4.86
14)	T	C9 Nonane	0.797	0.784	0.809	0.898	0.822	0.834	0.834		4.68
15)	TD	C10 Decane	0.815	0.807	0.837	0.927	0.853	0.863	0.861		4.85
16)	TD	C12 Dodecane	0.854	0.843	0.879	0.963	0.893	0.902	0.899		4.56
17)	TD	C14 Tetradecane	0.890	0.873	0.913	0.992	0.928	0.932	0.931		4.21
18)	TD	C16 Hexadecane	0.951	0.914	0.946	1.027	0.967	0.966	0.968		3.55
19)	TD	C18 Octadecane	0.940	0.919	0.950	1.033	0.979	0.970	0.972		3.69
20)	TD	C20 Eicosane	0.971	0.945	0.978	1.066	1.015	1.002	1.002		3.77
21)	TD	C22 Docosane	0.977	0.968	0.987	1.081	1.031	1.019	1.016		3.72
22)	TD	C24 Tetracosane	0.997	0.974	0.995	1.092	1.042	1.033	1.028		3.68
23)	TD	C26 Hexacosane	1.011	0.987	1.010	1.110	1.060	1.053	1.045		3.81
24)	TD	C28 Octacosane	1.024	0.993	1.016	1.119	1.067	1.062	1.054		3.85
25)	T	C30 Triacontane	1.017	1.006	1.033	1.138	1.083	1.080	1.069		4.26
26)	T	C32 Dotriaconta	0.986	0.987	1.021	1.123	1.066	1.065	1.051		4.63
27)	T	C36 Hexatriacon	1.229	1.028	1.057	1.162	1.095	1.096	1.113		5.57
28)	H	DRO C10 to C28	0.943	0.922	0.951	1.041	0.984	0.980	0.978		3.91
29)	H	TPH C8 to C40 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
30)	H	TPH C9 to C36 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
31)		----------							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3723.D
Lab Smp Id: FSTD1001N Client Smp ID: FSTD1001N
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 9:38 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 09:56:12 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	297.901 E3	3.4	100	0.00
3	H	DRO C10 to C28	287.452	282.607 E3	1.7	100	0.00
4	H	TPH C9 to C40	290.717	288.330 E3	0.8	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.061	-1.0	100	0.00
14		C9 Nonane	0.834	0.791	5.2	100	0.00
15		C10 Decane	0.861	0.814	5.5	100	0.00
16		C12 Dodecane	0.899	0.867	3.6	100	0.00
17		C14 Tetradecane	0.931	0.922	1.0	100	0.00
18		C16 Hexadecane	0.968	0.980	-1.2	100	0.00
19		C18 Octadecane	0.972	1.000	-2.9	100	0.00
20		C20 Eicosane	1.002	1.045	-4.3	100	0.00
21		C22 Docosane	1.016	1.071	-5.4	100	0.00
22		C24 Tetracosane	1.028	1.086	-5.6	100	0.00
23		C26 Hexacosane	1.045	1.135	-8.6	100	0.00
24		C28 Octacosane	1.054	1.147	-8.8	100	0.00
25		C30 Triacontane	1.069	1.172	-9.6	100	0.00
26		C32 Dotriacontane	1.051	1.157	-10.1	100	0.00
27		C36 Hexatriacontane	1.113	1.192	-7.1	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.007	-3.0	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.027	-3.8	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.027	-3.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3735.D
Lab Smp Id: FSTD1001O Client Smp ID: FSTD1001O
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 13:45 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 14:02:35 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	301.046 E3	2.4	101	0.00
3	H	DRO C10 to C28	287.452	286.371 E3	0.4	101	0.00
4	H	TPH C9 to C40	290.717	292.647 E3	-0.7	101	0.00
11	I	5a-Androstane	1.000	1.000	0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.057	-0.7	101	0.00
14		C9 Nonane	0.834	0.782	6.2	100	0.00
15		C10 Decane	0.861	0.804	6.6	100	0.00
16		C12 Dodecane	0.899	0.857	4.7	100	0.00
17		C14 Tetradecane	0.931	0.914	1.8	101	0.00
18		C16 Hexadecane	0.968	0.971	-0.3	101	0.00
19		C18 Octadecane	0.972	0.995	-2.4	101	0.00
20		C20 Eicosane	1.002	1.047	-4.5	102	0.00
21		C22 Docosane	1.016	1.074	-5.7	102	0.00
22		C24 Tetracosane	1.028	1.094	-6.4	102	0.00
23		C26 Hexacosane	1.045	1.138	-8.9	102	0.00
24		C28 Octacosane	1.054	1.157	-9.8	102	0.00
25		C30 Triacontane	1.069	1.181	-10.5	102	0.00
26		C32 Dotriacontane	1.051	1.165	-10.8	102	0.00
27		C36 Hexatriacontane	1.113	1.200	-7.8	102	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.005	-2.8	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.027	-3.8	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.027	-3.8	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141022A.B\F1J3741.D
Lab Smp Id: FSTD1001P Client Smp ID: FSTD1001P
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 22 Oct 2014 15:49 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 22 16:06:49 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	323.981	E3	-5.0	109	0.00
3	H	DRO C10 to C28	287.452	309.010	E3	-7.5	109	0.00
4	H	TPH C9 to C40	290.717	316.753	E3	-9.0	110	0.00
11	I	5a-Androstane	1.000	1.000		0.0	109	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.059		-0.9	109	0.00
14		C9 Nonane	0.834	0.791		5.2	109	0.00
15		C10 Decane	0.861	0.812		5.7	109	0.00
16		C12 Dodecane	0.899	0.860		4.3	108	0.00
17		C14 Tetradecane	0.931	0.916		1.6	108	0.00
18		C16 Hexadecane	0.968	0.975		-0.7	108	0.00
19		C18 Octadecane	0.972	0.997		-2.6	109	0.00
20		C20 Eicosane	1.002	1.047		-4.5	109	0.00
21		C22 Docosane	1.016	1.081		-6.4	110	0.00
22		C24 Tetracosane	1.028	1.100		-7.0	110	0.00
23		C26 Hexacosane	1.045	1.147		-9.8	110	0.00
24		C28 Octacosane	1.054	1.169		-10.9	111	0.00
25		C30 Triacontane	1.069	1.196		-11.9	111	0.00
26		C32 Dotriacontane	1.051	1.184		-12.7	111	0.00
27		C36 Hexatriacontane	1.113	1.225		-10.1	112	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.011		-3.4	109	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.036		-4.8	110	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.036		-4.8	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141030A.B\F1J3943.D
Lab Smp Id: FSTD1001J Client Smp ID: FSTD1001J
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 30 Oct 2014 12:11 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 30 11:31:33 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.219 E3	1.0	97	0.00
3	H	DRO C10 to C28	287.452	281.571 E3	2.0	96	0.00
4	H	TPH C9 to C40	290.717	284.679 E3	2.1	97	0.00
11	I	5a-Androstane	1.000	1.000	0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.069	-1.8	97	0.00
14		C9 Nonane	0.834	0.795	4.7	96	0.00
15		C10 Decane	0.861	0.822	4.5	95	0.00
16		C12 Dodecane	0.899	0.895	0.4	96	0.00
17		C14 Tetradecane	0.931	0.942	-1.2	96	0.00
18		C16 Hexadecane	0.968	0.986	-1.9	96	0.00
19		C18 Octadecane	0.972	0.992	-2.1	97	0.00
20		C20 Eicosane	1.002	1.029	-2.7	97	0.00
21		C22 Docosane	1.016	1.029	-1.3	97	0.00
22		C24 Tetracosane	1.028	1.027	0.1	97	0.00
23		C26 Hexacosane	1.045	1.073	-2.7	97	0.00
24		C28 Octacosane	1.054	1.072	-1.7	97	0.00
25		C30 Triacontane	1.069	1.095	-2.4	97	0.00
26		C32 Dotriacontane	1.051	1.079	-2.7	97	0.00
27		C36 Hexatriacontane	1.113	1.130	-1.5	96	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.987	-0.9	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.997	-0.8	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.997	-0.8	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141030A.B\F1J3955.D
Lab Smp Id: FSTD1001K Client Smp ID: FSTD1001K
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 30 Oct 2014 16:23 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 08:24:11 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.745 E3	0.9	98	0.00
3	H	DRO C10 to C28	287.452	281.400 E3	2.1	96	0.00
4	H	TPH C9 to C40	290.717	284.747 E3	2.1	97	0.00
11	I	5a-Androstane	1.000	1.000	0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074	-2.3	98	0.00
14		C9 Nonane	0.834	0.827	0.8	100	0.00
15		C10 Decane	0.861	0.851	1.2	98	0.00
16		C12 Dodecane	0.899	0.921	-2.4	98	0.00
17		C14 Tetradecane	0.931	0.958	-2.9	97	0.00
18		C16 Hexadecane	0.968	0.988	-2.1	96	0.00
19		C18 Octadecane	0.972	0.987	-1.5	96	0.00
20		C20 Eicosane	1.002	1.021	-1.9	96	0.00
21		C22 Docosane	1.016	1.011	0.5	95	0.00
22		C24 Tetracosane	1.028	1.021	0.7	96	0.00
23		C26 Hexacosane	1.045	1.061	-1.5	96	0.00
24		C28 Octacosane	1.054	1.066	-1.1	96	0.00
25		C30 Triacontane	1.069	1.085	-1.5	96	0.00
26		C32 Dotriacontane	1.051	1.075	-2.3	97	0.00
27		C36 Hexatriacontane	1.113	1.131	-1.6	96	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.988	-1.0	96	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.000	-1.1	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.000	-1.1	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141031A.B\F1J3966.D
Lab Smp Id: FSTD1001L Client Smp ID: FSTD1001L
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 31 Oct 2014 11:28 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 10:48:20 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	308.030	E3	0.1	100	0.00
3	H	DRO C10 to C28	287.452	279.844	E3	2.6	100	0.00
4	H	TPH C9 to C40	290.717	282.923	E3	2.7	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.073		-2.2	100	0.00
14		C9 Nonane	0.834	0.775		7.1	100	0.00
15		C10 Decane	0.861	0.806		6.4	100	0.00
16		C12 Dodecane	0.899	0.885		1.6	100	0.00
17		C14 Tetradecane	0.931	0.937		-0.6	100	0.00
18		C16 Hexadecane	0.968	0.981		-1.3	100	0.00
19		C18 Octadecane	0.972	0.987		-1.5	100	0.00
20		C20 Eicosane	1.002	1.022		-2.0	100	0.00
21		C22 Docosane	1.016	0.976		3.9	100	0.00
22		C24 Tetracosane	1.028	1.019		0.9	100	0.00
23		C26 Hexacosane	1.045	1.071		-2.5	100	0.00
24		C28 Octacosane	1.054	1.063		-0.9	100	0.00
25		C30 Triacontane	1.069	1.089		-1.9	100	0.00
26		C32 Dotriacontane	1.051	1.072		-2.0	100	0.00
27		C36 Hexatriacontane	1.113	1.113		0.0	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.975		0.3	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.985		0.4	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.985		0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141031A.B\F1J3978.D
Lab Smp Id: FSTD1001M Client Smp ID: FSTD1001M
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 31 Oct 2014 15:42 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 31 15:06:09 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	305.101	E3	1.1	99	0.00
3	H	DRO C10 to C28	287.452	278.101	E3	3.3	99	0.00
4	H	TPH C9 to C40	290.717	280.147	E3	3.6	99	0.00
11	I	5a-Androstane	1.000	1.000		0.0	99	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.075		-2.4	99	0.00
14		C9 Nonane	0.834	0.774		7.2	99	0.00
15		C10 Decane	0.861	0.803		6.7	99	0.00
16		C12 Dodecane	0.899	0.890		1.0	99	0.00
17		C14 Tetradecane	0.931	0.945		-1.5	100	0.00
18		C16 Hexadecane	0.968	0.988		-2.1	100	0.00
19		C18 Octadecane	0.972	0.992		-2.1	99	0.00
20		C20 Eicosane	1.002	1.026		-2.4	99	0.00
21		C22 Docosane	1.016	1.024		-0.8	104	0.00
22		C24 Tetracosane	1.028	1.013		1.5	98	0.00
23		C26 Hexacosane	1.045	1.063		-1.7	98	0.00
24		C28 Octacosane	1.054	1.055		-0.1	98	0.00
25		C30 Triacontane	1.069	1.079		-0.9	98	0.00
26		C32 Dotriacontane	1.051	1.062		-1.0	98	0.00
27		C36 Hexatriacontane	1.113	1.106		0.6	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.980		-0.2	99	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.987		0.2	99	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.987		0.2	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141031A.B\F1J3990.D
Lab Smp Id: FSTD1001N Client Smp ID: FSTD1001N
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 31 Oct 2014 19:53 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 09:44:46 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	309.948 E3	-0.5	101	0.00
3	H	DRO C10 to C28	287.452	282.307 E3	1.8	101	0.00
4	H	TPH C9 to C40	290.717	284.774 E3	2.0	101	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.074	-2.3	101	0.00
14		C9 Nonane	0.834	0.769	7.8	100	0.00
15		C10 Decane	0.861	0.797	7.4	99	0.00
16		C12 Dodecane	0.899	0.886	1.4	101	0.00
17		C14 Tetradecane	0.931	0.941	-1.1	101	0.00
18		C16 Hexadecane	0.968	0.985	-1.8	101	0.00
19		C18 Octadecane	0.972	0.990	-1.9	101	0.00
20		C20 Eicosane	1.002	1.024	-2.2	101	0.00
21		C22 Docosane	1.016	1.015	0.1	105	0.00
22		C24 Tetracosane	1.028	1.016	1.2	100	0.00
23		C26 Hexacosane	1.045	1.068	-2.2	100	0.00
24		C28 Octacosane	1.054	1.061	-0.7	100	0.00
25		C30 Triacontane	1.069	1.086	-1.6	100	0.00
26		C32 Dotriacontane	1.051	1.065	-1.3	100	0.00
27		C36 Hexatriacontane	1.113	1.114	-0.1	101	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.978	0.0	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.987	0.2	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.987	0.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141031A.B\F1J4002.D
Lab Smp Id: FSTD10010 Client Smp ID: FSTD10010
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 01 Nov 2014 00:04 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 09:49:22 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	312.052 E3	-1.2	101	0.00
3	H	DRO C10 to C28	287.452	284.361 E3	1.1	102	0.00
4	H	TPH C9 to C40	290.717	286.432 E3	1.5	101	0.00
11	I	5a-Androstane	1.000	1.000	0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.076	-2.5	101	0.00
14		C9 Nonane	0.834	0.785	5.9	102	0.00
15		C10 Decane	0.861	0.816	5.2	102	0.00
16		C12 Dodecane	0.899	0.897	0.2	102	0.00
17		C14 Tetradecane	0.931	0.945	-1.5	102	0.00
18		C16 Hexadecane	0.968	0.980	-1.2	101	0.00
19		C18 Octadecane	0.972	0.987	-1.5	101	0.00
20		C20 Eicosane	1.002	1.024	-2.2	101	0.00
21		C22 Docosane	1.016	1.018	-0.2	105	0.00
22		C24 Tetracosane	1.028	1.020	0.8	101	0.00
23		C26 Hexacosane	1.045	1.059	-1.3	100	0.00
24		C28 Octacosane	1.054	1.061	-0.7	101	0.00
25		C30 Triacontane	1.069	1.074	-0.5	100	0.00
26		C32 Dotriacontane	1.051	1.051	0.0	99	0.00
27		C36 Hexatriacontane	1.113	1.112	0.1	101	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.981	-0.3	102	0.00
29	H	TPH C8 to C40 ISTD	0.989	0.988	0.1	101	0.00
30	H	TPH C9 to C36 ISTD	0.989	0.988	0.1	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141104A.B\F1J4016.D
Lab Smp Id: FSTD1001P Client Smp ID: FSTD1001P
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 04 Nov 2014 9:15 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 09:32:52 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	272.586 E3	11.6	100	0.00
3	H	DRO C10 to C28	287.452	258.538 E3	10.1	100	0.00
4	H	TPH C9 to C40	290.717	266.799 E3	8.2	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.062	-1.1	100	0.00
14		C9 Nonane	0.834	0.847	-1.6	100	0.00
15		C10 Decane	0.861	0.871	-1.2	100	0.00
16		C12 Dodecane	0.899	0.923	-2.7	100	0.00
17		C14 Tetradecane	0.931	0.960	-3.1	100	0.00
18		C16 Hexadecane	0.968	0.986	-1.9	100	0.00
19		C18 Octadecane	0.972	0.993	-2.2	100	0.00
20		C20 Eicosane	1.002	1.031	-2.9	100	0.00
21		C22 Docosane	1.016	1.016	0.0	100	0.00
22		C24 Tetracosane	1.028	1.042	-1.4	100	0.00
23		C26 Hexacosane	1.045	1.118	-7.0	100	0.00
24		C28 Octacosane	1.054	1.130	-7.2	100	0.00
25		C30 Triacontane	1.069	1.181	-10.5	100	0.00
26		C32 Dotriacontane	1.051	1.179	-12.2	100	0.00
27		C36 Hexatriacontane	1.113	1.272	-14.3	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.007	-3.0	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.039	-5.1	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.039	-5.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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Data File: \\Avogadro\Organics\F1.I\141104A.B\F1J4028.D
Lab Smp Id: FSTD1001Q Client Smp ID: FSTD1001Q
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 04 Nov 2014 13:25 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 04 13:50:30 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	270.345 E3	12.3	99	0.00
3	H	DRO C10 to C28	287.452	252.373 E3	12.2	98	0.00
4	H	TPH C9 to C40	290.717	258.433 E3	11.1	97	0.00
11	I	5a-Androstane	1.000	1.000	0.0	98	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.070	-1.9	99	0.00
14		C9 Nonane	0.834	0.854	-2.4	99	0.00
15		C10 Decane	0.861	0.879	-2.1	99	0.00
16		C12 Dodecane	0.899	0.940	-4.6	100	0.00
17		C14 Tetradecane	0.931	0.973	-4.5	100	0.00
18		C16 Hexadecane	0.968	0.995	-2.8	99	0.00
19		C18 Octadecane	0.972	0.992	-2.1	98	0.00
20		C20 Eicosane	1.002	1.024	-2.2	98	0.00
21		C22 Docosane	1.016	1.007	0.9	98	0.00
22		C24 Tetracosane	1.028	1.014	1.4	96	0.00
23		C26 Hexacosane	1.045	1.079	-3.3	95	0.00
24		C28 Octacosane	1.054	1.083	-2.8	94	0.00
25		C30 Triacontane	1.069	1.126	-5.3	94	0.00
26		C32 Dotriacontane	1.051	1.122	-6.8	94	0.00
27		C36 Hexatriacontane	1.113	1.229	-10.4	95	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.999	-2.1	98	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.023	-3.4	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.023	-3.4	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141104A.B\F1J4040.D
Lab Smp Id: FSTD1001R Client Smp ID: FSTD1001R
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 04 Nov 2014 17:38 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 05 08:57:05 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	277.322 E3	10.1	102	0.00
3	H	DRO C10 to C28	287.452	260.010 E3	9.5	101	0.00
4	H	TPH C9 to C40	290.717	267.655 E3	7.9	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.068	-1.7	102	0.00
14		C9 Nonane	0.834	0.842	-1.0	101	0.00
15		C10 Decane	0.861	0.869	-0.9	101	0.00
16		C12 Dodecane	0.899	0.930	-3.4	102	0.00
17		C14 Tetradecane	0.931	0.965	-3.7	102	0.00
18		C16 Hexadecane	0.968	0.989	-2.2	101	0.00
19		C18 Octadecane	0.972	0.989	-1.7	101	0.00
20		C20 Eicosane	1.002	1.026	-2.4	101	0.00
21		C22 Docosane	1.016	1.012	0.4	101	0.00
22		C24 Tetracosane	1.028	1.025	0.3	99	0.00
23		C26 Hexacosane	1.045	1.097	-5.0	99	0.00
24		C28 Octacosane	1.054	1.107	-5.0	99	0.00
25		C30 Triacontane	1.069	1.156	-8.1	99	0.00
26		C32 Dotriacontane	1.051	1.158	-10.2	99	0.00
27		C36 Hexatriacontane	1.113	1.261	-13.3	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.001	-2.4	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.030	-4.1	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.030	-4.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141104A.B\F1J4052.D
Lab Smp Id: FSTD1001S Client Smp ID: FSTD1001S
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 04 Nov 2014 21:50 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 05 09:00:08 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	288.528	E3	6.5	106	0.00
3	H	DRO C10 to C28	287.452	270.113	E3	6.0	104	0.00
4	H	TPH C9 to C40	290.717	278.615	E3	4.2	104	0.00
11	I	5a-Androstane	1.000	1.000		0.0	105	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.068		-1.7	106	0.00
14		C9 Nonane	0.834	0.839		-0.6	104	0.00
15		C10 Decane	0.861	0.864		-0.3	104	0.00
16		C12 Dodecane	0.899	0.926		-3.0	106	0.00
17		C14 Tetradecane	0.931	0.960		-3.1	105	0.00
18		C16 Hexadecane	0.968	0.985		-1.8	105	0.00
19		C18 Octadecane	0.972	0.987		-1.5	105	0.00
20		C20 Eicosane	1.002	1.021		-1.9	104	0.00
21		C22 Docosane	1.016	1.014		0.2	105	0.00
22		C24 Tetracosane	1.028	1.029		-0.1	104	0.00
23		C26 Hexacosane	1.045	1.097		-5.0	103	0.00
24		C28 Octacosane	1.054	1.111		-5.4	104	0.00
25		C30 Triacontane	1.069	1.157		-8.2	103	0.00
26		C32 Dotriacontane	1.051	1.162		-10.6	104	0.00
27		C36 Hexatriacontane	1.113	1.279		-14.9	106	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.999		-2.1	104	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.031		-4.2	104	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.031		-4.2	104	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

N1931

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/28/2014 07:41**

Prep End Date: **10/29/2014 11:30** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: mL / g

Prep Batch ID: **79723** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A

QC Matrix Lot: 141513 | Solvent (1) Lot: DL501 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A

Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | BalanceID: TL1 | Bath Temp1 (C): N/A | Corr Fac: N/A | Therm ID1: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79723	BatchQC		30	1	OFW141016A	1			TM	DMP			10/29/14	AMC	R7				Sonicator 5 / Turbo Vap 1
LCS-79723	BatchQC		30	1	OFW141016A	1	OFW141007A	1	TM	DMP			10/29/14	AMC	R7				Sonicator 1 / Turbo Vap 1
N1931-01A	03SB0260204	S	30.4	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 1 / Turbo Vap 1 DoD
N1931-02A	03SB0260406	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 2 / Turbo Vap 1 DoD
N1931-03A	03SB0260610	S	30	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 2 / Turbo Vap 1 DoD
N1931-04A	03SS0280002	S	30.1	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 3 / Turbo Vap 1 DoD
N1931-05A	03SB0280204	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 3 / Turbo Vap 1 DoD
N1931-06A	FD06-101414	S	30.2	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 5 / Turbo Vap 1 DoD
N1931-07A	03SB0280406	S	30.4	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 5 / Turbo Vap 1 DoD
N1931-08A	03SB0280610	S	30.1	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 1 / Turbo Vap 1 DoD
N1931-09A	03SS0270002	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 1 / Turbo Vap 1 DoD
N1931-09AMS	03SS0270002	S	30.2	1	OFW141016A	1	OFW141007A	1	TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 2 / Turbo Vap 1 DoD
N1931-09AMSD	03SS0270002	S	30.4	1	OFW141016A	1	OFW141007A	1	TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 2 / Turbo Vap 1 DoD
N1931-10A	03SB0270204	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7				Sonicator 3 / Turbo Vap 1 DoD

Logbook ID: 50.0147-10/14

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

N1931

Prep Start Date: **10/28/2014 07:41**
Prep End Date: **10/29/2014 11:30** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79723** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DL501	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: TL1	Start Time: N/A	Cycles/Hour 0	Sonicator Tuned?Yes	Bath Temp1 (C): N/A	Therm ID1: N/A
	End Time: N/A		BalanceID: TL1	Corr Fac: N/A	Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
N1931-11A	03SB0270406	S	30.4	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-12A	03SB0270610	S	30	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1931-13A	03SS0290002	S	30.1	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1931-14A	03SB0290204	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1931-15A	03SB0290406	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1931-16A	03SB0290610	S	30	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-17A	03SS0300002	S	30.2	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-18A	03SB0300204	S	30.1	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-19A	03SB0300406	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-20A	03SB0300610	S	30.4	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD

Analisa M Caruso 10/29/2014 Devin M Pierel 11/03/2014
Analyst Reviewed Date Manager Reviewed Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

Logbook ID: 50.0147-10/14

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/28/2014 07:43**
Prep End Date: **10/29/2014 13:51** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79724** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DL501 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes BalanceID: TL1 | Bath Temp1 (C): N/A Corr Fac: N/A | Therm ID1: N/A Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79724	BatchQC		30	1	OFW141016A	1			TM	DMP			10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
LCS-79724	BatchQC		30	1	OFW141016A	1	OFW141007A	1	TM	DMP			10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1
N1931-21A	03SS0310002	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-22A	03SB0310204	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-23A	03SB0310406	S	30.4	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-24A	03SB0310610	S	30.1	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-25A	03SB0330002	S	30	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1931-26A	FD07-101414	S	30	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1931-27A	03SB0330204	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1931-28A	03SB0330406	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1931-29A	03SB0330610	S	30.4	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-30A	03SS0320002	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-30AMS	03SS0320002	S	30.3	1	OFW141016A	1	OFW141007A	1	TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-30AMSD	03SS0320002	S	30.2	1	OFW141016A	1	OFW141007A	1	TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD

Logbook ID: 50.0147-10/14

10/29/14

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/28/2014 07:43**
Prep End Date: **10/29/2014 13:51** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79724** Technician: **Devin M Pierel**

QC Matrix: NA2SO4	Solvent (1): MECL2	Solvent (3): N/A	Misc (2): N/A	Clean Up (1): N/A	Clean Up (3): N/A
QC Matrix Lot: 141513	Solvent (1) Lot: DL501	Solvent (3) Lot: N/A	Misc (2) Lot: N/A	Clean Up (1) Lot: N/A	Clean Up (1) Lot: N/A
Filter?: FILTER	Solvent (2): N/A	Misc (1): N/A	Misc (3): N/A	Clean Up (2): N/A	Clean Up (4): N/A
Filter Lot: FC010958	Solvent (2) Lot: N/A	Misc (1) Lot: N/A	Misc (3) Lot: N/A	Clean Up (2) Lot: N/A	Clean Up (4) Lot: N/A
Balance ID: TL1	Start Time: N/A	Cycles/Hour 0	Sonicator Tuned?Yes	Bath Temp1 (C): N/A	Therm ID1: N/A
	End Time: N/A		BalanceID: TL1	Corr Fac: N/A	Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
N1931-31A	03SB0320204	S	30.2	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1931-32A	03SB0320406	S	30.1	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1931-33A	03SB0320610	S	30.2	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1931-34A	03SS0340002	S	30.2	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 1 / Turbo Vap 1 DoD
N1931-35A	03SB0340204	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-36A	03SB0340406	S	30.4	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1931-37A	03SB0340610	S	30	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-38A	03SS0350002	S	30.5	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-39A	03SB0350204	S	30.2	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
N1931-40A	03SB0350406	S	30.2	1	OFW141016A	1			TM	DMP	11/03/14	01	10/29/14	AMC	R7		☐	☐	Sonicator 5 / Turbo Vap 1 DoD

Analisa M Caruso 10/29/2014 — Analyst Reviewed / Date
Devin M Pierel 10/29/2014 — Manager Reviewed / Date

Logbook ID: 50.0147-10/14

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

PREP BATCH REPORT

Prep Start Date: **10/28/2014 07:46**
Prep End Date: **10/31/2014 15:00** Prep Code: **TPH_S_PR** Prep Type: **SONC/SW3550B** Prep Factor Units: **mL / g**
Prep Batch ID: **79725** Technician: **Devin M Pierel**

QC Matrix: NA2SO4 | Solvent (1): MECL2 | Solvent (3): N/A | Misc (2): N/A | Clean Up (1): N/A | Clean Up (3): N/A
QC Matrix Lot: 141513 | Solvent (1) Lot: DL501 | Solvent (3) Lot: N/A | Misc (2) Lot: N/A | Clean Up (1) Lot: N/A | Clean Up (1) Lot: N/A

Filter?: FILTER | Solvent (2): N/A | Misc (1): N/A | Misc (3): N/A | Clean Up (2): N/A | Clean Up (4): N/A
Filter Lot: FC010958 | Solvent (2) Lot: N/A | Misc (1) Lot: N/A | Misc (3) Lot: N/A | Clean Up (2) Lot: N/A | Clean Up (4) Lot: N/A

Balance ID: TL1 | Start Time: N/A | End Time: N/A | Cycles/Hour 0 | Sonicator Tuned?Yes | BalanceID: TL1 | Bath Temp1 (C): N/A | Corr Fac: N/A | Therm ID1: N/A | Corrected Temp: N/A

Lab Sample ID	Client Samp ID	M	Initial (mL/g)	Final (mL)	Surrogate Spike ID	Surr (mL)	LCS/D MS/D Spike ID	Spike (mL)	A* Init	W* Init	Due Date	Bottle Number	Trans Date	Trans By	Storage	pH	pH >11	pH <2	SONC / CNCNT
MB-79725	BatchQC		30	1	OFW141016A	1			TM	DMP			10/31/14	AMC	R21		☐	☐	Sonicator 1 / Turbo Vap 1
LCS-79725	BatchQC		30	1	OFW141016A	1	OFW141007A	1	TM	DMP			10/31/14	AMC	R21		☐	☐	Sonicator 1 / Turbo Vap 1
N1914-05A	03SS0220002	S	30.4	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-09A	03SS0180002	S	30.5	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 2 / Turbo Vap 1 DoD
N1914-13A	03SS0190002	S	30.5	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1914-17A	03SS0200002	S	30	1	OFW141016A	1			TM	DMP	10/31/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 3 / Turbo Vap 1 DoD
N1931-41A	03SB0350610	S	30.3	1	OFW141016A	1			TM	DMP	11/03/14	01	10/31/14	AMC	R21		☐	☐	Sonicator 5 / Turbo Vap 1 DoD
LCSD-79725	BatchQC		30	1									10/31/14	AMC	R21		☐	☐	Sonicator 5 / Turbo Vap 1

Analisa M Caruso 10/31/2014
Analyst Reviewed Date

Devin M Pierel 11/03/2014
Manager Reviewed Date

Comments:

*A = Analyst (Spiked) *W = Witnessed (Spike) *T = Transferred

DMP 11/3/14

Logbook ID: 50.0147-10/14

Data File: \\Avogadro\Organics\F1.I\141031A.B\F1J3992.D
Lab Smp Id: N1931-04A BN: 79723 Client Smp ID: 03SS0280002
Misc : | TPH 5X DIL Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 31 Oct 2014 20:35 Operator: TM
ALS Vial : 58 Sample Multiplier: 1

Quant Time: Nov 04 09:56:07 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Compound	R.T.	Response	Conc Units
Internal Standards			
11) I 5a-Androstane	6.74	15858966	40.000 ug/mL
System Monitoring Compounds			
2) S ortho-Terphenyl	6.27	4859062	15.754 ug/mL
Spiked Amount 100.000		Recovery =	15.75%
Target Compounds			
4) H TPH C9 to C40	1.30	296603432	1020.248 ug/mL
Integration Range:			1.30 to 12.70 minutes
Raw Range Area:		468751683	
Corrected Range Area (IS,SS):		448033655	
Instrument Blank Area (F1J3991):		151430223	

Corrected Range Area = Raw Range Area - Internal and Surrogate Area
Reported Area = Corrected Range Area - Instrument Blank Area

(f)=RT Delta > 1/2 Window (m)=manual int.

$$\frac{296603432 \times 5}{290717 \times 30.1 \times 0.945} = 179 \text{ mg/Kg}$$

TPH = 180 mg/Kg

N1931

TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **S. ANDERSON** **DATE:** **DECEMBER 16, 2014**

FROM: **MICHELLE L. ALLEN** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – TOTAL & DISSOLVED METALS**
FORMER NAVAL CONSTRUCTION BATTALION CENTER (NCBC), DAVISVILLE
CTO WE01
SAMPLE DELIVERY GROUP (SDG) N2027

SAMPLES: 7/Aqueous/Total & Dissolved Metals

FB03-103014	FD04-102914	MW01-13Sa-NWG-102714
MW02-06Sa-NWG-102914	MW03-01Sa-NWG-102914	MW03-03Sa-NWG-103014
MW03-16I-NWG-102814		

Overview

The sample set for NCBC Davisville, CTO WE01, SDG N2027 consisted of seven (7) aqueous environmental samples. All ten (10) soil samples were analyzed for total metals. One field duplicate pair was included in this sample delivery group (SDG): FD04-102914/MW03-01Sa-NWG-102914.

The samples were collected by Tetra Tech, Inc. on October 27 - 30, 2014 and analyzed by Spectrum Analytical, Inc. All analyses were conducted in accordance with SW846 Methods 6020A and 7470A analytical and reporting protocols.

The data was evaluated based on the following parameters:

*	• Data Completeness
*	• Holding Times
*	• Initial and Continuing Calibration Verification Results
	• Laboratory Method/Preparation Blank Analyses
*	• ICP Interference Results
	• Laboratory Duplicate Results
*	• Laboratory Control Sample Recoveries
*	• Matrix Spike/Matrix Spike Duplicate Recoveries
	• Field Duplicate Precision
*	• ICP Serial Dilution Results
*	• Detection Limits
*	• Analyte Quantitation

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. An EPA Region 1 tier II validation was performed on the data in this SDG. The text of this report has been formulated to address only those areas affecting data quality.

LABORATORY METHOD/PREPARATION BLANK ANALYSES

The following analytes were detected in the laboratory method and preparation blanks the following maximum concentrations:

Analyte	Maximum Concentration (µg/L)	Action Level (µg/L)
Zinc [1]	1.912	9.56
Aluminum [2]	3.425	17.13
Beryllium [2]	0.079	0.4
Cadmium [2]	0.088	0.44
Calcium [2]	28.622	143
Cobalt [2]	0.096	0.48
Lead [2]	0.081	0.41
Magnesium [2]	24.24	121
Potassium [2]	26.482	132
Silver [2]	0.087	0.44
Thallium [2]	0.129	0.65
Mercury [3]	0.061	0.31

(1) Maximum concentration found in the preparation blank from preparation batch # 79919 affecting all total and dissolved metal samples.

(2) Maximum concentration found in the initial/continuing calibration blanks from analytical batch # 2190291affecting all total and dissolved metal samples.

(3) Maximum concentration found in the continuing calibration blanks from analytical batches #2191329 and #2191340 affecting all total and dissolved metal samples with the exception of the field blank, FB03-103014.

An action level of 5X the maximum contaminant concentration was established to evaluate blank contamination. Dilution factor and sample aliquot were taken into consideration during the application of the action level. Detected results below the established action level were qualified as non-detected, (U). Detections reported below the Limit of Detection (LOD) but above the Method Detection Limit (MDL) were raised to the LOD and qualified as non-detected, (U). The field blank was not qualified for laboratory blank contamination.

LABORATORY DUPLICATE RESULTS

The total and dissolved laboratory duplicate analysis performed on sample MW03-03Sa-NWG-103014 had a Percent Recoveries (%Rs) for zinc above the 20% quality control limit. All total and dissolved samples were affected. The detected results reported zinc not qualified for blank contamination in the affected samples were qualified as estimated, (J).

FIELD DUPLICATE PRECISION

The Relative Percent Difference (RPD) for zinc exceeded the 30% quality control limit in dissolved samples of the field duplicate pair, FD04-102914/MW03-01Sa-NWG-102914. In addition, the difference between the detected results in the total samples was greater than 2X the Limit of Quantitation (LOQ). All samples were affected. The detected results reported for zinc not qualified for blank contamination in the affected samples were qualified as estimated, (J).

NOTES

Detected results reported above the MDL but below the LOQ were qualified as estimated, (J). Non-detected results are reported to the LOD.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination was noted in the laboratory method and preparation blanks. The total and dissolved laboratory duplicate analyses had high %Rs for zinc.

Other Factors Affecting Data Quality: Field duplicate imprecision was noted for zinc.

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements Superfund Guidance/Procedures (April 2013), National Functional Guidelines for Inorganic Data Validation (January 2010), and the Department of Defense (DoD) document entitled, "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech, Inc.
Michelle L. Allen
Environmental Chemist

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD04-102914			MW01-13Sa-NWG-102714			MW02-06Sa-NWG-102914		
SDG: N2027	LAB_ID	N2027-17C			N2027-12A			N2027-02A			N2027-08A		
FRACTION: M	SAMP_DATE	10/30/2014			10/29/2014			10/27/2014			10/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				MW03-01Sa-NWG-102914								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3.1			50.6			22			12.8	U	A
ANTIMONY		0.29	J	P	0.26	J	P	0.28	J	P	0.36	J	P
ARSENIC		0.38	U		0.38	U		0.38	U		0.38	U	
BARIUM		2	U		73.7			5.6	J	P	8.2	J	P
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.15	U	
CADMIUM		0.15	U		0.29	U	A	0.15	U	A	0.15	U	
CALCIUM		38	U		24700			5710			12100		
CHROMIUM		0.25	J	P	0.35	J	P	1.1	J	P	0.25	U	
COBALT		0.05	U		0.9			0.56			0.15	U	A
COPPER		0.38	U		0.88	J	P	0.51	J	P	0.55	J	P
IRON		22.8	J	P	15.3	J	P	32.5	J	P	20	U	
LEAD		0.11			0.18	U	A	0.39	U	A	0.14	U	A
MAGNESIUM		12	U		6070			1620			1800		
MANGANESE		1	U		157			24.1			13.8		
MERCURY		0.05	U		0.05	U		0.05	U		0.05	U	
NICKEL		0.25	U		2.4			4.1			0.39	J	P
POTASSIUM		20	U		2730			1320			1290		
SELENIUM		0.25	U		0.25	U		0.25	U		0.25	U	
SILVER		0.1	U		0.1	U		0.1	U		0.1	U	
SODIUM		50	U		61600			8590			5710		
THALLIUM		0.075	U		0.075	U	A	0.075	U		0.075	U	
VANADIUM		1	U		1	U		1	U		1	U	
ZINC		5.4	J	FG	14.7	J	FG	9.3	U	A	7.2	U	A

PROJ_NO: 01813	NSAMPLE	MW03-01Sa-NWG-102914			MW03-03Sa-NWG-103014			MW03-16I-NWG-102814		
SDG: N2027	LAB_ID	N2027-10A			N2027-15C			N2027-04A		
FRACTION: M	SAMP_DATE	10/29/2014			10/30/2014			10/28/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		57			57.4			26.6		
ANTIMONY		0.29	J	P	0.27	J	P	0.35	J	P
ARSENIC		0.38	U		0.38	U		0.38	U	
BARIUM		76.8			9.4	J	P	15.5		
BERYLLIUM		0.15	U		0.15	U		0.24	U	A
CADMIUM		0.32	U	A	0.3	U	A	0.15	U	
CALCIUM		25000			11500			9590		
CHROMIUM		0.24	J	P	0.61	J	P	0.25	U	
COBALT		0.93			0.2	U	A	7.2		
COPPER		1.1	J	P	1.2	J	P	0.29	J	P
IRON		76.3	J	P	61.6	J	P	10800		
LEAD		0.22	U	A	0.31	U	A	0.2	U	A
MAGNESIUM		6110			2380			3700		
MANGANESE		159			49.1			373		
MERCURY		0.065	U	A	0.05	U		0.05	U	
NICKEL		2.3			2.7			16.8		
POTASSIUM		2730			1590			1670		
SELENIUM		0.25	U		0.25	U		0.25	U	
SILVER		0.1	U		0.1	U		0.1	U	
SODIUM		61800			12200			16300		
THALLIUM		0.075	U	A	0.075	U		0.075	U	
VANADIUM		1	U		1	U		1	U	
ZINC		6	U	A	16.9	J	FG	60.5	J	FG

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD04-102914			MW01-13Sa-NWG-102714			MW02-06Sa-NWG-102914		
SDG: N2027	LAB_ID	N2027-18A			N2027-13A			N2027-03A			N2027-09A		
FRACTION: MF	SAMP_DATE	10/30/2014			10/29/2014			10/27/2014			10/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				MW03-01SA-NWG-102914								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		6.5			48.9			22.1			15.6	U	A
ANTIMONY		0.29	J	P	0.28	J	P	0.4	J	P	0.3	J	P
ARSENIC		0.38	U		0.38	U		0.38	U		0.38	U	
BARIUM		2	U		76.9			5.4	J	P	8.1	J	P
BERYLLIUM		0.15	U		0.15	U		0.15	U		0.15	U	
CADMIUM		0.15	U		0.27	U	A	0.15	U	A	0.15	U	A
CALCIUM		38	U		26900			5520			11800		
CHROMIUM		0.5	J	P	0.55	J	P	0.85	J	P	0.25	U	
COBALT		0.05	U		0.64			0.52			0.19	U	A
COPPER		0.38	U		1	J	P	1.2	J	P	1.7	J	P
IRON		20	U		240			16.6	J	P	37.6	J	P
LEAD		0.11			0.3	U	A	0.19	U	A	0.17	U	A
MAGNESIUM		12	U		6580			1560			1780		
MANGANESE		1	U		180			22.5			13.9		
MERCURY		0.05	U		0.05	U		0.05	U		0.053	U	A
NICKEL		0.25	U		2.4			4.4			1.4		
POTASSIUM		20	U		2900			1280			1310		
SELENIUM		0.25	U		0.25	U		0.25	U		0.25	U	
SILVER		0.1	U		0.1	U		0.1	U	A	0.1	U	
SODIUM		50	U		63200			8320			5650		
THALLIUM		0.075	U		0.075	U	A	0.075	U		0.075	U	
VANADIUM		1	U		1	U		1	U		1	U	
ZINC		4.1	J	FG	47.4	J	FG	22.4	J	FG	11.8	J	FG

PROJ_NO: 01813	NSAMPLE	MW03-01Sa-NWG-102914			MW03-03Sa-NWG-103014			MW03-16I-NWG-102814		
SDG: N2027	LAB_ID	N2027-11A			N2027-16A			N2027-05A		
FRACTION: MF	SAMP_DATE	10/29/2014			10/30/2014			10/28/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		41.9			28.2			6.8	U	A
ANTIMONY		0.28	J	P	0.21	J	P	0.32	J	P
ARSENIC		0.38	U		0.38	U		0.38	U	
BARIUM		75.1			9.7	J	P	15.6		
BERYLLIUM		0.15	U		0.15	U		0.2	U	A
CADMIUM		0.27	U	A	0.15	U	A	0.15	U	
CALCIUM		25900			11600			9880		
CHROMIUM		0.33	J	P	0.85	J	P	0.25	U	
COBALT		0.65			0.18	U	A	7.4		
COPPER		1.6	J	P	1.4	J	P	0.85	J	P
IRON		20	U		20	U		10900		
LEAD		0.18	U	A	0.18	U	A	0.19	U	A
MAGNESIUM		6370			2380			3770		
MANGANESE		172			46.8			377		
MERCURY		0.05	U	A	0.05	U		0.05	U	
NICKEL		3			1.7			17.2		
POTASSIUM		2780			1600			1750		
SELENIUM		0.25	U		0.25	U		0.25	U	
SILVER		0.1	U		0.1	U		0.1	U	
SODIUM		60900			12200			16800		
THALLIUM		0.075	U	A	0.075	U		0.075	U	
VANADIUM		1	U		1	U		1	U	
ZINC		13.4	J	FG	11.3	J	FG	85.7	J	FG

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

FB03-103014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-17

Level (low/med): MED Date Received: 10/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	3.1	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.29	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2	U		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	38	U		MS	24.0	38.0	500
7440-47-3	Chromium	0.25	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.05	U		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	22.8	B		MS	14.0	20.0	200
7439-92-1	Lead	0.11	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	12	U		MS	7.8	12.0	500
7439-96-5	Manganese	1	U		MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.25	U		MS	0.17	0.25	1.0
7440-09-7	Potassium	20	U		MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	50	U		MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	5.4		*	MS	0.73	1.0	2.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD04-102914

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-12

Level (low/med): MED Date Received: 10/29/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	50.6			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.26	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	73.7			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.29	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	24700			MS	24.0	38.0	500
7440-47-3	Chromium	0.35	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.90	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.88	B		MS	0.23	0.38	2.0
7439-89-6	Iron	15.3	B		MS	14.0	20.0	200
7439-92-1	Lead	0.18	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	6070			MS	7.8	12.0	500
7439-96-5	Manganese	157			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	2.4			MS	0.17	0.25	1.0
7440-09-7	Potassium	2730			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	61600			MS	33.0	50.0	500
7440-28-0	Thallium	0.050	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	14.7		*	MS	0.73	1.0	2.0

Comments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-13SU-NWG-102714

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-02

Level (low/med): MED Date Received: 10/28/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	22.0			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.28	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.6	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.097	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	5710			MS	24.0	38.0	500
7440-47-3	Chromium	1.1	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.56	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.51	B		MS	0.23	0.38	2.0
7439-89-6	Iron	32.5	B		MS	14.0	20.0	200
7439-92-1	Lead	0.39	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1620			MS	7.8	12.0	500
7439-96-5	Manganese	24.1			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	4.1			MS	0.17	0.25	1.0
7440-09-7	Potassium	1320			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	8590			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	9.3		*	MS	0.73	1.0	2.0

Comments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-06SA-NWG-102914

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-08

Level (low/med): MED Date Received: 10/29/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	12.8	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.36	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.2	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	12100			MS	24.0	38.0	500
7440-47-3	Chromium	0.25	U		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.15	B		MS	0.024	0.050	1.0
7440-50-8	Copper	0.55	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.14	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1800			MS	7.8	12.0	500
7439-96-5	Manganese	13.8			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.39	B		MS	0.17	0.25	1.0
7440-09-7	Potassium	1290			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	5710			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	7.2		*	MS	0.73	1.0	2.0

Comments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-01SA-NWG-102914

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-10

Level (low/med): MED Date Received: 10/29/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	57.0			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.29	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	76.8			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.32	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	25000			MS	24.0	38.0	500
7440-47-3	Chromium	0.24	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.93	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.1	B		MS	0.23	0.38	2.0
7439-89-6	Iron	76.3	B		MS	14.0	20.0	200
7439-92-1	Lead	0.22	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	6110			MS	7.8	12.0	500
7439-96-5	Manganese	159			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.065	B		CV	0.028	0.050	0.20
7440-02-0	Nickel	2.3			MS	0.17	0.25	1.0
7440-09-7	Potassium	2730			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	61800			MS	33.0	50.0	500
7440-28-0	Thallium	0.060	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	6.0		*	MS	0.73	1.0	2.0

Comments:

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-03SA-NWG-103014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-15

Level (low/med): MED Date Received: 10/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	57.4			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.27	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	9.4	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.30	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	11500			MS	24.0	38.0	500
7440-47-3	Chromium	0.61	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.20	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.2	B		MS	0.23	0.38	2.0
7439-89-6	Iron	61.6	B		MS	14.0	20.0	200
7439-92-1	Lead	0.31	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2380			MS	7.8	12.0	500
7439-96-5	Manganese	49.1			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	2.7			MS	0.17	0.25	1.0
7440-09-7	Potassium	1590			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	12200			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	16.9		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-16I-NWG-102814

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-04

Level (low/med): MED Date Received: 10/28/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	26.6			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.35	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.5			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.24	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	9590			MS	24.0	38.0	500
7440-47-3	Chromium	0.25	U		MS	0.16	0.25	2.0
7440-48-4	Cobalt	7.2			MS	0.024	0.050	1.0
7440-50-8	Copper	0.29	B		MS	0.23	0.38	2.0
7439-89-6	Iron	10800			MS	14.0	20.0	200
7439-92-1	Lead	0.20	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	3700			MS	7.8	12.0	500
7439-96-5	Manganese	373			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	16.8			MS	0.17	0.25	1.0
7440-09-7	Potassium	1670			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	16300			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	60.5		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

FB03-103014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-18

Level (low/med): MED Date Received: 10/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	6.5	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.29	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	2	U		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	38	U		MS	24.0	38.0	500
7440-47-3	Chromium	0.50	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.05	U		MS	0.024	0.050	1.0
7440-50-8	Copper	0.38	U		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.11	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	12	U		MS	7.8	12.0	500
7439-96-5	Manganese	1	U		MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	0.25	U		MS	0.17	0.25	1.0
7440-09-7	Potassium	20	U		MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	50	U		MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	4.1		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD04-102914-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-13

Level (low/med): MED Date Received: 10/29/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	48.9			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.28	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	76.9			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.27	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	26900			MS	24.0	38.0	500
7440-47-3	Chromium	0.55	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.64	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.0	B		MS	0.23	0.38	2.0
7439-89-6	Iron	240			MS	14.0	20.0	200
7439-92-1	Lead	0.30	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	6580			MS	7.8	12.0	500
7439-96-5	Manganese	180			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	2.4			MS	0.17	0.25	1.0
7440-09-7	Potassium	2900			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	63200			MS	33.0	50.0	500
7440-28-0	Thallium	0.049	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	47.4		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW01-13SU-NWG-102714-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-03

Level (low/med): MED Date Received: 10/28/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	22.1			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.40	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	5.4	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.090	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	5520			MS	24.0	38.0	500
7440-47-3	Chromium	0.85	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.52	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.2	B		MS	0.23	0.38	2.0
7439-89-6	Iron	16.6	B		MS	14.0	20.0	200
7439-92-1	Lead	0.19	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1560			MS	7.8	12.0	500
7439-96-5	Manganese	22.5			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	4.4			MS	0.17	0.25	1.0
7440-09-7	Potassium	1280			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.025	B		MS	0.022	0.10	1.0
7440-23-5	Sodium	8320			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	22.4		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW02-06SA-NWG-102914-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-09

Level (low/med): MED Date Received: 10/29/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	15.6	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.30	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	8.1	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.088	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	11800			MS	24.0	38.0	500
7440-47-3	Chromium	0.25	U		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.19	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.7	B		MS	0.23	0.38	2.0
7439-89-6	Iron	37.6	B		MS	14.0	20.0	200
7439-92-1	Lead	0.17	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	1780			MS	7.8	12.0	500
7439-96-5	Manganese	13.9			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.053	B		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.4			MS	0.17	0.25	1.0
7440-09-7	Potassium	1310			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	5650			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	11.8		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-01SA-NWG-102914-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-11

Level (low/med): MED Date Received: 10/29/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	41.9			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.28	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	75.1			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.27	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	25900			MS	24.0	38.0	500
7440-47-3	Chromium	0.33	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.65	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.6	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.18	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	6370			MS	7.8	12.0	500
7439-96-5	Manganese	172			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.035	B		CV	0.028	0.050	0.20
7440-02-0	Nickel	3.0			MS	0.17	0.25	1.0
7440-09-7	Potassium	2780			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	60900			MS	33.0	50.0	500
7440-28-0	Thallium	0.051	B		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	13.4		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-03SA-NWG-103014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-16

Level (low/med): MED Date Received: 10/30/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	28.2			MS	2.9	6.8	20.0
7440-36-0	Antimony	0.21	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	9.7	B		MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.15	U		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.13	B		MS	0.084	0.15	1.0
7440-70-2	Calcium	11600			MS	24.0	38.0	500
7440-47-3	Chromium	0.85	B		MS	0.16	0.25	2.0
7440-48-4	Cobalt	0.18	B		MS	0.024	0.050	1.0
7440-50-8	Copper	1.4	B		MS	0.23	0.38	2.0
7439-89-6	Iron	20	U		MS	14.0	20.0	200
7439-92-1	Lead	0.18	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	2380			MS	7.8	12.0	500
7439-96-5	Manganese	46.8			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	1.7			MS	0.17	0.25	1.0
7440-09-7	Potassium	1600			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	12200			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	11.3		*	MS	0.73	1.0	2.0

Comments:

U.S. EPA - CLP

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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW03-16I-NWG-102814-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Lab Sample ID: N2027-05

Level (low/med): MED Date Received: 10/28/2014

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M	MDL	LOD	PQL
7429-90-5	Aluminum	4.3	B		MS	2.9	6.8	20.0
7440-36-0	Antimony	0.32	B		MS	0.20	0.20	2.0
7440-38-2	Arsenic	0.38	U		MS	0.19	0.38	2.0
7440-39-3	Barium	15.6			MS	1.3	2.0	10.0
7440-41-7	Beryllium	0.20	B		MS	0.072	0.15	1.0
7440-43-9	Cadmium	0.15	U		MS	0.084	0.15	1.0
7440-70-2	Calcium	9880			MS	24.0	38.0	500
7440-47-3	Chromium	0.25	U		MS	0.16	0.25	2.0
7440-48-4	Cobalt	7.4			MS	0.024	0.050	1.0
7440-50-8	Copper	0.85	B		MS	0.23	0.38	2.0
7439-89-6	Iron	10900			MS	14.0	20.0	200
7439-92-1	Lead	0.19	B		MS	0.068	0.15	1.0
7439-95-4	Magnesium	3770			MS	7.8	12.0	500
7439-96-5	Manganese	377			MS	0.83	1.0	2.0
7439-97-6	Mercury	0.05	U		CV	0.028	0.050	0.20
7440-02-0	Nickel	17.2			MS	0.17	0.25	1.0
7440-09-7	Potassium	1750			MS	14.0	20.0	500
7782-49-2	Selenium	0.25	U		MS	0.15	0.25	5.0
7440-22-4	Silver	0.1	U		MS	0.022	0.10	1.0
7440-23-5	Sodium	16800			MS	33.0	50.0	500
7440-28-0	Thallium	0.075	U		MS	0.048	0.075	1.0
7440-62-2	Vanadium	1	U		MS	0.61	1.0	5.0
7440-66-6	Zinc	85.7		*	MS	0.73	1.0	2.0

Comments:

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: # 01813 SDG: NJ027

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters: total & dissolved metals

Missing Information	Date Lab Contacted	Date Received

Validator: Michelle Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-I
Case: _____ SDG: _____

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

See DV letter

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler:_____ Company:_____ Contacted: Y N Date:_____

Validator: M. Allen Date: 12/16/04

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

See DV letter

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

III. CALIBRATIONS

See DV letter

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet
INORG-III-A/B
Case: _____ SDG: _____

III. CALIBRATIONS

see DV letter

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

IV. BLANKS

see DV letter

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample.

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet

INORG-IV-A/B

Case: _____ SDG: _____

IV. BLANKS - List the blank contamination and negative blank results below. See DV letter

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

Circle or list the highest concentration of each contaminant. See DV letter

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: M. Allen Date: 12/16/14

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB See DV letter

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen

Date: 12/16/14

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

see DV letter

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/16/14

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB See DV letter

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL. whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/16/14

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA see DV letter

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria. See DV letter

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

See DV letter

Sample No.: _____ Matrix: _____

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action
Comments:								

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample. See DV letter

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair. See DV letter

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____ See DV letter
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action
Comments:						

Validator: M. Aiken Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-XII
Case: _____ SDG: _____

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____ see DV letter

Are more than one-half of the LCS analytes within criteria for each parameter and method? Y N

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet
INORG-XIII
Case: _____ SDG: _____

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES See DV letter

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High. Action Low, Analyte Missed. Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: M. Allen Date: 12/16/14

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? Y N See DV letter

- If no, were any steps employed to address the high moisture content? _____
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: M. Allen Date: 12/16/14

APPENDIX D

SUPPORT DOCUMENTATION

N2027-13A 11/13/2014 6:02:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	7Li	9Be	10B	23Na	24Mg	25Mg	26Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:03:27	102.042%	0.000	0.035	12.990	TM 63040.000	T 6658.000	T 6556.000	T 6586.000	49.050	T 2893.000	T 26970.000	104.199%
2	18:04:14	102.169%	0.000	0.060	13.530	TM 62850.000	T 6674.000	T 6552.000	T 6589.000	48.520	T 2902.000	T 26830.000	105.482%
3	18:05:02	101.477%	0.000	0.034	13.120	TM 63580.000	T 6720.000	T 6621.000	T 6638.000	49.160	T 2907.000	T 26940.000	104.679%
X		101.896%	0.000	0.043	13.210	TM 63150.000	T 6684.000	T 6576.000	T 6605.000	48.910	T 2901.000	T 26910.000	104.787%
%RSD		0.362	0.000	35.290	2.146	TM 0.601	T 0.486	T 0.589	T 0.444	0.695	T 0.235	T 0.271	0.619
Run	**Time**	**47Ti**	**51V**	**52Cr**	**53Cr**	**53Cl O**	**54Fe**	**55Mn**	**56Fe**	**57Fe**	**59Co**	**60Ni**	**61Ni**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:03:27	0.637	0.013	0.579	ID 55.280	72.070	267.000	T 180.200	T 245.800	241.000	0.651	2.407	ID 14.710
2	18:04:14	0.436	0.168	0.515	ID 55.770	71.550	262.100	T 178.300	T 241.400	238.300	0.647	2.416	ID 15.510
3	18:05:02	0.550	0.051	0.546	ID 55.640	71.900	266.600	T 180.800	T 242.300	240.100	0.634	2.327	ID 14.900
X		0.541	0.077	0.547	ID 55.560	71.840	265.200	T 179.800	T 243.200	239.800	0.644	2.383	ID 15.040
%RSD		18.660	105.000	5.892	ID 0.456	0.370	1.029	T 0.708	T 0.965	0.574	1.385	2.059	ID 2.772
Run	**Time**	**63Cu**	**65Cu**	**66Zn**	**67Zn**	**68Zn**	**75As**	**78Se**	**82Se**	**83Kr**	**89Y**	**95Mo**	**97Mo**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:03:27	1.166	1.031	47.650	39.510	41.700	0.090	-0.375	-0.080	36.650	0.000	0.218	0.261
2	18:04:14	1.154	1.041	47.170	38.570	41.100	-0.055	-0.285	-0.271	36.250	0.000	0.212	0.244
3	18:05:02	1.221	1.036	47.240	38.910	41.410	0.088	-0.223	-0.382	38.710	0.000	0.256	0.233
X		1.180	1.036	47.350	39.000	41.410	0.041	-0.294	-0.245	37.200	0.000	0.229	0.246
%RSD		3.065	0.492	0.543	1.219	0.729	201.700	26.020	62.440	3.541	0.000	10.430	5.753
Run	**Time**	**103Rh**	**107Ag**	**108Mo O**	**109Ag**	**111Cd**	**114Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**137Ba**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:03:27	96.288%	0.006	-6.666	0.013	0.284	0.259	101.007%	0.178	0.282	0.262	76.580	75.860
2	18:04:14	97.622%	0.007	-7.100	0.015	0.282	0.263	101.960%	0.171	0.291	0.278	76.500	75.860
3	18:05:02	96.629%	0.007	-6.772	0.015	0.249	0.261	101.579%	0.174	0.276	0.272	77.510	76.050
X		96.846%	0.007	-6.846	0.014	0.271	0.261	101.516%	0.174	0.283	0.271	76.860	75.920
%RSD		0.716	4.994	3.304	6.689	7.249	0.743	0.472	2.047	2.655	2.967	0.727	0.147
Run	**Time**	**146Nd**	**152Sm**	**158Gd**	**159Tb**	**165Ho**	**166Er**	**175Lu**	**203Tl**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:03:27	2.642	0.403	0.354	107.767%	108.484%	0.139	109.858%	0.054	0.049	0.293	102.387%	0.000
2	18:04:14	2.532	0.395	0.406	108.569%	109.618%	0.145	110.906%	0.055	0.050	0.297	103.601%	0.000
3	18:05:02	2.456	0.371	0.402	108.051%	109.742%	0.147	110.557%	0.052	0.049	0.298	103.024%	0.000
X		2.543	0.390	0.387	108.129%	109.281%	0.144	110.440%	0.054	0.049	0.296	103.004%	0.000
%RSD		3.681	4.228	7.422	0.376	0.634	3.008	0.483	2.309	1.595	0.863	0.590	0.000

FORMER NCBC DAVISVILLE
WATER DATA
N2027

FRACTION	CHEMICAL	MW03-01Sa-NWG-102914	UNITS	FD04-102914	RPD	D
M	ALUMINUM	57	UG/L	50.6	11.90	6.40
M	ANTIMONY	0.29 J	UG/L	0.26 J	10.91	0.03
M	BARIUM	76.8	UG/L	73.7	4.12	3.10
M	CALCIUM	25000	UG/L	24700	1.21	300.00
M	CHROMIUM LOQ = 2	0.24 J	UG/L	0.35 J	37.29	0.11 ✓
M	COBALT	0.93	UG/L	0.9	3.28	0.03
M	COPPER	1.1 J	UG/L	0.88 J	22.22	0.22
M	IRON LOQ = 200	76.3 J	UG/L	15.3 J	133.19	61.00 ✓
M	MAGNESIUM	6110	UG/L	6070	0.66	40.00
M	MANGANESE	159	UG/L	157	1.27	2.00
M	NICKEL	2.3	UG/L	2.4	4.26	0.10
M	POTASSIUM	2730	UG/L	2730	0.00	0.00
M	SODIUM	61800	UG/L	61600	0.32	200.00
M	ZINC LOQ = 2 blank contamination ND (6)		UG/L	14.7 J	200.00	14.70
MF	ALUMINUM	41.9	UG/L	48.9	15.42	7.00
MF	ANTIMONY	0.28 J	UG/L	0.28 J	0.00	0.00
MF	BARIUM	75.1	UG/L	76.9	2.37	1.80
MF	CALCIUM	25900	UG/L	26900	3.79	1000.00
MF	CHROMIUM	0.33 J	UG/L	0.55 J	50.00	0.22 ✓
MF	COBALT	0.65	UG/L	0.64	1.55	0.01
MF	COPPER LOQ = 2	1.6 J	UG/L	1 J	46.15	0.60 ✓
MF	IRON	ND	UG/L	240	200.00	240.00
MF	MAGNESIUM	6370	UG/L	6580	3.24	210.00
MF	MANGANESE	172	UG/L	180	4.55	8.00
MF	NICKEL	3	UG/L	2.4	22.22	0.60
MF	POTASSIUM	2780	UG/L	2900	4.23	120.00
MF	SODIUM	60900	UG/L	63200	3.71	2300.00
MF	ZINC	13.4 J	UG/L	47.4 J	111.84	34.00

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

N2027

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HANIBAL TECHNOLOGY

Page _____ of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Ind icate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220

Telephone #: 412-921-7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01913 0000. 2123 WE01
Site Name: FMR AKBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Payon

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 - - 4 -

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

N2027 Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	Analyses: TPH-GRO	TPH-DRO	Naphthalene	metals	SVOCs, Pest/PCBs
01	TB10-102714	10-27-14	0700	G	QC	3	-	-	-	3	-	-	-	-	-
02	MW01-13SA-NWG-102714	↓	1456	G	GW	4	4	-	1	2	2	2	2	1	-
03	MW01-13SA-NWG-102714-F	↓	1456	G	GW	-	-	-	1	-	-	-	-	1	-
04	MW03-16I-NWG-102814	10-28-14	1317	G	GW	4	5	-	1	2	2	2	-	1	3
05	MW03-16I-NWG-102814-F	↓	1317	G	GW	-	-	-	1	2	2	2	-	1	3
06	FD03-102814	↓	0000	G	GW	-	3	-	-	-	-	-	-	-	3

'F' = Field Filtered

"F" = Field Filtered

Notes - Samples designated w/the -F were filtered in the Field.

Relinquished by:	Received by:	Date:	Time:	Temp°C
Walt Pa		10-28-14	16:13	2.1

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Page 6 of 1518

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JR

Revised Feb 2013

N2027

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Page _____ of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:
TAT- Ind icate Date Needed: _____
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220
Telephone #: 412 921-7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123 WE01
Site Name: FMC NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 – – 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	Analyses: TPH - Gro	TPH - Dro	Naphthalene	Total metals
07	TB11-102914	10-29-14	0700	G	QC	3	–	–	–	3	–	–	–	–
08	MW02-06sa-NWG-102914		0948	G	GW	4	4	–	1	2	2	2	2	1
09	MW02-06sa-NWG-102914-F		0948	G	GW	–	–	–	1	–	–	–	–	1
10	MW03-01sa-NWG-102914		1210	G	GW	4	4	–	1	2	2	2	2	1
11	MW03-01sa-NWG-102914-F		1210	G	GW	–	–	–	1	–	–	–	–	1
12	FD04-102914		0000	G	GW	4	4	–	1	2	2	2	2	1
13	FD04-102914	-F	0000	G	GW	–	–	–	1	–	–	–	–	1

Notes - Samples designated w/the F were Filtered in the Field

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
Natta Pr		10-29-14	16:07	5.1c
				5.7c
				IR

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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Revised Feb 2013

N2027

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page _____ of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Ind icate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220
Telephone #: 412 921 7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813-0000 2123
Site Name: FMR NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Payson

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2 – – 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

	Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		Analyses: VOCs	TPH-Gro	TPH-Dro	Naphthalene	Metals	Semivs/Pest PCBs			QA/QC Reporting Notes
14	15	TB12-103014	10-30-14	0700	G	QC	3	–	–	–	–	3	–	–	–	–	–			
15	16	MW03-03sa-GW-103014		1005	G	GW	12	12	–	2	–	6	6	6	6	2	–			* MS/MSD *
16	17	MW03-03sa-GW-103014-F		1005	G	GW	–	–	–	2	–	–	–	–	–	2	–			"F" Field Filtered
17	18	FB03-103014		1430	G	GW	4	6	–	1	–	2	2	2	2	1	2			
18	19	FB03-103014-F		1430	G	GW	–	–	–	1	–	–	–	–	–	1	–			"F" Field Filtered
		Notes: Samples designated W/ the F Were Filtered in the Field																		

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp °C
Matt Re		10-30-14	1650	5.6 / 3.6

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Page 8 of 1518

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/28/2014
Work Order: N2027	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	2.1 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/28/2014
12. Time Received	16:13

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N2027-01						H	
N2027-02	<2					H	
N2027-03	<2						
N2027-04	<2					H	
N2027-05	<2						
N2027-06							

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/29/2014
Work Order: N2027	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	5.7 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/29/2014
12. Time Received	16:07

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N2027-07						H	
N2027-08	<2					H	
N2027-09	<2					H	
N2027-10	<2					H	
N2027-11	<2					H	
N2027-12	<2					H	
N2027-13	<2					H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air

UA = Unpreserved Aqueous — H = HCl

M = MeOH — E = Encore

N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 10/30/2014
Work Order: N2027	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	5.6 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/30/2014
12. Time Received	16:01

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N2027-15	<2					H	
N2027-16	<2						
N2027-17	<2					H	
N2027-18	<2						

Sample Transfer	
Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 6020A, SW846 7470A

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test codes: SW846 6020A, SW846 7470A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3005A
Aqueous Samples were prepared following procedures in laboratory test code: SW7470A

V. INSTRUMENTATION

The following instrumentation was used:

Instrument Code: FIMS2
Instrument Type: CVAA
Description: FIMS
Manufacturer: Perkin-Elmer
Model: FIMS100

Instrument Code: X1
Instrument Type: ICPMS
Description: X1
Manufacturer: ThermoFisher
Model: X-Series 2

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for laboratory control samples were within the QC limits.

2. Matrix spike (MS):

Matrix spikes were performed on samples: MW03-03SA-NWG-103014 (N2027-15CMS) and MW03-03SA-NWG-103014-F (N2027-16AMS).

Percent recoveries were within the QC limits.

D. Post Digestion Spike (PDS):

A post-digestion spike was not performed on any sample in this SDG.

E. Duplicate sample:

Duplicate analyses were performed on samples: MW03-03SA-NWG-103014 (N2027-15CDUP) and MW03-03SA-NWG-103014-F (N2027-16ADUP).

Relative percent differences were within the QC limits with the following exceptions:

MW03-03SA-NWG-103014 (N2027-15CDUP), Duplicate analysis not within control limit for Zinc.

MW03-03SA-NWG-103014-F (N2027-16ADUP-DISS), Duplicate analysis not within control limit for Zinc.

F. Serial Dilution (SD):

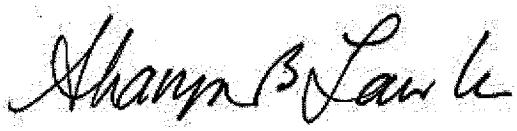
Serial Dilution analyses were performed on samples: MW03-03SA-NWG-103014 (N2027-15CSD) and MW03-03SA-NWG-103014-F (N2027-16ASD).

Percent differences were within the QC limits.

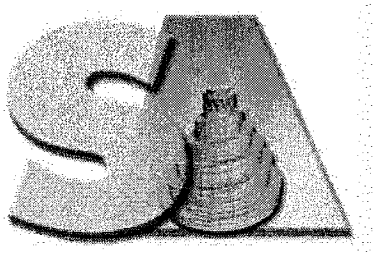
G. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed: 

Date: 11/20/2014



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

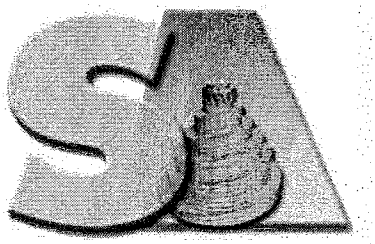
B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

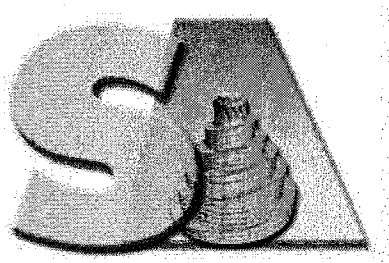


Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

Report Date:
21-Nov-14 08:24

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Work Order: N2027
Project : CED Area, WE01-Davisville
Project #:

Attn: Amy Thomson

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N2027-01	TB10-102714	Aqueous	27-Oct-14 07:00	28-Oct-14 16:13
N2027-02	MW01-13SU-NWG-102714	Aqueous	27-Oct-14 14:56	28-Oct-14 16:13
N2027-03	MW01-13SU-NWG-102714-F	Aqueous	27-Oct-14 14:56	28-Oct-14 16:13
N2027-04	MW03-16I-NWG-102814	Aqueous	28-Oct-14 13:17	28-Oct-14 16:13
N2027-05	MW03-16I-NWG-102814-F	Aqueous	28-Oct-14 13:17	28-Oct-14 16:13
N2027-06	FD03-102814	Aqueous	28-Oct-14 00:00	28-Oct-14 16:13
N2027-07	TB11-102914	Aqueous	29-Oct-14 07:00	29-Oct-14 16:07
N2027-08	MW02-06SA-NWG-102914	Aqueous	29-Oct-14 09:48	29-Oct-14 16:07
N2027-09	MW02-06SA-NWG-102914-F	Aqueous	29-Oct-14 09:48	29-Oct-14 16:07
N2027-10	MW03-01SA-NWG-102914	Aqueous	29-Oct-14 12:10	29-Oct-14 16:07
N2027-11	MW03-01SA-NWG-102914-F	Aqueous	29-Oct-14 12:10	29-Oct-14 16:07
N2027-12	FD04-102914	Aqueous	29-Oct-14 00:00	29-Oct-14 16:07
N2027-13	FD04-102914-F	Aqueous	29-Oct-14 00:00	29-Oct-14 16:07
N2027-14	TB12-103014	Aqueous	30-Oct-14 07:00	30-Oct-14 16:01
N2027-15	MW03-03SA-NWG-103014	Aqueous	30-Oct-14 10:05	30-Oct-14 16:01
N2027-16	MW03-03SA-NWG-103014-F	Aqueous	30-Oct-14 10:05	30-Oct-14 16:01
N2027-17	FB03-103014	Aqueous	30-Oct-14 14:30	30-Oct-14 16:01
N2027-18	FB03-103014-F	Aqueous	30-Oct-14 14:30	30-Oct-14 16:01

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

N2027

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: N2027

Client ID: TETRA_NAVY **Case:** **HC Due:** 11/18/14 **Report Level:** LEVEL 4A
Project: CED Area, WE01-Davisville **SDG:** **Fax Due:** **Special Program:** *DoD*
WO Name: CED Area, WE01-Davisville **Fax Report:** ☐ **EDD:** ADAPT_TTNUS
Location: WE01_CED_DAVISVILLE, **PO:** WR--1-CTO WE01, AGMT-110631
Comments: CD and HC to Amy Thomson. Upload EDD and PDF to TT system as well. Added PEST/PCB to sample -17B.

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N2027-01A	TB10-102714	10/27/2014 07:00	10/28/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-02A	MW01-13SU-NWG-102714	10/27/2014 14:56	10/28/2014	Aqueous	SW6020_W	/ TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-02A	MW01-13SU-NWG-102714	10/27/2014 14:56	10/28/2014	Aqueous	SW7470	/					M3
N2027-02B	MW01-13SU-NWG-102714	10/27/2014 14:56	10/28/2014	Aqueous	GRO_W	/					VOA
N2027-02B	MW01-13SU-NWG-102714	10/27/2014 14:56	10/28/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-02C	MW01-13SU-NWG-102714	10/27/2014 14:56	10/28/2014	Aqueous	BNA_SIM_W	/ Naphthalene only				Y	W2
N2027-02C	MW01-13SU-NWG-102714	10/27/2014 14:56	10/28/2014	Aqueous	TPH_W	/ C9 - C40					W2
N2027-03A	MW01-13SU-NWG-102714-F	10/27/2014 14:56	10/28/2014	Aqueous	SW6020_W	DISSOLVED / TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-03A	MW01-13SU-NWG-102714-F	10/27/2014 14:56	10/28/2014	Aqueous	SW7470	DISSOLVED /					M3
N2027-04A	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	SW6020_W	/ TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-04A	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	SW7470	/					M3
N2027-04B	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	GRO_W	/					VOA
N2027-04B	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-04C	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	SW8081_W	/					W2
N2027-04C	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	SW8082_W	/					W2
N2027-04C	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	SW8270_W	/ TCL OLM4_SVOA,				Y	W2
N2027-04C	MW03-16I-NWG-102814	10/28/2014 13:17	10/28/2014	Aqueous	TPH_W	/ C9 - C40					W2
N2027-05A	MW03-16I-NWG-102814-F	10/28/2014 13:17	10/28/2014	Aqueous	SW6020_W	DISSOLVED / TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-05A	MW03-16I-NWG-102814-F	10/28/2014 13:17	10/28/2014	Aqueous	SW7470	DISSOLVED /					M3
N2027-06A	FD03-102814	10/28/2014 00:00	10/28/2014	Aqueous	SW8081_W	/					W2
N2027-06A	FD03-102814	10/28/2014 00:00	10/28/2014	Aqueous	SW8082_W	/					W2

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

Page 1 of 1518

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: N2027

Client ID: TETRA_NAVY **Case:** **HC Due:** 11/18/14 **Report Level:** LEVEL 4A
Project: CED Area, WE01-Davisville **SDG:** **Fax Due:** **Special Program:** DoD
WO Name: CED Area, WE01-Davisville **Fax Report:** ☐ **EDD:** ADAPT_TTNUS
Location: WE01_CED_DAVISVILLE, **PO:** WR--1-CTO WE01, AGMT-110631
Comments: CD and HC to Amy Thomson. Upload EDD and PDF to TT system as well. Added PEST/PCB to sample -17B.

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N2027-06A	FD03-102814	10/28/2014 00:00	10/28/2014	Aqueous	SW8270_W	/ TCL OLM4_SVOA,				Y	W2
N2027-07A	TB11-102914	10/29/2014 07:00	10/29/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-08A	MW02-06SA-NWG-102914	10/29/2014 09:48	10/29/2014	Aqueous	SW6020_W	/ TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-08A	MW02-06SA-NWG-102914	10/29/2014 09:48	10/29/2014	Aqueous	SW7470	/					M3
N2027-08B	MW02-06SA-NWG-102914	10/29/2014 09:48	10/29/2014	Aqueous	GRO_W	/					VOA
N2027-08B	MW02-06SA-NWG-102914	10/29/2014 09:48	10/29/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-08C	MW02-06SA-NWG-102914	10/29/2014 09:48	10/29/2014	Aqueous	BNA_SIM_W	/ Naphthalene only				Y	W2
N2027-08C	MW02-06SA-NWG-102914	10/29/2014 09:48	10/29/2014	Aqueous	TPH_W	/ C9 - C40					W2
N2027-09A	MW02-06SA-NWG-102914-F	10/29/2014 09:48	10/29/2014	Aqueous	SW6020_W	DISSOLVED / TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-09A	MW02-06SA-NWG-102914-F	10/29/2014 09:48	10/29/2014	Aqueous	SW7470	DISSOLVED /					M3
N2027-10A	MW03-01SA-NWG-102914	10/29/2014 12:10	10/29/2014	Aqueous	SW6020_W	/ TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-10A	MW03-01SA-NWG-102914	10/29/2014 12:10	10/29/2014	Aqueous	SW7470	/					M3
N2027-10B	MW03-01SA-NWG-102914	10/29/2014 12:10	10/29/2014	Aqueous	GRO_W	/					VOA
N2027-10B	MW03-01SA-NWG-102914	10/29/2014 12:10	10/29/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-10C	MW03-01SA-NWG-102914	10/29/2014 12:10	10/29/2014	Aqueous	BNA_SIM_W	/ Naphthalene only				Y	W2
N2027-10C	MW03-01SA-NWG-102914	10/29/2014 12:10	10/29/2014	Aqueous	TPH_W	/ C9 - C40					W2
N2027-11A	MW03-01SA-NWG-102914-F	10/29/2014 12:10	10/29/2014	Aqueous	SW6020_W	DISSOLVED / TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-11A	MW03-01SA-NWG-102914-F	10/29/2014 12:10	10/29/2014	Aqueous	SW7470	DISSOLVED /					M3
N2027-12A	FD04-102914	10/29/2014 00:00	10/29/2014	Aqueous	SW6020_W	/ TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-12A	FD04-102914	10/29/2014 00:00	10/29/2014	Aqueous	SW7470	/					M3

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: N2027

Client ID: TETRA_NAVY **Case:** **HC Due:** 11/18/14 **Report Level:** LEVEL 4A
Project: CED Area, WE01-Davisville **SDG:** **Fax Due:** **Special Program:** DoD
WO Name: CED Area, WE01-Davisville **Fax Report:** ☐ **EDD:** ADAPT_TTNUS
Location: WE01_CED_DAVISVILLE, **PO:** WR--1-CTO WE01, AGMT-110631
Comments: CD and HC to Amy Thomson. Upload EDD and PDF to TT system as well. Added PEST/PCB to sample -17B.

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N2027-12B	FD04-102914	10/29/2014 00:00	10/29/2014	Aqueous	GRO_W	/					VOA
N2027-12B	FD04-102914	10/29/2014 00:00	10/29/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-12C	FD04-102914	10/29/2014 00:00	10/29/2014	Aqueous	BNA_SIM_W	/ Naphthalene only				Y	W2
N2027-12C	FD04-102914	10/29/2014 00:00	10/29/2014	Aqueous	TPH_W	/ C9 - C40					W2
N2027-13A	FD04-102914-F	10/29/2014 00:00	10/29/2014	Aqueous	SW6020_W	DISSOLVED / TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-13A	FD04-102914-F	10/29/2014 00:00	10/29/2014	Aqueous	SW7470	DISSOLVED /					M3
N2027-14A	TB12-103014	10/30/2014 07:00	10/30/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-15A	MW03-03SA-NWG-103014	10/30/2014 10:05	10/30/2014	Aqueous	GRO_W	/			Y		VOA
N2027-15A	MW03-03SA-NWG-103014	10/30/2014 10:05	10/30/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,			Y	Y	VOA
N2027-15B	MW03-03SA-NWG-103014	10/30/2014 10:05	10/30/2014	Aqueous	BNA_SIM_W	/ Naphthalene only			Y	Y	W2
N2027-15B	MW03-03SA-NWG-103014	10/30/2014 10:05	10/30/2014	Aqueous	TPH_W	/ C9 - C40			Y		W2
N2027-15C	MW03-03SA-NWG-103014	10/30/2014 10:05	10/30/2014	Aqueous	SW6020_W	/ TAL, TAL list (also needs Hg 7470)			Y	Y	M3
N2027-15C	MW03-03SA-NWG-103014	10/30/2014 10:05	10/30/2014	Aqueous	SW7470	/			Y		M3
N2027-16A	MW03-03SA-NWG-103014-F	10/30/2014 10:05	10/30/2014	Aqueous	SW6020_W	DISSOLVED / TAL, TAL list (also needs Hg 7470)			Y	Y	M3
N2027-16A	MW03-03SA-NWG-103014-F	10/30/2014 10:05	10/30/2014	Aqueous	SW7470	DISSOLVED /			Y		M3
N2027-17A	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	GRO_W	/					VOA
N2027-17A	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	SW8260_W	/ TCL OLM_VOA,				Y	VOA
N2027-17B	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	BNA_SIM_W	/ Naphthalene only				Y	W2
N2027-17B	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	SW8081_W	/					W2
N2027-17B	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	SW8082_W	/					W2
N2027-17B	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	SW8270_W	/ TCL OLM4_SVOA,				Y	W2

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

N2027

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: N2027

Client ID: TETRA_NAVY | **Case:** | **HC Due:** 11/18/14 | **Report Level:** LEVEL 4A

Project: CED Area, WE01-Davisville | **SDG:** | **Fax Due:** | **Special Program:** *DoD*

WO Name: CED Area, WE01-Davisville | **Fax Report:** ☐ | **EDD:** ADAPT_TTNUS

Location: WE01_CED_DAVISVILLE, | **PO:** WR--1-CTO WE01, AGMT-110631

Comments: CD and HC to Amy Thomson. Upload EDD and PDF to TT system as well. Added PEST/PCB to sample -17B.

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N2027-17B	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	TPH_W	/ C9 - C40					W2
N2027-17C	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	SW6020_W	/ TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-17C	FB03-103014	10/30/2014 14:30	10/30/2014	Aqueous	SW7470	/					M3
N2027-18A	FB03-103014-F	10/30/2014 14:30	10/30/2014	Aqueous	SW6020_W	DISSOLVED / TAL, TAL list (also needs Hg 7470)				Y	M3
N2027-18A	FB03-103014-F	10/30/2014 14:30	10/30/2014	Aqueous	SW7470	DISSOLVED /					M3

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 11

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

SOW No.: SW846

EPA Sample No.	Lab Sample ID
FB03-103014	N2027-17
FB03-103014-F	N2027-18
FD04-102914	N2027-12
FD04-102914-F	N2027-13
MW01-13SU-NWG-102714	N2027-02
MW01-13SU-NWG-102714-F	N2027-03
MW02-06SA-NWG-102914	N2027-08
MW02-06SA-NWG-102914-F	N2027-09
MW03-01SA-NWG-102914	N2027-10
MW03-01SA-NWG-102914-F	N2027-11
MW03-03SA-NWG-103014	N2027-15
MW03-03SA-NWG-103014-F	N2027-16
MW03-03SA-NWG-103014-FD	N2027-16DUP
MW03-03SA-NWG-103014-FS	N2027-16MS
MW03-03SA-NWG-103014D	N2027-15DUP
MW03-03SA-NWG-103014S	N2027-15MS
MW03-16I-NWG-102814	N2027-04
MW03-16I-NWG-102814-F	N2027-05

Were ICP interelement corrections applied? Yes/No Yes

Were background corrections applied? Yes/No Yes

If yes-were raw data generated before application of background corrections? Yes/No No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature

Signature: Sharyn B Lawler Name: Sharyn B. Lawler

Date: 11/20/14 Title: QAD

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METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Instrument Type: CV InstrumentID: FIMS2 Date: 03/04/2010

Preparation Method: 7470A

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Wavelength /Mass	CRDL	MDL
Mercury	253.70	0.2	0.028

Comments:

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METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Instrument Type: MS InstrumentID: X1 Date: 03/02/2010

Preparation Method: 3005A

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Wavelength /Mass	CRDL	MDL
Aluminum	26.98	20	2.9
Antimony	120.90	2.0	0.20
Arsenic	74.92	2.0	0.19
Barium	134.90	10	1.3
Beryllium	9.01	1.0	0.072
Cadmium	110.90	1.0	0.084
Calcium	43.95	500	24.0
Chromium	51.94	2.0	0.16
Cobalt	58.93	1.0	0.024
Copper	64.92	2.0	0.23
Iron	56.93	200	14.0
Lead	207.97	1.0	0.068
Magnesium	24.98	500	7.8
Manganese	54.93	2.0	0.83
Nickel	59.93	1.0	0.17
Potassium	38.96	500	14.0
Selenium	81.91	5.0	0.15
Silver	106.90	1.0	0.022
Sodium	22.98	500	33.0
Thallium	202.97	1.0	0.048
Vanadium	50.94	5.0	0.61
Zinc	65.92	2.0	0.73

Comments:

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11-IN

INTERNAL STANDARD ASSOCIATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN2027

ICP-MS Instrument ID: X1 Date: 11/13/2014

Analyte	Assoc. Internal Standard 1	Assoc. Internal Standard 2
Aluminum	6Li	45Sc
Antimony	115In	175Lu
Arsenic	45Sc	103Rh
Barium	115In	175Lu
Beryllium	6Li	45Sc
Boron	6Li	45Sc
Cadmium	103Rh	115In
Calcium	6Li	45Sc
Chromium	45Sc	103Rh
Cobalt	45Sc	103Rh
Copper	45Sc	103Rh
Iron	45Sc	103Rh
Lead	175Lu	209Bi
Magnesium	6Li	45Sc
Molydbenum	45Sc	103Rh
Manganese	45Sc	103Rh
Nickel	45Sc	103Rh
Potassium	6Li	45Sc
Selenium	45Sc	103Rh
Silver	103Rh	115In
Sodium	6Li	45Sc
Thallium	175Lu	209Bi
Vanadium	45Sc	103Rh
Zinc	45Sc	103Rh

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Preparation Method: 3005A Batch ID: 79919

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FB03-103014	11/07/2014		50
FB03-103014-F	11/07/2014		50
FD04-102914	11/07/2014		50
FD04-102914-F	11/07/2014		50
LCW	11/07/2014		50
MW01-13SU-NWG-102714	11/07/2014		50
MW01-13SU-NWG-102714-F	11/07/2014		50
MW02-06SA-NWG-102914	11/07/2014		50
MW02-06SA-NWG-102914-F	11/07/2014		50
MW03-01SA-NWG-102914	11/07/2014		50
MW03-01SA-NWG-102914-F	11/07/2014		50
MW03-03SA-NWG-103014	11/07/2014		50
MW03-03SA-NWG-103014-F	11/07/2014		50
MW03-03SA-NWG-103014-FD	11/07/2014		50
MW03-03SA-NWG-103014-FS	11/07/2014		50
MW03-03SA-NWG-103014D	11/07/2014		50
MW03-03SA-NWG-103014S	11/07/2014		50
MW03-16I-NWG-102814	11/07/2014		50
MW03-16I-NWG-102814-F	11/07/2014		50
PBW	11/07/2014		50

Comments:

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCS-79919

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Aluminum	2000.0	2097.34	104.9						
Antimony	100.0	100.87	100.9						
Arsenic	40.0	39.97	99.9						
Barium	2000.0	1971.40	98.6						
Beryllium	50.0	51.38	102.8						
Cadmium	50.0	50.97	101.9						
Calcium	5000.0	5171.47	103.4						
Chromium	200.0	214.77	107.4						
Cobalt	500.0	519.13	103.8						
Copper	250.0	268.37	107.3						
Iron	1000.0	1089.79	109.0						
Lead	20.0	19.56	97.8						
Magnesium	5000.0	5068.00	101.4						
Manganese	500.0	517.33	103.5						
Nickel	500.0	516.45	103.3						
Potassium	5000.0	5170.16	103.4						
Selenium	50.0	50.63	101.3						
Silver	50.0	51.51	103.0						
Sodium	5000.0	5134.97	102.7						
Thallium	50.0	49.60	99.2						
Vanadium	500.0	530.66	106.1						
Zinc	500.0	530.53	106.1						

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5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MW03-03SA-NWG-103014S

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2060		57.4		2000	100		MS
Antimony	75-125	93.2		0.27	B	100	93		MS
Arsenic	75-125	35.5		0.19	U	40.0	89		MS
Barium	75-125	1920		9.4	B	2000	95		MS
Beryllium	75-125	48.0		0.072	U	50.0	96		MS
Cadmium	75-125	46.4		0.30	B	50.0	92		MS
Chromium	75-125	202		0.61	B	200	101		MS
Cobalt	75-125	481		0.20	B	500	96		MS
Copper	75-125	250		1.2	B	250	99		MS
Iron	75-125	1060		61.6	B	1000	100		MS
Lead	75-125	18.6		0.31	B	20.0	92		MS
Manganese	75-125	531		49.1		500	96		MS
Nickel	75-125	480		2.7		500	95		MS
Selenium	75-125	43.5		0.15	U	50.0	87		MS
Silver	75-125	50.6		0.022	U	50.0	101		MS
Thallium	75-125	47.1		0.048	U	50.0	94		MS
Vanadium	75-125	500		0.61	U	500	100		MS
Zinc	75-125	501		16.9		500	97		MS
Mercury	75-125	4.5		0.028	U	4.6	99		CV

Comments:

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DUPLICATES

EPA SAMPLE NO.

MW03-03SA-NWG-103014D

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	20.0	57.4497		51.7013		10.5		MS
Antimony		0.2697	B	0.2695	B	0.1		MS
Arsenic		0.1900	U	0.1900	U			MS
Barium		9.4187	B	8.8000	B	6.8		MS
Beryllium		0.0720	U	0.0720	U			MS
Cadmium		0.2956	B	0.2777	B	6.2		MS
Calcium		11513.0923		10902.3187		5.4		MS
Chromium		0.6142	B	0.7455	B	19.3		MS
Cobalt		0.2037	B	0.1837	B	10.3		MS
Copper		1.2012	B	1.2998	B	7.9		MS
Iron		61.6002	B	67.9025	B	9.7		MS
Lead		0.3105	B	0.2871	B	7.8		MS
Magnesium	500.0	2375.3871		2269.1373		4.6		MS
Manganese		49.1367		46.7642		4.9		MS
Nickel	1.0	2.6719		2.5071		6.4		MS
Potassium	500.0	1594.0778		1512.9596		5.2		MS
Selenium		0.1500	U	0.1500	U			MS
Silver		0.0220	U	0.0220	U			MS
Sodium		12184.8701		11477.8987		6		MS
Thallium		0.0480	U	0.0480	U			MS
Vanadium		0.6100	U	0.6100	U			MS
Zinc		16.9336		24.6153		37	*	MS
Mercury		0.0280	U	0.0280	U			CV

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ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MW03-03SA-NWG-103014

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Level (low/med): MED

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	57.45		58.56		2		MS
Antimony	0.27	B	1.00	U	100		MS
Arsenic	0.19	U	0.95	U			MS
Barium	9.42	B	11.25		19		MS
Beryllium	0.07	U	0.36	U			MS
Cadmium	0.30	B	0.42	U	100		MS
Calcium	11513.09		11542.00		0		MS
Chromium	0.61	B	1.33	B	118		MS
Cobalt	0.20	B	0.73	B	265		MS
Copper	1.20	B	1.32	B	10		MS
Iron	61.60	B	70.00	U	100		MS
Lead	0.31	B	0.34	U	100		MS
Magnesium	2375.39		2377.95		0		MS
Manganese	49.14		49.21		0		MS
Nickel	2.67		3.07		15		MS
Potassium	1594.08		1583.70		1		MS
Selenium	0.15	U	0.75	U			MS
Silver	0.02	U	0.11	U			MS
Sodium	12184.87		12036.63		1		MS
Thallium	0.05	U	0.24	U			MS
Vanadium	0.61	U	3.05	U			MS
Zinc	16.93		17.71		5		MS

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5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.: MW03-03SA-NWG-103014-FS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2060		28.2		2000	102		MS
Antimony	75-125	98.3		0.21	B	100	98		MS
Arsenic	75-125	37.0		0.19	U	40.0	93		MS
Barium	75-125	1930		9.7	B	2000	96		MS
Beryllium	75-125	48.6		0.072	U	50.0	97		MS
Cadmium	75-125	48.7		0.13	B	50.0	97		MS
Chromium	75-125	203		0.85	B	200	101		MS
Cobalt	75-125	487		0.18	B	500	97		MS
Copper	75-125	252		1.4	B	250	100		MS
Iron	75-125	1020		14.0	U	1000	102		MS
Lead	75-125	19.6		0.18	B	20.0	97		MS
Manganese	75-125	535		46.8		500	98		MS
Nickel	75-125	485		1.7		500	97		MS
Selenium	75-125	45.3		0.15	U	50.0	91		MS
Silver	75-125	50.7		0.022	U	50.0	102		MS
Thallium	75-125	49.8		0.048	U	50.0	100		MS
Vanadium	75-125	504		0.61	U	500	101		MS
Zinc	75-125	493		11.3		500	96		MS
Mercury	75-125	4.5		0.028	U	4.6	100		CV

Comments:

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DUPLICATES

EPA SAMPLE NO.

MW03-03SA-NWG-103014-FD

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	20.0	28.1637		27.2318		3.4		MS
Antimony		0.2060	B	0.2325	B	12.1		MS
Arsenic		0.1900	U	0.1900	U			MS
Barium		9.6675	B	8.6453	B	11.2		MS
Beryllium		0.0720	U	0.0720	U			MS
Cadmium		0.1348	B	0.1370	B	1.6		MS
Calcium		11564.6287		11256.4629		2.7		MS
Chromium		0.8503	B	0.1600	U	200		MS
Cobalt		0.1809	B	0.1718	B	5.2		MS
Copper		1.4246	B	1.4686	B	3		MS
Iron		14.0000	U	14.0000	U			MS
Lead		0.1829	B	0.2157	B	16.5		MS
Magnesium	500.0	2382.0704		2321.8722		2.6		MS
Manganese		46.7913		45.6278		2.5		MS
Nickel	1.0	1.6814		1.5583		7.6		MS
Potassium	500.0	1603.7181		1561.1253		2.7		MS
Selenium		0.1500	U	0.1500	U			MS
Silver		0.0220	U	0.0220	U			MS
Sodium		12234.2482		11906.3663		2.7		MS
Thallium		0.0480	U	0.0480	U			MS
Vanadium		0.6100	U	0.6100	U			MS
Zinc	2.0	11.3475		7.9400		35.3	*	MS
Mercury		0.0280	U	0.0280	U			CV

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ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MW03-03SA-NWG-103014-F

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO W

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Matrix (soil/water): WATER Level (low/med): MED

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	28.16		32.25		15		MS
Antimony	0.21	B	1.00	U	100		MS
Arsenic	0.19	U	0.95	U			MS
Barium	9.67	B	13.68		42		MS
Beryllium	0.07	U	0.36	U			MS
Cadmium	0.13	B	0.42	U	100		MS
Calcium	11564.63		11597.74		0		MS
Chromium	0.85	B	0.93	B	9		MS
Cobalt	0.18	B	1.33		639		MS
Copper	1.42	B	1.83	B	29		MS
Iron	14.00	U	70.00	U			MS
Lead	0.18	B	0.34	U	100		MS
Magnesium	2382.07		2356.23		1		MS
Manganese	46.79		47.08		1		MS
Nickel	1.68		2.65		58		MS
Potassium	1603.72		1603.97		0		MS
Selenium	0.15	U	0.75	U			MS
Silver	0.02	U	0.11	U			MS
Sodium	12234.25		12141.55		1		MS
Thallium	0.05	U	0.24	U			MS
Vanadium	0.61	U	3.05	U			MS
Zinc	11.35		12.19		7		MS

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14-IN

ICP-MS TUNE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN2027

ICP-MS Instrument ID: X1 Date: 11/13/2014

Element - Mass	Avg. Measured Mass (amu)	Average Peak Width (amu)	% Height	% RSD
Be - 9	8.96	0.73	5.0	1.17
Mg - 24	23.97	0.73	5.0	0.39
Mg - 25	24.97	0.73	5.0	1.29
Mg - 26	25.97	0.73	5.0	1.09
Co - 59	58.92	0.75	5.0	0.74
In - 113	112.91	0.77	5.0	1.00
In - 115	114.91	0.79	5.0	0.43
Pb - 206	205.96	0.79	5.0	0.70
Pb - 207	206.96	0.79	5.0	0.46
Pb - 208	207.96	0.80	5.0	0.23

Comments:

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15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN2027

ICP-MS Instrument ID: X1 Start Date: 11/13/2014 End Date: 11/13/2014

X1_141113B

EPA Sample No.	Time	Internal Standards %RI For: Element Li	Q	Element Sc	Q	Element Rh	Q	Element In	Q	Element Lu	Q	Element Bi	Q
SO	1531	100		100		100		100		100		100	
S	1536	101		101		101		100		100		99	
S	1541	102		102		102		102		102		99	
S	1546	102		102		102		101		102		99	
S	1551	98		100		100		101		103		99	
S	1556	94		99		96		98		105		97	
S	1601	93		102		95		98		107		96	
ICV	1606	97		103		99		102		108		100	
ICB	1611	97		101		104		103		104		103	
ZZZZZZ	1616	100		104		106		105		104		102	
ICSA	1621	80		94		84		95		97		85	
ICSAB	1627	76		90		80		92		97		85	
ICSA	1632	80		84		86		92		103		99	
ICSAB	1637	80		84		86		91		102		98	
CCV	1642	84		89		87		92		103		100	
CCB	1647	84		86		92		94		100		100	
PBW	1652	89		91		96		97		103		104	
LCW	1657	87		88		89		95		102		101	
ZZZZZZ	1702	82		83		87		90		98		98	
MW01-13SU-NWG-102714	1707	93		94		93		95		101		101	
MW01-13SU-NWG-102714-F	1712	98		98		96		98		104		101	
MW03-16I-NWG-102814	1717	84		85		86		89		99		96	
MW03-16I-NWG-102814-F	1722	85		86		87		90		100		97	
MW02-06SA-NWG-102914	1727	87		87		89		92		100		97	
CCV	1732	92		96		94		98		108		100	
CCB	1737	89		90		95		97		101		100	
MW02-06SA-NWG-102914-F	1742	92		93		94		96		103		101	
MW03-01SA-NWG-102914	1747	98		101		96		100		109		100	
MW03-01SA-NWG-102914-F	1752	100		103		97		101		109		100	
FD04-102914	1757	102		106		99		103		111		103	

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15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: Mod. Ref. No.: SDG No.: SN2027

ICP-MS Instrument ID: X1 Start Date: 11/13/2014 End Date: 11/13/2014

X1_141113B

EPA Sample No.	Time	Internal Standards %RI For: Element Li	Q	Element Sc	Q	Element Rh	Q	Element In	Q	Element Lu	Q	Element Bi	Q
FD04-102914-F	1802	102		105		97		102		110		103	
MW03-03SA-NWG-103014	1807	100		101		98		101		108		107	
MW03-03SA-NWG-103014D	1812	101		101		98		101		107		105	
MW03-03SA-NWG-103014S	1817	99		101		94		101		107		104	
MW03-03SA-NWG-103014L	1822	103		102		102		104		108		109	
CCV	1827	95		99		95		100		110		103	
CCB	1832	94		96		99		101		106		107	
MW03-03SA-NWG-103014-F	1837	94		97		95		99		107		105	
MW03-03SA-NWG-103014-FD	1842	97		98		97		100		108		106	
MW03-03SA-NWG-103014-FS	1847	96		98		93		100		107		104	
MW03-03SA-NWG-103014-FL	1853	101		102		102		104		109		109	
FB03-103014	1858	105		104		104		105		108		109	
FB03-103014-F	1903	105		103		103		105		108		108	
CCV	1908	95		100		96		101		110		104	
CCB	1913	94		96		99		101		107		108	

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Instrument ID Number: X1 Method: MS

Start Date: 11/13/2014 End Date: 11/13/2014

X1_141113B

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
TUNE	1.0	1520						X			X				X	X											
S0	1.0	1531		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S1	1.0	1536		X		X	X	X	X		X				X		X		X			X		X			
S2	1.0	1541		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		X	
S3	1.0	1546		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S4	1.0	1551		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S5	1.0	1556		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S6	1.0	1601		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICV	1.0	1606		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICB	1.0	1611		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ LCICV	1.0	1616																									
ICSA	1.0	1621		X	X	X	X	X	X		X	X	X		X	X	X		X	X	X	X		X	X	X	
ICSAB	1.0	1627		X	X	X	X	X	X		X	X	X		X	X	X		X	X	X	X		X	X	X	
ICSA	10.0	1632								X				X									X				
ICSAB	10.0	1637								X				X									X				
CCV	1.0	1642		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1647		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
PBW	1.0	1652		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCW	1.0	1657		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.0	1702																									
MW01-13SU-NWG-102714	1.0	1707		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW01-13SU-NWG-102714-F	1.0	1712		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-16I-NWG-102814	1.0	1717		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-16I-NWG-102814-F	1.0	1722		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW02-06SA-NWG-102914	1.0	1727		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1732		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1737		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Instrument ID Number: X1 Method: MS

Start Date: 11/13/2014 End Date: 11/13/2014

X1_141113B

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW02-06SA-NWG-102914-F	1.0	1742		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-01SA-NWG-102914	1.0	1747		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-01SA-NWG-102914-F	1.0	1752		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FD04-102914	1.0	1757		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FD04-102914-F	1.0	1802		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-03SA-NWG-103014	1.0	1807		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-03SA-NWG-103014D	1.0	1812		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-03SA-NWG-103014S	1.0	1817		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X		X	X	X	
MW03-03SA-NWG-103014L	5.0	1822		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1827		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1832		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-03SA-NWG-103014-F	1.0	1837		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-03SA-NWG-103014-FD	1.0	1842		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MW03-03SA-NWG-103014-FS	1.0	1847		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X		X	X	X	
MW03-03SA-NWG-103014-FL	5.0	1853		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FB03-103014	1.0	1858		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
FB03-103014-F	1.0	1903		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1908		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1913		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
	11/13/14 16:06				11/13/14 16:42		11/13/14 17:32		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum	2000.0	2063.75	103.2	2000.0	2101.12	105.1	2012.22	100.6	MS
Antimony	100.0	95.09	95.1	100.0	103.09	103.1	99.28	99.3	MS
Arsenic	100.0	100.68	100.7	100.0	101.19	101.2	99.10	99.1	MS
Barium	1000.0	957.72	95.8	1000.0	1007.39	100.7	973.60	97.4	MS
Beryllium	100.0	97.63	97.6	100.0	99.92	99.9	97.46	97.5	MS
Cadmium	100.0	98.96	99.0	100.0	104.21	104.2	99.78	99.8	MS
Calcium	25000.0	24471.88	97.9	25000.0	26097.30	104.4	25018.72	100.1	MS
Chromium	100.0	100.68	100.7	100.0	101.22	101.2	98.26	98.3	MS
Cobalt	100.0	97.61	97.6	100.0	99.95	100	97.83	97.8	MS
Copper	100.0	101.53	101.5	100.0	101.46	101.5	99.65	99.6	MS
Iron	10000.0	9680.97	96.8	10000.0	10420.96	104.2	9973.71	99.7	MS
Lead	100.0	98.66	98.7	100.0	99.53	99.5	99.52	99.5	MS
Magnesium	25000.0	24688.96	98.8	25000.0	25926.88	103.7	24944.85	99.8	MS
Manganese	100.0	99.46	99.5	100.0	101.92	101.9	98.50	98.5	MS
Nickel	100.0	98.24	98.2	100.0	98.11	98.1	95.98	96.0	MS
Potassium	25000.0	24539.09	98.2	25000.0	25949.64	103.8	25310.95	101.2	MS
Selenium	100.0	101.11	101.1	100.0	102.09	102.1	99.83	99.8	MS
Silver	100.0	101.99	102.0	100.0	102.78	102.8	99.47	99.5	MS
Sodium	25000.0	24951.08	99.8	25000.0	26182.16	104.7	25483.39	101.9	MS
Thallium	100.0	99.10	99.1	100.0	98.78	98.8	98.07	98.1	MS
Vanadium	100.0	100.16	100.2	100.0	101.28	101.3	98.43	98.4	MS
Zinc	100.0	99.35	99.3	100.0	101.10	101.1	98.38	98.4	MS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
					11/13/14 18:27		11/13/14 19:08		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Aluminum				2000.0	1921.53	96.1	1914.98	95.7	MS
Antimony				100.0	96.73	96.7	95.78	95.8	MS
Arsenic				100.0	94.92	94.9	94.42	94.4	MS
Barium				1000.0	940.78	94.1	945.34	94.5	MS
Beryllium				100.0	94.42	94.4	94.15	94.2	MS
Cadmium				100.0	96.63	96.6	95.88	95.9	MS
Calcium				25000.0	24112.29	96.4	24190.98	96.8	MS
Chromium				100.0	93.53	93.5	93.33	93.3	MS
Cobalt				100.0	93.47	93.5	92.77	92.8	MS
Copper				100.0	95.02	95.0	94.50	94.5	MS
Iron				10000.0	9485.67	94.9	9418.21	94.2	MS
Lead				100.0	95.48	95.5	95.14	95.1	MS
Magnesium				25000.0	24020.29	96.1	23837.54	95.4	MS
Manganese				100.0	94.52	94.5	94.12	94.1	MS
Nickel				100.0	91.73	91.7	90.98	91.0	MS
Potassium				25000.0	24748.82	99.0	24982.73	99.9	MS
Selenium				100.0	96.60	96.6	95.36	95.4	MS
Silver				100.0	97.12	97.1	96.08	96.1	MS
Sodium				25000.0	24705.65	98.8	24578.19	98.3	MS
Thallium				100.0	94.19	94.2	93.84	93.8	MS
Vanadium				100.0	93.88	93.9	93.99	94.0	MS
Zinc				100.0	95.68	95.7	93.75	93.8	MS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	S0	Fully Quant Standard	1.000	1	1	1	144
2	S1	Fully Quant Standard	1.000	1	1	2	144
3	S2	Fully Quant Standard	1.000	1	1	3	144
4	S3	Fully Quant Standard	1.000	1	1	4	144
5	S4	Fully Quant Standard	1.000	1	1	5	144
6	S5	Fully Quant Standard	1.000	1	1	6	144
7	S6	Fully Quant Standard	1.000	1	1	7	144
8	MLICV	QC Sample	1.000	1	1	8	144
9	ICB	QC Sample	1.000	1	1	1	144
10	LLICV	QC Sample	1.000	1	1	9	144
11	ICSA	QC Sample	1.000	1	1	11	144
12	ICSAB	Unknown	1.000	1	1	12	144
13	ICSA 10X	Unknown	1.000	1	2	11	144
14	ICSAB 10X	Unknown	1.000	1	2	12	144
15	CCV	QC Sample	1.000	1	1	6	144
16	CCB	QC Sample	1.000	1	1	10	144
17	MB-79919	QC Sample	1.000	1	4	1	144
18	LCS-79919	QC Sample	1.000	1	4	2	144
19	1ppm LRA check	Unknown	1.000	1	3	1	144
20	N2027-02A	Unknown	1.000	1	4	3	144
21	N2027-03A	Unknown	1.000	1	4	4	144
22	N2027-04A	Unknown	1.000	1	4	5	144
23	N2027-05A	Unknown	1.000	1	4	6	144
24	N2027-08A	Unknown	1.000	1	4	7	144
25	CCV	QC Sample	1.000	1	1	6	144
26	CCB	QC Sample	1.000	1	1	10	144
27	N2027-09A	Unknown	1.000	1	4	8	144
28	N2027-10A	Unknown	1.000	1	4	9	144
29	N2027-11A	Unknown	1.000	1	4	10	144
30	N2027-12A	Unknown	1.000	1	4	11	144
31	N2027-13A	Unknown	1.000	1	4	12	144
32	N2027-15C	Unknown	1.000	1	5	1	144
33	N2027-15CDUP	Unknown	1.000	1	5	2	144
34	N2027-15CMS	QC Sample	1.000	1	5	3	144
35	N2027-15CSD	Unknown	1.000	1	5	4	144
36	CCV	QC Sample	1.000	1	1	6	144
37	CCB	QC Sample	1.000	1	1	10	144
38	N2027-16A	Unknown	1.000	1	5	5	144
39	N2027-16ADUP	Unknown	1.000	1	5	6	144
40	N2027-16AMS	QC Sample	1.000	1	5	7	144
41	N2027-16ASD	Unknown	1.000	1	5	8	144
42	N2027-17C	Unknown	1.000	1	5	9	144
43	N2027-18A	Unknown	1.000	1	5	10	144
44	CCV	QC Sample	1.000	1	1	6	144
45	CCB	QC Sample	1.000	1	1	10	144

LLICV 11/13/2014 4:16:43 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	7Li	9Be	10B	23Na	24Mg	25Mg	26Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:30	99.441%	0.000	1.077	62.260	T 513.500	T 509.000	515.000	508.600	20.940	T 510.700	515.300	103.979%
2	16:18:18	100.002%	0.000	1.010	61.720	T 517.300	T 510.300	514.600	516.300	21.070	T 514.100	513.200	104.472%
3	16:19:05	100.043%	0.000	1.031	61.210	T 510.900	T 512.000	509.900	513.200	21.100	T 515.000	513.800	104.639%
X		99.829%	0.000	103.954%	123.462%	T 102.781%	T 510.400	102.634%	512.700	105.175%	T 102.658%	102.823%	104.364%
%RSD		0.337	0.000	3.302	0.848	T 0.620	T 0.296	0.548	0.758	0.417	T 0.444	0.212	0.329
Run	**Time**	**47Ti**	**51V**	**52Cr**	**53Cr**	**53Cl O**	**54Fe**	**55Mn**	**56Fe**	**57Fe**	**59Co**	**60Ni**	**61Ni**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:30	0.027	5.112	1.507	ID 24.760	28.840	200.300	1.937	T 204.300	206.100	1.042	1.073	ID 10.440
2	16:18:18	0.012	5.224	1.524	ID 24.630	28.280	195.200	1.950	T 204.000	203.200	1.061	1.043	ID 10.990
3	16:19:05	0.000	5.202	1.513	ID 24.990	27.940	200.200	1.986	T 204.000	201.600	1.035	1.034	ID 9.883
X		0.013	103.591%	75.733%	ID 24.790	28.350	198.600	97.885%	T 204.100	101.805%	104.627%	104.993%	ID 10.440
%RSD		101.600	1.149	0.590	ID 0.730	1.600	1.460	1.303	T 0.076	1.114	1.301	1.987	ID 5.307
Run	**Time**	**63Cu**	**65Cu**	**66Zn**	**67Zn**	**68Zn**	**75As**	**78Se**	**82Se**	**83Kr**	**89Y**	**95Mo**	**97Mo**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:30	2.066	2.092	2.024	1.486	1.862	1.940	5.085	5.035	38.560	0.000	2.150	2.093
2	16:18:18	2.064	2.075	2.016	1.721	1.829	1.634	5.134	4.837	38.950	0.000	2.143	2.203
3	16:19:05	2.062	2.038	1.922	1.534	1.850	2.055	5.068	4.850	39.210	0.000	2.180	2.145
X		103.187%	103.432%	99.356%	1.580	1.847	93.810%	5.096	98.146%	38.910	0.000	2.157	2.147
%RSD		0.099	1.326	2.840	7.881	0.889	11.590	0.667	2.262	0.842	0.000	0.900	2.565
Run	**Time**	**103Rh**	**107Ag**	**108Mo O**	**109Ag**	**111Cd**	**114Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**137Ba**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:30	104.253%	1.093	-5.864	1.127	1.104	1.048	104.765%	0.027	2.047	2.061	10.250	10.230
2	16:18:18	106.145%	1.107	-7.401	1.148	1.085	1.051	105.577%	0.027	2.081	2.014	10.190	10.180
3	16:19:05	106.363%	1.088	-5.968	1.126	1.032	1.008	105.271%	0.024	2.126	2.046	10.220	10.380
X		105.587%	109.603%	-6.411	1.134	107.343%	1.036	105.204%	0.026	104.241%	102.017%	102.196%	102.633%
%RSD		1.099	0.914	13.400	1.107	3.463	2.358	0.390	7.560	1.902	1.171	0.250	1.051
Run	**Time**	**146Nd**	**152Sm**	**158Gd**	**159Tb**	**165Ho**	**166Er**	**175Lu**	**203Tl**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:30	0.000	0.001	0.000	104.670%	105.579%	0.000	104.844%	1.060	1.070	1.057	101.096%	0.000
2	16:18:18	0.001	0.001	0.000	104.233%	104.727%	0.000	103.729%	1.068	1.036	1.029	102.349%	0.000
3	16:19:05	0.000	0.002	0.000	104.841%	104.719%	0.000	104.459%	1.033	1.047	1.023	103.879%	0.000
X		0.000	0.001	0.000	104.581%	105.009%	0.000	104.344%	105.363%	105.117%	103.639%	102.441%	0.000
%RSD		173.200	24.530	0.000	0.300	0.470	173.200	0.543	1.711	1.674	1.761	1.360	0.000

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Preparation Blank Matrix (soil/water): WATER Method Blank ID: **MB-79919**

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

X1_141113B

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 11/13/14 16:47	C	11/13/14 17:37	C	11/13/14 18:32	C	Preparation Blank	C	M
Aluminum	2.900	U	* 3.425	B	2.900	U	2.900	U	6.800	U	MS
Antimony	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	MS
Arsenic	-0.230	B	-0.230	B	-0.258	B	-0.269	B	0.380	U	MS
Barium	1.300	U	1.300	U	1.300	U	1.300	U	2.000	U	MS
Beryllium	0.072	U	0.072	U	0.072	U	0.072	U	0.150	U	MS
Cadmium	0.084	U	0.084	U	0.084	U	0.084	U	0.150	U	MS
Calcium	24.000	U	24.000	U	24.000	U	24.000	U	38.000	U	MS
Chromium	-0.581	B	-0.600	B	-0.575	B	-0.583	B	0.250	U	MS
Cobalt	0.046	B	0.041	B	0.053	B	0.062	B	0.050	U	MS
Copper	0.230	U	0.230	U	0.230	U	0.230	U	0.380	U	MS
Iron	14.000	U	14.000	U	14.000	U	14.000	U	20.000	U	MS
Lead	0.068	U	0.068	U	0.068	U	0.068	U	0.150	U	MS
Magnesium	11.520	B	14.497	B	15.708	B	15.053	B	12.000	U	MS
Manganese	0.830	U	0.830	U	0.830	U	0.830	U	1.000	U	MS
Nickel	0.170	U	0.170	U	0.170	U	0.170	U	0.250	U	MS
Potassium	14.000	U	24.759	B	17.292	B	16.832	B	21.275	B	MS
Selenium	-0.245	B	-0.332	B	-0.263	B	-0.170	B	0.250	U	MS
Silver	0.058	B	0.056	B	0.053	B	0.054	B	0.100	U	MS
Sodium	33.000	U	33.000	U	33.000	U	33.000	U	50.000	U	MS
Thallium	0.076	B	0.105	B	0.100	B	0.097	B	0.075	U	MS
Vanadium	0.610	U	0.610	U	0.610	U	0.610	U	1.000	U	MS
Zinc	0.730	U	0.730	U	0.730	U	0.730	U	* 1.912	B	MS

* max

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BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

X1_141113B

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 11/13/14 19:13	C		C		C	Preparation Blank	C	M
Aluminum			3.165	B							MS
Antimony			0.200	U							MS
Arsenic			0.190	U							MS
Barium			1.300	U							MS
Beryllium			* 0.079	B							MS
Cadmium			* 0.088	B							MS
Calcium			* 28.622	B							MS
Chromium			-0.556	B							MS
Cobalt			* 0.096	B							MS
Copper			0.230	U							MS
Iron			14.000	U							MS
Lead			* 0.081	B							MS
Magnesium			* 24.240	B							MS
Manganese			0.830	U							MS
Nickel			0.170	U							MS
Potassium			* 26.482	B							MS
Selenium			-0.267	B							MS
Silver			* 0.087	B							MS
Sodium			33.000	U							MS
Thallium			* 0.129	B							MS
Vanadium			0.610	U							MS
Zinc			0.730	U							MS

* max

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

ICP ID Number: X1 ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found %R	Final Found Sol. AB	Final Found %R
Aluminum	100000	100000	98498	101018.8	101.0				
Antimony	0	0	1	0.7					
Arsenic	0	100	0	91.5	91.5				
Barium	0	0	0	0.1					
Beryllium	0	0	0	0					
Cadmium	0	100	0	87.8	87.8				
Chromium	0	200	2	200.4	100.2				
Cobalt	0	0	0	0.2					
Copper	0	200	1	170	85.0				
Lead	0	0	0	0.4					
Magnesium	100000	100000	100252	103560.7	103.6				
Manganese	0	200	1	197.8	98.9				
Nickel	0	200	1	169.9	85.0				
Potassium	100000	100000	105526	108110.8	108.1				
Selenium	0	100	-1	86.9	86.9				
Silver	0	200	0	189.4	94.7				
Thallium	0	0	0	0					
Vanadium	0	200	0	198.4	99.2				
Zinc	0	100	3	84.2	84.2				

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

ICP ID Number: X1 ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found %R	Final Found Sol. AB	Final Found %R
Calcium	300000	300000	300294	296822.9	98.9				
Iron	250000	250000	244150	243478.5	97.4				
Sodium	250000	250000	256295	250993.7	100.4				

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Preparation Method: 7470A Batch ID: 80014

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
CCB	11/13/2014		100
CCV	11/13/2014		100
ICB	11/13/2014		100
ICV	11/13/2014		100
S0	11/13/2014		100
S0.2	11/13/2014		100
S1.0	11/13/2014		100
S10.0	11/13/2014		100
S2.0	11/13/2014		100
S5.0	11/13/2014		100
FD04-102914	11/13/2014		100
FD04-102914-F	11/13/2014		100
LCSW	11/13/2014		100
MW01-13SU-NWG-102714	11/13/2014		100
MW01-13SU-NWG-102714-F	11/13/2014		100
MW02-06SA-NWG-102914	11/13/2014		100
MW02-06SA-NWG-102914-F	11/13/2014		100
MW03-01SA-NWG-102914	11/13/2014		100
MW03-01SA-NWG-102914-F	11/13/2014		100
MW03-03SA-NWG-103014	11/13/2014		100
MW03-03SA-NWG-103014-F	11/13/2014		100
MW03-03SA-NWG-103014-FD	11/13/2014		100
MW03-03SA-NWG-103014-FS	11/13/2014		100
MW03-03SA-NWG-103014D	11/13/2014		100
MW03-03SA-NWG-103014S	11/13/2014		100
MW03-16I-NWG-102814	11/13/2014		100
MW03-16I-NWG-102814-F	11/13/2014		100
PBW	11/13/2014		100

Comments:

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCS-80014

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.78	103.9						

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PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Preparation Method: 7470A Batch ID: 80050

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
CCB	11/17/2014		100
CCV	11/17/2014		100
ICB	11/17/2014		100
ICV	11/17/2014		100
S0	11/17/2014		100
S0.2	11/17/2014		100
S1.0	11/17/2014		100
S10.0	11/17/2014		100
S2.0	11/17/2014		100
S5.0	11/17/2014		100
FB03-103014	11/17/2014		100
FB03-103014-F	11/17/2014		100
LCSW	11/17/2014		100
LCSW02	11/17/2014		100
PBW	11/17/2014		100

Comments:

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Solid LCS Source: LCS(D) ID:

Aqueous LCS Source: **LCS-80050**

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.45	96.7						

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LABORATORY CONTROL SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCSD-80050

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.27	92.8						

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Instrument ID Number: FIMS2 Method: CV

Start Date: 11/14/2014 End Date: 11/14/2014

FIMS2_141114B

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.0	1624																X									
S0.2	1.0	1626																X									
S1.0	1.0	1627																X									
S2.0	1.0	1629																X									
S5.0	1.0	1631																X									
S10.0	1.0	1632																X									
ICV	1.0	1634																X									
ICB	1.0	1636																X									
PBW	1.0	1637																X									
LCSW	1.0	1639																X									
MW01-13SU-NWG-102714	1.0	1641																X									
MW01-13SU-NWG-102714-F	1.0	1642																X									
MW03-16I-NWG-102814	1.0	1644																X									
MW03-16I-NWG-102814-F	1.0	1646																X									
MW02-06SA-NWG-102914	1.0	1647																X									
MW02-06SA-NWG-102914-F	1.0	1649																X									
MW03-01SA-NWG-102914	1.0	1650																X									
CCV	1.0	1652																X									
CCB	1.0	1654																X									
MW03-01SA-NWG-102914-F	1.0	1656																X									
FD04-102914	1.0	1657																X									
FD04-102914-F	1.0	1659																X									
MW03-03SA-NWG-103014	1.0	1701																X									

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ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Instrument ID Number: FIMS2 Method: CV

Start Date: 11/14/2014 End Date: 11/14/2014

FIMS2_141114B

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MW03-03SA-NWG-103014D	1.0	1702																X									
MW03-03SA-NWG-103014S	1.0	1704																X									
MW03-03SA-NWG-103014-F	1.0	1706																X									
MW03-03SA-NWG-103014-FD	1.0	1707																X									
MW03-03SA-NWG-103014-FS	1.0	1709																X									
CCV	1.0	1711																X									
CCB	1.0	1712																X									

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
	11/14/14 16:34				11/14/14 16:52		11/14/14 17:11		
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Mercury	5.0	4.94	98.8	5.0	4.99	99.8	4.92	98.4	CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: **MB-80014**

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

FIMS2_141114B

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 11/14/14 16:54	C	11/14/14 17:12	C		C	Preparation Blank	C	M
Mercury	0.028	U	0.061	B	0.033	B			0.050	U	CV

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Instrument ID Number: FIMS2 Method: CV

Start Date: 11/19/2014 End Date: 11/19/2014

FIMS2_141119B

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CO	CR	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.0	1543																X									
S0.2	1.0	1545																X									
S1.0	1.0	1547																X									
S2.0	1.0	1548																X									
S5.0	1.0	1550																X									
S10.0	1.0	1551																X									
ICV	1.0	1553																X									
ICB	1.0	1555																X									
PBW	1.0	1557																X									
LCSW	1.0	1558																X									
LCSW02	1.0	1600																X									
FB03-103014	1.0	1602																X									
FB03-103014-F	1.0	1603																X									
ZZZZZZ	1.0	1605																									
ZZZZZZ	100.0	1607																									
ZZZZZZ	100.0	1608																									
CCV	1.0	1610																X									
CCB	1.0	1612																X									

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
	11/19/14 15:53				11/19/14 16:10				
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
Mercury	5.0	4.59	91.9	5.0	4.45	89.0			CV

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: WR--1-CTO WE01, AGMT-1106318, 112

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SN2027

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: **MB-80050**

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

FIMS2_141119B

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 11/19/14 16:12	C		C		C	Preparation Blank	C	M
Mercury	0.028	U	-0.033	B					0.050	U	CV

TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **S. ANDERSON** **DATE:** **DECEMBER 24, 2014**

FROM: **LEIGH A. CIOFANI** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC / SVOC / NAPHTHALENE / PEST / PCB / TPH**
CTO WE01, NCBC DAVISVILLE
SAMPLE DELIVERY GROUP (SDG) N2027

SAMPLES: 10 / Aqueous / VOC

FB03-103014	FD04-102914	MW01-13Sa-NWG-102714
MW02-06Sa-NWG-102914	MW03-01Sa-NWG-102914	MW03-03Sa-NWG-103014
MW03-16I-NWG-102814	TB10-102714	TB11-102914
TB12-103014		

3 / Aqueous / SVOC / PEST / PCB

FB03-103014	FD03-102814	MW03-16I-NWG-102814

6 / Aqueous / Naphthalene

FB03-103014	FD04-102914	MW01-13Sa-NWG-102714
MW02-06Sa-NWG-102914	MW03-01Sa-NWG-102914	MW03-03Sa-NWG-103014

7 / Aqueous / TPH

FB03-103014	FD04-102914	MW01-13Sa-NWG-102714
MW02-06Sa-NWG-102914	MW03-01Sa-NWG-102914	MW03-03Sa-NWG-103014
MW03-16I-NWG-102814		

OVERVIEW

The sample set for CTO WE01, NCBC Davisville, SDG N2027, consists of seven (7) aqueous environmental samples, three (3) trip blanks, and one (1) field blank. There are two (2) field duplicate pairs included in this SDG: MW03-16I-NWG-102814 (original) / FD03-102814 (duplicate) and MW03-01Sa-NWG-102914 (original) / FD04-102914 (duplicate).

Samples were analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), pesticides (PEST), polychlorinated biphenyls (PCB), naphthalene, and total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO). The samples were collected by Tetra Tech on October 27-30, 2014 and analyzed by Spectrum Analytical, Inc. All analyses were conducted in accordance with SW-864 Methods 8260B (for VOC), 8270D (for SVOC), 8270D SIM (for naphthalene), 8081B (for PEST), 8082A (for PCB), and 8015D (for TPH GRO and DRO) analysis and reporting protocols. A Tier II data validation was performed on the referenced samples. The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
• Initial/Continuing Calibrations
• Laboratory Method/Field Blank Results

- Surrogate Recoveries
- Laboratory Control Spike/Laboratory Control Spike Duplicate Results
* • Matrix Spike/Matrix Spike Duplicate Results
* • Internal Standards
* • Field Duplicate Precision
* • Compound Quantitation
* • Compound Identification
* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. The attached Table summarizes the validation qualifications which are based on the following information:

COMPOUND IDENTIFICATION

The laboratory reported that sample MW03-16I-NWG-102814 had a detection of GRO at a concentration of 130 ug/L. Upon inspection of the chromatogram associated with the VOC (8260B) analysis of this sample, it appears that TPH-related compounds were not detected in the VOC fraction; only chlorinated compounds were detected in the VOC analysis. Therefore, it is likely that the reported detection of GRO is wholly attributable to the chlorinated VOCs detected in the sample. The positive result for GRO in sample MW03-16I-NWG-102814 was rejected (R) on this basis. Chromatograms for both the VOC and GRO analysis are included in Appendix D.

BLANKS

The following SVOC compound was detected in the laboratory method blank at the following maximum concentration:

Compound	Maximum Concentration	Action Level
di-n-butylphthalate	2.2 ug/L	22 ug/L

An action level of 10x the maximum concentration of di-n-butylphthalate was used to evaluate sample concentrations for blank contamination. Sample aliquot and dilution factors, if applicable, were considered in evaluating for blank contamination. Positive results for di-n-butylphthalate less than the corresponding action level were qualified as non-detected (U) due to laboratory blank contamination. Di-n-butylphthalate was also detected in the field blank at a concentration of 4.1 ug/L; however, field blank results were not qualified due to laboratory method blank contamination.

CALIBRATIONS

The VOC initial calibration run on 10/31/14 on instrument DB-624 had a relative standard deviation (RSD) for bromoform that was greater than the quality control limit of 15%. Samples FD04-102914, MW01-13Sa-NWG-102714, MW02-06Sa-NWG-102914, MW03-01Sa-NWG-102914, MW03-16I-NWG-102814, TB10-102714, and TB11-102914 were affected by this calibration. Non-detected results for bromoform were qualified as estimated (UJ) in the affected samples.

The VOC continuing calibration run on 11/03/14 at 09:27 on instrument DB-624 had percent differences (%Ds) for bromomethane, trichlorofluoromethane, and 2-butanone that were outside of the ±20% quality control range.

Samples FD04-102914, MW01-13Sa-NWG-102714, MW02-06Sa-NWG-102914, MW03-01Sa-NWG-102914, MW03-16I-NWG-102814, TB10-102714, and TB11-102914 were affected by this calibration. Non-detected results for these analytes were qualified as estimated (UJ) in the affected samples.

The VOC initial calibration performed on 11/07/14 on instrument DB-624 had RSDs greater than the 15% quality control limit for bromomethane, chloroethane, 2-butanone, trans-1,3-dichloropropene, 2-hexanone, styrene, and bromoform. The following samples were affected: FB03-103014, MW03-03Sa-NWG-103014, and TB12-103014. Non-detected results for these analytes were qualified as estimated (UJ) in the affected samples.

The SVOC initial calibration run on 11/11/14 on instrument Rxi-5sil MS had RSDs that were greater than the 15% quality control limit for 2-methylnaphthalene, hexachlorocyclopentadiene, 2,4-dinitrophenol, pentachlorophenol, and benzaldehyde. All SVOC samples were affected. Non-detected results for these analytes were qualified as estimated (UJ) in the affected samples.

The PEST initial calibration performed on 11/14/14 on instrument E6 had RSDs that were greater than the 15% quality control limit for delta-BHC on both columns. Sample FB03-103014 is associated with this calibration. The non-detected result for delta-BHC in sample FB03-103014 was qualified as estimated (UJ) on this basis.

SURROGATE RECOVERIES

Surrogate %Rs for decachlorobiphenyl (DCB) were less than laboratory acceptance limits on both columns for all PCB samples (FB03-103014, FD03-102814, and MW03-16I-NWG-102814). Non-detected PCB results were qualified as estimated (UJ) in the affected samples.

LABORATORY CONTROL SAMPLE

The PCB laboratory control sample (LCS) LCS-79913 had percent recoveries (%Rs) less than laboratory acceptance limits for Aroclor-1260. Sample FB03-103014 was affected. The non-detected result for Aroclor-1260 was qualified as estimated (UJ) in sample FB03-103014.

ADDITIONAL COMMENTS

The laboratory data package lists sample MW01-13Sa-NWG-102714 as MW01-13SU-NWG-102714. The sample name on the Form I reports was corrected by the data validator.

The laboratory data package initially excluded 1,2,3-trichlorobenzene and bromochloromethane from the VOC Form Is for several samples. The laboratory was contacted and supplied revised Form Is for these samples at a later date. The revised Form Is are included in this report.

The laboratory data package lists sample MW01-13Sa-NWG-102714 as MW01-13SU-NWG-102714. The sample name on the Form I reports was corrected by the data validator.

Sample MW03-16I-NWG-102814 was reanalyzed with a dilution factor of 3 because the result for trichloroethene exceeded the instrument calibration range in the original undiluted sample. The result for trichloroethene from the dilution was used for validation purposes, and results for all other analytes were reported from the original undiluted analysis.

The VOC continuing calibration run on 11/04/14 at 10:00 on instrument DB-624 had %Ds for acetone and 4-methyl-2-pentanone that were outside of the ±20% quality control range. The dilution of sample MW03-16I-NWG-102814 was affected. No qualification was necessary because only the result for trichloroethene from this analysis was used for validation.

Methylene chloride was detected in the VOC field blank FB03-103014 at a concentration of 1.5 ug/L. No action was taken on this basis.

The laboratory data package initially excluded the SVOC analyte 1,3-dinitrobenzene. The laboratory was contacted, and the laboratory revised the data package to scan for 1,3-dintirobenzene as a tentatively identified compound (TIC). 1,3-Dinitrobenzene was not detected. The associated forms from the revised data package are included in Appendix D.

The SVOC laboratory control sample duplicate (LCSD) LCSD-79838 had percent a relative percent difference (RPD) for 4-nitrophenol that was greater than the laboratory quality control limit. All SVOC samples were associated with this LCSD. No action was necessary because associated sample results were non-detected for all analytes and the laboratory control sample (LCS) and LCSD %Rs were compliant.

Di-n-butylphthalate was detected in the SVOC field blank FB03-103014 at a concentration of 4.1 ug/L. No action was taken on this basis.

The PEST initial calibration performed on 11/14/14 on instrument E6 had an RSD that was greater than the 15% quality control limit for 4,4'-DDD on the primary column. Sample FB03-103014 is associated with this calibration. No action was necessary because the result for 4,4'-DDD was non-detected in the affected sample and the secondary column was compliant.

The PEST continuing calibration performed on 11/14/14 at 00:07 on instrument E6 had a %D that was greater than the ±20% quality control limit for 4,4'-DDT on the secondary column. Sample FB03-103014 is associated with this calibration. No action was necessary because the result for 4,4'-DDT was non-detected in the affected sample and the primary column was compliant.

The laboratory re-extracted and re-analyzed PCB sample FB03-103014 seven (7) days outside of the extraction holding time limit due to quality control noncompliances. No action was necessary on this basis because results from the original analysis were used for validation purposes.

Positive results for SVOCs reported between the detection limit and the quantitation limit were qualified as estimated (J) due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Some VOC, SVOC, and PEST results were qualified due to calibration noncompliances. Results for one SVOC analyte were qualified as non-detected due to laboratory blank contamination. PCB results were qualified due to surrogate recovery noncompliance, and results for one PCB analyte were qualified due to LCS noncompliance.

Other Factors Affecting Data Quality: Some SVOC results between the detection limit and the quantitation limit were qualified as estimated.

The data for these analyses were reviewed with reference to the USEPA National Functional Guidelines for Organic Data Review (June 2008) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech

Leigh A. Ciofani
Environmental Scientist/Data Validator

Tetra Tech

Joseph A. Samchuck
Data Validation Manager

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD04-102914						MW01-13Sa-NWG-102714		
SDG: N2027	LAB_ID	N2027-17A			N2027-12B						N2027-02B		
FRACTION: OV	SAMP_DATE	10/30/2014			10/29/2014						10/27/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			UG/L						UG/L		
	PCT_SOLIDS	0.0			0.0						0.0		
	DUP_OF							MW03-01Sa-NWG-102914					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.5	U					0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE		0.5	U					0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE		1	U					1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		1	U					1	U		1	U	
1,1-DICHLOROETHANE		0.5	U					0.5	U		0.5	U	
1,1-DICHLOROETHENE		0.5	U					0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE		0.5	U		0.5	U							
1,2,4-TRICHLOROBENZENE		0.5	U					0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U					1	U		1	U	
1,2-DIBROMOETHANE		0.5	U					0.5	U		0.5	U	
1,2-DICHLOROBENZENE		0.5	U					0.5	U		0.5	U	
1,2-DICHLOROETHANE		0.5	U					0.5	U		0.5	U	
1,2-DICHLOROPROPANE		1	U					1	U		1	U	
1,3-DICHLOROBENZENE		0.5	U					0.5	U		0.5	U	
1,4-DICHLOROBENZENE		0.5	U					0.5	U		0.5	U	
2-BUTANONE		2.5	UJ	C				2.5	UJ	C	2.5	UJ	C
2-HEXANONE		2.5	UJ	C				2.5	U		2.5	U	
4-METHYL-2-PENTANONE		1	U					1	U		1	U	
ACETONE		2.5	U					2.5	U		2.5	U	
BENZENE		0.5	U					0.5	U		0.5	U	
BROMOCHLOROMETHANE		0.5	U		0.5	U							
BROMODICHLOROMETHANE		0.5	U					0.5	U		0.5	U	
BROMOFORM		1	UJ	C				1	UJ	C	1	UJ	C
BROMOMETHANE		1	UJ	C				1	UJ	C	1	UJ	C
CARBON DISULFIDE		0.5	U					0.5	U		0.5	U	
CARBON TETRACHLORIDE		1	U					1	U		1	U	
CHLOROBENZENE		0.5	U					0.5	U		0.5	U	
CHLORODIBROMOMETHANE		1	U					1	U		1	U	
CHLOROETHANE		0.5	UJ	C				0.5	U		0.5	U	
CHLOROFORM		0.5	U					0.5	U		0.5	U	
CHLOROMETHANE		0.5	U					0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE		0.5	U					0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE		0.5	U					0.5	U		0.5	U	
CYCLOHEXANE		1	U					1	U		1	U	
DICHLORODIFLUOROMETHANE		1	U					1	U		1	U	

12/24/14 MW01-13Sa-NWG-102714

PROJ_NO: 01813	NSAMPLE	MW01-13SU-NWG-102714			MW02-06SA-NWG-102914			MW03-01SA-NWG-102914			MW03-03SA-NWG-103014		
SDG: N2027	LAB_ID	N2027-02B			N2027-08B			N2027-10B			N2027-15A		
FRACTION: OV	SAMP_DATE	10/27/2014			10/29/2014			10/29/2014			10/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE				1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE				1	U		1	U		1	U	
1,1-DICHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE				0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE				1	U		1	U		1	U	
1,2-DIBROMOETHANE				0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE				0.5	U		0.5	U		0.5	U	
1,2-DICHLOROPROPANE				1	U		1	U		1	U	
1,3-DICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE				0.5	U		0.5	U		0.5	U	
2-BUTANONE				2.5	UJ	C	2.5	UJ	C	2.5	UJ	C
2-HEXANONE				2.5	U		2.5	U		2.5	UJ	C
4-METHYL-2-PENTANONE				1	U		1	U		1	U	
ACETONE				2.5	U		2.5	U		2.5	U	
BENZENE				0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE				0.5	U		0.5	U		0.5	U	
BROMOFORM				1	UJ	C	1	UJ	C	1	UJ	C
BROMOMETHANE				1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE				0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE				1	U		1	U		1	U	
CHLOROBENZENE				0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE				1	U		1	U		1	U	
CHLOROETHANE				0.5	U		0.5	U		0.5	UJ	C
CHLOROFORM				0.5	U		0.5	U		0.5	U	
CHLOROMETHANE				0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE				0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE				0.5	U		0.5	U		0.5	U	
CYCLOHEXANE				1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE				1	U		1	U		1	U	

PROJ_NO: 01813	NSAMPLE	MW03-16I-NWG-102814			MW03-16I-NWG-102814DL			TB10-102714			TB11-102914		
SDG: N2027	LAB_ID	N2027-04B			N2027-04BDL			N2027-01A			N2027-07A		
FRACTION: OV	SAMP_DATE	10/28/2014			10/28/2014			10/27/2014			10/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5	U					0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE	65						0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE	5.6						1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U					1	U		1	U	
1,1-DICHLOROETHANE	0.5	U					0.5	U		0.5	U	
1,1-DICHLOROETHENE	0.5	U					0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U					0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE	0.5	U					0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U					1	U		1	U	
1,2-DIBROMOETHANE	0.5	U					0.5	U		0.5	U	
1,2-DICHLOROBENZENE	0.5	U					0.5	U		0.5	U	
1,2-DICHLOROETHANE	0.5	U					0.5	U		0.5	U	
1,2-DICHLOROPROPANE	1	U					1	U		1	U	
1,3-DICHLOROBENZENE	0.5	U					0.5	U		0.5	U	
1,4-DICHLOROBENZENE	0.5	U					0.5	U		0.5	U	
2-BUTANONE	2.5	UJ	C				2.5	UJ	C	2.5	UJ	C
2-HEXANONE	2.5	U					2.5	U		2.5	U	
4-METHYL-2-PENTANONE	1	U					1	U		1	U	
ACETONE	2.5	U					2.5	U		2.5	U	
BENZENE	0.5	U					0.5	U		0.5	U	
BROMOCHLOROMETHANE	0.5	U					0.5	U		0.5	U	
BROMODICHLOROMETHANE	0.5	U					0.5	U		0.5	U	
BROMOFORM	1	UJ	C				1	UJ	C	1	UJ	C
BROMOMETHANE	1	UJ	C				1	UJ	C	1	UJ	C
CARBON DISULFIDE	0.5	U					0.5	U		0.5	U	
CARBON TETRACHLORIDE	1	U					1	U		1	U	
CHLOROBENZENE	0.5	U					0.5	U		0.5	U	
CHLORODIBROMOMETHANE	1	U					1	U		1	U	
CHLOROETHANE	0.5	U					0.5	U		0.5	U	
CHLOROFORM	0.5	U					0.5	U		0.5	U	
CHLOROMETHANE	0.5	U					0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE	100						0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE	0.5	U					0.5	U		0.5	U	
CYCLOHEXANE	1	U					1	U		1	U	
DICHLORODIFLUOROMETHANE	1	U					1	U		1	U	

PROJ_NO: 01813	NSAMPLE	TB12-103014
SDG: N2027	LAB_ID	N2027-14A
FRACTION: OV	SAMP_DATE	10/30/2014
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.5	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U	
1,2,4-TRICHLOROBENZENE	0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	0.5	U	
1,2-DICHLOROBENZENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	0.5	U	
1,4-DICHLOROBENZENE	0.5	U	
2-BUTANONE	2.5	UJ	C
2-HEXANONE	2.5	UJ	C
4-METHYL-2-PENTANONE	1	U	
ACETONE	2.5	U	
BENZENE	0.5	U	
BROMOCHLOROMETHANE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	1	UJ	C
BROMOMETHANE	1	UJ	C
CARBON DISULFIDE	0.5	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	0.5	UJ	C
CHLOROFORM	0.5	U	
CHLOROMETHANE	0.5	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.5	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD04-102914						MW01-13Sa-NWG-102714		
SDG: N2027	LAB_ID	N2027-17A			N2027-12B						N2027-02B		
FRACTION: OV	SAMP_DATE	10/30/2014			10/29/2014						10/27/2014		
MEDIA: WATER	QC_TYPE	NM			NM						NM		
	UNITS	UG/L			UG/L						UG/L		
	PCT_SOLIDS	0.0			0.0						0.0		
	DUP_OF							MW03-01Sa-NWG-102914					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ETHYLBENZENE		0.5	U					0.5	U		0.5	U	
ISOPROPYLBENZENE		0.5	U					0.5	U		0.5	U	
METHYL ACETATE		1	U					1	U		1	U	
METHYL CYCLOHEXANE		1	U					1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U					0.5	U		0.5	U	
METHYLENE CHLORIDE		1.5						0.5	U		0.5	U	
STYRENE		0.5	UJ	C				0.5	U		0.5	U	
TETRACHLOROETHENE		1	U					1	U		1	U	
TOLUENE		0.5	U					0.5	U		0.5	U	
TOTAL XYLENES		1	U					1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U					1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	UJ	C				0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U					0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		1	U					1	UJ	C	1	UJ	C
VINYL CHLORIDE		0.5	U					0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW01-13SU-NWG-102714			MW02-06SA-NWG-102914			MW03-01SA-NWG-102914			MW03-03SA-NWG-103014		
SDG: N2027	LAB_ID	N2027-02B			N2027-08B			N2027-10B			N2027-15A		
FRACTION: OV	SAMP_DATE	10/27/2014			10/29/2014			10/29/2014			10/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ETHYLBENZENE					0.5	U		0.5	U		0.5	U	
ISOPROPYLBENZENE					0.5	U		0.5	U		0.5	U	
METHYL ACETATE					1	U		1	U		1	U	
METHYL CYCLOHEXANE					1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER					0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE					0.5	U		0.5	U		0.5	U	
STYRENE					0.5	U		0.5	U		0.5	UJ	C
TETRACHLOROETHENE					1	U		1	U		1	U	
TOLUENE					0.5	U		0.5	U		0.5	U	
TOTAL XYLENES					1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE					1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE					0.5	U		0.5	U		0.5	UJ	C
TRICHLOROETHENE					0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE					1	UJ	C	1	UJ	C	1	U	
VINYL CHLORIDE					0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	MW03-16I-NWG-102814			MW03-16I-NWG-102814DL			TB10-102714			TB11-102914		
SDG: N2027	LAB_ID	N2027-04B			N2027-04BDL			N2027-01A			N2027-07A		
FRACTION: OV	SAMP_DATE	10/28/2014			10/28/2014			10/27/2014			10/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ETHYLBENZENE		0.5	U					0.5	U		0.5	U	
ISOPROPYLBENZENE		0.5	U					0.5	U		0.5	U	
METHYL ACETATE		1	U					1	U		1	U	
METHYL CYCLOHEXANE		1	U					1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U					0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U					0.5	U		0.5	U	
STYRENE		0.5	U					0.5	U		0.5	U	
TETRACHLOROETHENE		1	U					1	U		1	U	
TOLUENE		0.5	U					0.5	U		0.5	U	
TOTAL XYLENES		1	U					1	U		1	U	
TRANS-1,2-DICHLOROETHENE		44						1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U					0.5	U		0.5	U	
TRICHLOROETHENE					170			0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		1	UJ	C				1	UJ	C	1	UJ	C
VINYL CHLORIDE		2.4						0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	TB12-103014
SDG: N2027	LAB_ID	N2027-14A
FRACTION: OV	SAMP_DATE	10/30/2014
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
ETHYLBENZENE	0.5	U	
ISOPROPYLBENZENE	0.5	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	0.5	U	
METHYLENE CHLORIDE	0.5	U	
STYRENE	0.5	UJ	C
TETRACHLOROETHENE	1	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	0.5	UJ	C
TRICHLOROETHENE	0.5	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD03-102814			MW03-16I-NWG-102814		
SDG: N2027	LAB_ID	N2027-17B			N2027-06A			N2027-04C		
FRACTION: OS	SAMP_DATE	10/30/2014			10/28/2014			10/28/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF				MW03-16I-NWG-102814					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		2	U		2	U		2	U	
1,4-DIOXANE		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		2	U		2	U		2	U	
2,4,5-TRICHLOROPHENOL		2	U		2	U		2	U	
2,4,6-TRICHLOROPHENOL		2	U		2	U		2	U	
2,4-DICHLOROPHENOL		2	U		2	U		2	U	
2,4-DIMETHYLPHENOL		2	U		2	U		2	U	
2,4-DINITROPHENOL		10	UJ	C	10	UJ	C	10	UJ	C
2,4-DINITROTOLUENE		2	U		2	U		2	U	
2,6-DINITROTOLUENE		2	U		2	U		2	U	
2-CHLORONAPHTHALENE		2	U		2	U		2	U	
2-CHLOROPHENOL		2	U		2	U		2	U	
2-METHYLNAPHTHALENE		2	UJ	C	2	UJ	C	2	UJ	C
2-METHYLPHENOL		2	U		2	U		2	U	
2-NITROANILINE		2	U		2	U		2	U	
2-NITROPHENOL		2	U		2	U		2	U	
3,3'-DICHLOROBENZIDINE		10	U		10	U		10	U	
3-NITROANILINE		2	U		2	U		2	U	
4,6-DINITRO-2-METHYLPHENOL		2	U		2	U		2	U	
4-BROMOPHENYL PHENYL ETHER		2	U		2	U		2	U	
4-CHLORO-3-METHYLPHENOL		2	U		2	U		2	U	
4-CHLOROANILINE		2	U		2	U		2	U	
4-CHLOROPHENYL PHENYL ETHER		2	U		2	U		2	U	
4-METHYLPHENOL		2	U		2	U		2	U	
4-NITROANILINE		2	U		2	U		2	U	
4-NITROPHENOL		2	U		2	U		2	U	
ACENAPHTHENE		2	U		2	U		2	U	
ACENAPHTHYLENE		2	U		2	U		2	U	
ACETOPHENONE		2	U		2	U		2	U	
ANTHRACENE		2	U		2	U		2	U	
ATRAZINE		2	U		2	U		2	U	
BENZALDEHYDE		2	UJ	C	2	UJ	C	2	UJ	C
BENZO(A)ANTHRACENE		2	U		2	U		2	U	
BENZO(A)PYRENE		2	U		2	U		2	U	
BENZO(B)FLUORANTHENE		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD03-102814			MW03-16I-NWG-102814		
SDG: N2027	LAB_ID	N2027-17B			N2027-06A			N2027-04C		
FRACTION: OS	SAMP_DATE	10/30/2014			10/28/2014			10/28/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF				MW03-16I-NWG-102814					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(G,H,I)PERYLENE		2	U		2	U		2	U	
BENZO(K)FLUORANTHENE		2	U		2	U		2	U	
BIS(2-CHLOROETHOXY)METHANE		2	U		2	U		2	U	
BIS(2-CHLOROETHYL)ETHER		2	U		2	U		2	U	
BIS(2-ETHYLHEXYL)PHTHALATE		2	U		2	U		2	U	
BUTYL BENZYL PHTHALATE		2	U		2	U		2	U	
CAPROLACTAM		10	U		10	U		10	U	
CARBAZOLE		2	U		2	U		2	U	
CHRYSENE		2	U		2	U		2	U	
DIBENZO(A,H)ANTHRACENE		2	U		2	U		2	U	
DIBENZOFURAN		2	U		2	U		2	U	
DIETHYL PHTHALATE		2	U		2	U		2	U	
DIMETHYL PHTHALATE		2	U		2	U		2	U	
DI-N-BUTYL PHTHALATE		4.1	J	P	3.8	U	A	2.4	U	A
DI-N-OCTYL PHTHALATE		2	U		2	U		2	U	
FLUORANTHENE		2	U		2	U		2	U	
FLUORENE		2	U		2	U		2	U	
HEXACHLOROBENZENE		2	U		2	U		2	U	
HEXACHLOROBUTADIENE		2	U		2	U		2	U	
HEXACHLOROCYCLOPENTADIENE		10	UJ	C	10	UJ	C	10	UJ	C
HEXACHLOROETHANE		2	U		2	U		2	U	
INDENO(1,2,3-CD)PYRENE		2	U		2	U		2	U	
ISOPHORONE		2	U		2	U		2	U	
NAPHTHALENE		2	U		2	U		2	U	
NITROBENZENE		2	U		2	U		2	U	
N-NITROSO-DI-N-PROPYLAMINE		2	U		2	U		2	U	
N-NITROSODIPHENYLAMINE		2	U		2	U		2	U	
PENTACHLOROPHENOL		10	UJ	C	10	UJ	C	10	UJ	C
PHENANTHRENE		2	U		2	U		2	U	
PHENOL		2	U		2	U		2	U	
PYRENE		2	U		2	U		2	U	

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD04-102914			MW01-13Sa-NWG-102714			MW02-06Sa-NWG-102914		
SDG: N2027	LAB_ID	N2027-17B			N2027-12C			N2027-02C			N2027-08C		
FRACTION: PAH	SAMP_DATE	10/30/2014			10/29/2014			10/27/2014			10/29/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				MW03-01Sa-NWG-102914								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
NAPHTHALENE		0.1	U		0.1	U		0.1	U		0.1	U	

PROJ_NO: 01813	NSAMPLE	MW03-01Sa-NWG-102914			MW03-03Sa-NWG-103014		
SDG: N2027	LAB_ID	N2027-10C			N2027-15B		
FRACTION: PAH	SAMP_DATE	10/29/2014			10/30/2014		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
NAPHTHALENE		0.1	U		0.1	U	

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD03-102814			MW03-16I-NWG-102814		
SDG: N2027	LAB_ID	N2027-17B			N2027-06A			N2027-04C		
FRACTION: PEST	SAMP_DATE	10/30/2014			10/28/2014			10/28/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF				MW03-16I-NWG-102814					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.025	U		0.025	U		0.025	U	
4,4'-DDE		0.025	U		0.025	U		0.025	U	
4,4'-DDT		0.025	U		0.025	U		0.025	U	
ALDRIN		0.013	U		0.013	U		0.013	U	
ALPHA-BHC		0.013	U		0.013	U		0.013	U	
ALPHA-CHLORDANE		0.013	U		0.013	U		0.013	U	
BETA-BHC		0.013	U		0.013	U		0.013	U	
DELTA-BHC		0.013	UJ	C	0.013	U		0.013	U	
DIELDRIN		0.025	U		0.025	U		0.025	U	
ENDOSULFAN I		0.013	U		0.013	U		0.013	U	
ENDOSULFAN II		0.025	U		0.025	U		0.025	U	
ENDOSULFAN SULFATE		0.025	U		0.025	U		0.025	U	
ENDRIN		0.025	U		0.025	U		0.025	U	
ENDRIN ALDEHYDE		0.025	U		0.025	U		0.025	U	
ENDRIN KETONE		0.025	U		0.025	U		0.025	U	
GAMMA-BHC (LINDANE)		0.013	U		0.013	U		0.013	U	
GAMMA-CHLORDANE		0.013	U		0.013	U		0.013	U	
HEPTACHLOR		0.013	U		0.013	U		0.013	U	
HEPTACHLOR EPOXIDE		0.013	U		0.013	U		0.013	U	
METHOXYCHLOR		0.13	U		0.13	U		0.13	U	
TOXAPHENE		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	FB03-103014			FD03-102814			MW03-16I-NWG-102814		
SDG: N2027	LAB_ID	N2027-17B			N2027-06A			N2027-04C		
FRACTION: PCB	SAMP_DATE	10/30/2014			10/28/2014			10/28/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF				MW03-16I-NWG-102814					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		0.25	UJ	R	0.25	UJ	R	0.25	UJ	R
AROCLOR-1221		0.5	UJ	R	0.5	UJ	R	0.5	UJ	R
AROCLOR-1232		0.25	UJ	R	0.25	UJ	R	0.25	UJ	R
AROCLOR-1242		0.25	UJ	R	0.25	UJ	R	0.25	UJ	R
AROCLOR-1248		0.25	UJ	R	0.25	UJ	R	0.25	UJ	R
AROCLOR-1254		0.25	UJ	R	0.25	UJ	R	0.25	UJ	R
AROCLOR-1260		0.25	UJ	ER	0.25	UJ	R	0.25	UJ	R

PROJ_NO: 01813	NSAMPLE	FB03-103014						FD04-102914					
SDG: N2027	LAB_ID	N2027-17A						N2027-12B					
FRACTION: PET	SAMP_DATE	10/30/2014						10/29/2014					
MEDIA: WATER	QC_TYPE	NM						NM					
	UNITS	MG/L			UG/L			MG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF							MW03-01Sa-NWG-102914			MW03-01Sa-NWG-102914		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U					20	U	
TPH (C09-C40)		0.05	U					0.05	U				

PROJ_NO: 01813	NSAMPLE	MW01-13Sa-NWG-102714						MW02-06Sa-NWG-102914					
SDG: N2027	LAB_ID	N2027-02B						N2027-08B					
FRACTION: PET	SAMP_DATE	10/27/2014						10/29/2014					
MEDIA: WATER	QC_TYPE	NM						NM					
	UNITS	MG/L			UG/L			MG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U					20	U	
TPH (C09-C40)		0.05	U					0.05	U				

PROJ_NO: 01813	NSAMPLE	MW03-01Sa-NWG-102914						MW03-03Sa-NWG-103014					
SDG: N2027	LAB_ID	N2027-10B						N2027-15A					
FRACTION: PET	SAMP_DATE	10/29/2014						10/30/2014					
MEDIA: WATER	QC_TYPE	NM						NM					
	UNITS	MG/L			UG/L			MG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					20	U					20	U	
TPH (C09-C40)		0.05	U					0.05	U				

PROJ_NO: 01813	NSAMPLE	MW03-16I-NWG-102814					
SDG: N2027	LAB_ID	N2027-04B					
FRACTION: PET	SAMP_DATE	10/28/2014					
MEDIA: WATER	QC_TYPE	NM					
	UNITS	MG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS					130	R	Q
TPH (C09-C40)		0.05	U				

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8027.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/30/2014

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	1.5		0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8027.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/30/2014

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD04-102914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-12B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7925.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD04-102914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-12B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7925.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

MW01-13SA-NWG-102714

LC 12/24/14

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-13SU-NWG-102714

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-02B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7921.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

12/24/14 MW01-13SU-NWG-102714

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW01-13SU-NWG-102714

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-02B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7921.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-06SA-NWG-10 2914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-08B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7923.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-06SA-NWG-10 2914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-08B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7923.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-01SA-NWG-10 2914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-10B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7924.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-01SA-NWG-10 2914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-10B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7924.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-03SA-NWG-10 3014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-15A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8026.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/30/2014

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-03SA-NWG-10 3014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-15A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8026.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/30/2014

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102 814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7922.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	2.4		0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	44		0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	100		0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	350	E	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	5.6		0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102 814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7922.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	65		0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102
814DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04BDL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7950.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/04/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	3.0	U	2.0	3.0	3.0
74-87-3	Chloromethane	1.5	U	0.78	1.5	3.0
75-01-4	Vinyl chloride	1.5	U	1.5	1.5	3.0
74-83-9	Bromomethane	3.0	U	2.4	3.0	3.0
75-00-3	Chloroethane	1.5	U	1.4	1.5	3.0
75-69-4	Trichlorofluoromethane	3.0	U	1.6	3.0	3.0
75-35-4	1,1-Dichloroethene	1.5	U	1.2	1.5	3.0
67-64-1	Acetone	7.5	U	6.6	7.5	15
75-15-0	Carbon disulfide	1.5	U	1.0	1.5	3.0
75-09-2	Methylene chloride	1.5	U	1.2	1.5	3.0
156-60-5	trans-1,2-Dichloroethene	23	D	2.0	3.0	3.0
1634-04-4	Methyl tert-butyl ether	1.5	U	0.72	1.5	3.0
75-34-3	1,1-Dichloroethane	1.5	U	0.75	1.5	3.0
78-93-3	2-Butanone	7.5	U	6.3	7.5	15
156-59-2	cis-1,2-Dichloroethene	72	D	1.4	1.5	3.0
74-97-5	Bromochloromethane	1.5	U	1.3	1.5	3.0
67-66-3	Chloroform	1.5	U	0.99	1.5	3.0
71-55-6	1,1,1-Trichloroethane	1.5	U	1.5	1.5	3.0
56-23-5	Carbon tetrachloride	3.0	U	1.6	3.0	3.0
107-06-2	1,2-Dichloroethane	1.5	U	1.2	1.5	3.0
71-43-2	Benzene	1.5	U	0.99	1.5	3.0
79-01-6	Trichloroethene	170	D	1.1	1.5	3.0
78-87-5	1,2-Dichloropropane	3.0	U	1.8	3.0	3.0
75-27-4	Bromodichloromethane	1.5	U	0.78	1.5	3.0
10061-01-5	cis-1,3-Dichloropropene	1.5	U	1.4	1.5	3.0
108-10-1	4-Methyl-2-pentanone	3.0	U	2.5	3.0	15
108-88-3	Toluene	1.5	U	0.96	1.5	3.0
10061-02-6	trans-1,3-Dichloropropene	1.5	U	1.4	1.5	3.0
79-00-5	1,1,2-Trichloroethane	4.8	D	1.1	3.0	3.0
127-18-4	Tetrachloroethene	3.0	U	2.0	3.0	3.0
591-78-6	2-Hexanone	7.5	U	5.1	7.5	15
124-48-1	Dibromochloromethane	3.0	U	1.7	3.0	3.0
106-93-4	1,2-Dibromoethane	1.5	U	1.5	1.5	3.0
108-90-7	Chlorobenzene	1.5	U	0.78	1.5	3.0
100-41-4	Ethylbenzene	1.5	U	1.1	1.5	3.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102 814DL

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04BDL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7950.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/04/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	3.0	U	1.1	3.0	15
100-42-5	Styrene	1.5	U	1.5	1.5	3.0
75-25-2	Bromoform	3.0	U	2.3	3.0	3.0
98-82-8	Isopropylbenzene	1.5	U	1.1	1.5	3.0
79-34-5	1,1,2,2-Tetrachloroethane	54	D	1.3	1.5	3.0
541-73-1	1,3-Dichlorobenzene	1.5	U	0.87	1.5	3.0
106-46-7	1,4-Dichlorobenzene	1.5	U	1.2	1.5	3.0
95-50-1	1,2-Dichlorobenzene	1.5	U	0.99	1.5	3.0
96-12-8	1,2-Dibromo-3-chloropropane	3.0	U	2.3	3.0	3.0
120-82-1	1,2,4-Trichlorobenzene	1.5	U	0.78	1.5	3.0
87-61-6	1,2,3-Trichlorobenzene	1.5	U	0.99	1.5	3.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	3.0	U	2.5	3.0	3.0
110-82-7	Cyclohexane	3.0	U	2.1	3.0	3.0
79-20-9	Methyl acetate	3.0	U	0.87	3.0	3.0
108-87-2	Methylcyclohexane	3.0	U	2.3	3.0	3.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB10-102714

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7920.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB10-102714

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7920.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB11-102914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7918.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB11-102914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7918.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/29/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB12-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-14A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8024.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/30/2014

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB12-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-14A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8024.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/30/2014

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0082.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2'-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0082.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	4.1	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0082.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	74685-33-9	3-Eicosene, (E)-	9.592	4.3	NJ

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD03-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-06A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0081.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2'-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD03-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-06A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0081.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	3.8	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FD03-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-06A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0081.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	79-01-6	Trichloroethylene	1.014	38	NJ
02	79-34-5	Ethane, 1,1,2,2-tetrachloro-	2.994	29	NJ
03		Unknown	9.592	5.1	J

[2]EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0080.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0080.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	2.4	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW03-16I-NWG-102 814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0080.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	79-01-6	Trichloroethylene	1.026	39	NJ
02	79-34-5	Ethane, 1,1,2,2-tetrachloro-	2.994	28	NJ
03	629-96-9	1-Eicosanol	9.592	4.1	NJ

[2]EPA-designated Registry Number.

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0155.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/05/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD04-102914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-12C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0156.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/29/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/05/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

MW01-13Sa-NWG-102714

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

12/9/14

EPA SAMPLE NO.

MW01-13SU-NWG-102714

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0151.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/03/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW02-06SA-NWG-102914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-08C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0143.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/29/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/05/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-01SA-NWG-102914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0144.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/29/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/05/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-03SA-NWG-10 3014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-15B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0146.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/05/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B4562F.D/E6B4562R.D

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Extraction: (Type) SEPF Date Extracted: 11/06/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/15/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD03-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-06A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B4107F.D/E6B4107R.D

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Extraction: (Type) SEPF Date Extracted: 11/04/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/07/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B4106F.D/E6B4106R.D

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Extraction: (Type) SEPF Date Extracted: 11/04/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/07/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N4695F.D/E2N4695R.D

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Extraction: (Type) SEPF Date Extracted: 11/06/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/12/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014RX

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17BRE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N4765F.D/E2N4765R.D

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Extraction: (Type) SEPF Date Extracted: 11/13/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/13/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FD03-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-06A

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N4620F.D/E2N4620R.D

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Extraction: (Type) SEPF Date Extracted: 11/04/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N4619F.D/E2N4619R.D

% Moisture: Decanted: (Y/N) Date Received: 10/28/2014

Extraction: (Type) SEPF Date Extracted: 11/04/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

Client: Tetra Tech, Inc.
Client Sample ID: FB03-103014
Lab ID: N2027-17
Project: CED Area, WE01-Davisville
Collection Date: 10/30/14 14:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_W	
Gasoline Range Organics	ND		100 ^	100	ug/L	1	11/06/2014 13:34	79894
Surrogate: Bromofluorobenzene	101			87-112	%REC	1	11/06/2014 13:34	79894

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.11.12.1758

Client: Tetra Tech, Inc.
Client Sample ID: FD04-102914
Lab ID: N2027-12
Project: CED Area, WE01-Davisville
Collection Date: 10/29/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID					GRO_W			
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/30/2014 15:10	79767
Surrogate: Bromofluorobenzene	88.1			87-112	%REC	1	10/30/2014 15:10	79767

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.11.12.1758

Client: Tetra Tech, Inc.
Client Sample ID: MW01-13SU-NWG-102714
Lab ID: N2027-02
MW01-13SuNWG-102714

Project: CED Area, WE01-Davisville
12/9/14 Collection Date: 10/27/14 14:56

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/30/2014 12:36	79767
Surrogate: Bromofluorobenzene	92.9			87-112	%REC	1	10/30/2014 12:36	79767

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.11.12.1758

Client: Tetra Tech, Inc.
Client Sample ID: MW02-06SA-NWG-102914 **Project:** CED Area, WE01-Davisville
Lab ID: N2027-08 **Collection Date:** 10/29/14 9:48

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_W	
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/30/2014 14:05	79767
Surrogate: Bromofluorobenzene	89.3			87-112	%REC	1	10/30/2014 14:05	79767

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.11.12.1758

Client: Tetra Tech, Inc.
Client Sample ID: MW03-01SA-NWG-102914
Lab ID: N2027-10
Project: CED Area, WE01-Davisville
Collection Date: 10/29/14 12:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	10/30/2014 14:36	79767
Surrogate: Bromofluorobenzene	90.0			87-112	%REC	1	10/30/2014 14:36	79767

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.11.12.1758

Client: Tetra Tech, Inc.
Client Sample ID: MW03-03SA-NWG-103014
Lab ID: N2027-15
Project: CED Area, WE01-Davisville
Collection Date: 10/30/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_W	
Gasoline Range Organics	ND		100 ^	100	ug/L	1	11/06/2014 13:11	79894
Surrogate: Bromofluorobenzene	99.4			87-112	%REC	1	11/06/2014 13:11	79894

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Client: Tetra Tech, Inc.
Client Sample ID: MW03-16I-NWG-102814 **Project:** CED Area, WE01-Davisville
Lab ID: N2027-04 **Collection Date:** 10/28/14 13:17

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	130		100 ^	100	ug/L	1	10/30/2014 13:01	79767
Surrogate: Bromofluorobenzene	88.9			87-112	%REC	1	10/30/2014 13:01	79767

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/12/2014

Client: Tetra Tech, Inc.
Client Sample ID: FB03-103014
Lab ID: N2027-17
Project: CED Area, WE01-Davisville
Collection Date: 10/30/14 14:30

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	11/07/2014 17:00	79797
Surrogate: ortho-Terphenyl	96.5			50-150	%REC	1	11/07/2014 17:00	79797

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/12/2014

Client: Tetra Tech, Inc.
Client Sample ID: FD04-102914
Lab ID: N2027-12
Project: CED Area, WE01-Davisville
Collection Date: 10/29/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	11/07/2014 15:38	79797
Surrogate: ortho-Terphenyl	82.0			50-150	%REC	1	11/07/2014 15:38	79797

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/12/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW01-13SU-NWG-102714
Lab ID: N2027-02
Project: CED Area, WE01-Davisville
Collection Date: 10/27/14 14:56

YL MW01-13Sa-NWG-102714
12/9/14

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	11/07/2014 14:17	79797
Surrogate: ortho-Terphenyl	64.8			50-150	%REC	1	11/07/2014 14:17	79797

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW02-06SA-NWG-102914 **Project:** CED Area, WE01-Davisville
Lab ID: N2027-08 **Collection Date:** 10/29/14 9:48

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						TPH_W		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	11/07/2014 14:58	79797
Surrogate: ortho-Terphenyl	89.1			50-150	%REC	1	11/07/2014 14:58	79797

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/12/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-01SA-NWG-102914 **Project:** CED Area, WE01-Davisville
Lab ID: N2027-10 **Collection Date:** 10/29/14 12:10

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID						**TPH_W**		
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	11/10/2014 11:03	79797
Surrogate: ortho-Terphenyl	96.8			50-150	%REC	1	11/10/2014 11:03	79797

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Client: Tetra Tech, Inc.
Client Sample ID: MW03-03SA-NWG-103014 **Project:** CED Area, WE01-Davisville
Lab ID: N2027-15 **Collection Date:** 10/30/14 10:05

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_W**			
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	11/07/2014 15:59	79797
Surrogate: ortho-Terphenyl	91.6			50-150	%REC	1	11/07/2014 15:59	79797

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

11/12/2014

Client: Tetra Tech, Inc.
Client Sample ID: MW03-16I-NWG-102814
Lab ID: N2027-04
Project: CED Area, WE01-Davisville
Collection Date: 10/28/14 13:17

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D TPH -- TOTAL PETROLEUM HYDROCARBONS (TPH) BY GC-FID					**TPH_W**			
Extractable Total Petroleum Hydrocarbon	ND		0.20 ^	0.20	mg/L	1	11/07/2014 14:37	79797
Surrogate: ortho-Terphenyl	95.9			50-150	%REC	1	11/07/2014 14:37	79797

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.10.24.0936

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2627

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: See DV Report

Missing Information	Date Lab Contacted	Date Received

Validator: LC Date: 12/11/14

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

See DV Report

Case: 01813 SDG: N2027

Sampler: _____ Company: _____ Contacted: Yes No Date: 12/10/14

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: LC Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: JC Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 0813 SDG: N2027

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: LC

Date: 12/10/14

1/13

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: LC

Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Le

Date: 12/10/14

See DV Report

EPA NE - Data Validation Worksheet

Case: 01813 SDG: N2027

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Le

Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Le

Date: 12/10/14

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027 See DV Report

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? Y N

Did the laboratory analyze the initial calibration at the appropriate concentration levels? Y N

Validator: JC Date: 12/10/14

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027 See DV Report

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: JC Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N7027

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: RC Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: YR

Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: Le Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: D1813 SDG: N2027

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: JC Date: 12/10/14

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027 See DV Report

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: JC Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: [signature]

Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4.6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1,2,2-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: LC

Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Je Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane-d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: JC Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Jc

Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: [signature] Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. Y N NA

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? Y N

Were acceptable GPC Calibration Verifications performed at the correct frequency? Y N

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? Y N

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: [signature] Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Rpt

Case: 01813 SDG: N2027

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: [signature]

Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: JC Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix _____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Fe Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: YC Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: [signature] Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: YC

Date: 12/10/14

EPA-NE - Data Validation Worksheet

Case: 01813 SDG: N2027 See DV Report

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Le

Date: 12/10/14

EPA NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: [signature] Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: [signature]

Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? Y N

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: JC

Date: 12/10/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: 21813 SDG: N7027

Pest/PCB-XIII

XIII, SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? Y N

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: YC

Date: 12/10/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: 01813 SDG: N2027

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: [signature]

Date: 12/10/14

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG N2027

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	UG/L	FD04-102914-F	N2027-13A	NM	10/29/2014	11/13/2014	11/14/2014	15	1	16
HG	UG/L	FB03-103014	N2027-17C	NM	10/30/2014	11/17/2014	11/19/2014	18	2	20
HG	UG/L	FD04-102914	N2027-12A	NM	10/29/2014	11/13/2014	11/14/2014	15	1	16
HG	UG/L	MW01-13SU-NWG-10271	N2027-02A	NM	10/27/2014	11/13/2014	11/14/2014	17	1	18
HG	UG/L	MW01-13SU-NWG-10271	N2027-03A	NM	10/27/2014	11/13/2014	11/14/2014	17	1	18
HG	UG/L	MW02-06SA-NWG-10291	N2027-08A	NM	10/29/2014	11/13/2014	11/14/2014	15	1	16
HG	UG/L	MW02-06SA-NWG-10291	N2027-09A	NM	10/29/2014	11/13/2014	11/14/2014	15	1	16
HG	UG/L	MW03-01SA-NWG-10291	N2027-10A	NM	10/29/2014	11/13/2014	11/14/2014	15	1	16
HG	UG/L	MW03-01SA-NWG-10291	N2027-11A	NM	10/29/2014	11/13/2014	11/14/2014	15	1	16
HG	UG/L	MW03-03SA-NWG-10301	N2027-15C	NM	10/30/2014	11/13/2014	11/14/2014	14	1	15
HG	UG/L	MW03-03SA-NWG-10301	N2027-16A	NM	10/30/2014	11/13/2014	11/14/2014	14	1	15
HG	UG/L	MW03-16I-NWG-102814	N2027-04A	NM	10/28/2014	11/13/2014	11/14/2014	16	1	17
HG	UG/L	MW03-16I-NWG-102814-	N2027-05A	NM	10/28/2014	11/13/2014	11/14/2014	16	1	17
HG	UG/L	FB03-103014-F	N2027-18A	NM	10/30/2014	11/17/2014	11/19/2014	18	2	20
M	UG/L	MW03-03SA-NWG-10301	N2027-15C	NM	10/30/2014	11/07/2014	11/13/2014	8	6	14

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	UG/L	MW03-01SA-NWG-10291	N2027-10A	NM	10/29/2014	11/07/2014	11/13/2014	9	6	15
M	UG/L	MW03-16I-NWG-102814-	N2027-05A	NM	10/28/2014	11/07/2014	11/13/2014	10	6	16
M	UG/L	MW03-03SA-NWG-10301	N2027-16A	NM	10/30/2014	11/07/2014	11/13/2014	8	6	14
M	UG/L	MW03-01SA-NWG-10291	N2027-11A	NM	10/29/2014	11/07/2014	11/13/2014	9	6	15
M	UG/L	FB03-103014	N2027-17C	NM	10/30/2014	11/07/2014	11/13/2014	8	6	14
M	UG/L	FB03-103014-F	N2027-18A	NM	10/30/2014	11/07/2014	11/13/2014	8	6	14
M	UG/L	FD04-102914	N2027-12A	NM	10/29/2014	11/07/2014	11/13/2014	9	6	15
M	UG/L	FD04-102914-F	N2027-13A	NM	10/29/2014	11/07/2014	11/13/2014	9	6	15
M	UG/L	MW01-13SU-NWG-10271	N2027-02A	NM	10/27/2014	11/07/2014	11/13/2014	11	6	17
M	UG/L	MW01-13SU-NWG-10271	N2027-03A	NM	10/27/2014	11/07/2014	11/13/2014	11	6	17
M	UG/L	MW02-06SA-NWG-10291	N2027-08A	NM	10/29/2014	11/07/2014	11/13/2014	9	6	15
M	UG/L	MW02-06SA-NWG-10291	N2027-09A	NM	10/29/2014	11/07/2014	11/13/2014	9	6	15
M	UG/L	MW03-16I-NWG-102814	N2027-04A	NM	10/28/2014	11/07/2014	11/13/2014	10	6	16
OS	UG/L	FB03-103014	N2027-17B	NM	10/30/2014	11/04/2014	11/11/2014	5	7	12
OS	UG/L	FD03-102814	N2027-06A	NM	10/28/2014	11/04/2014	11/11/2014	7	7	14
OS	UG/L	MW03-16I-NWG-102814	N2027-04C	NM	10/28/2014	11/04/2014	11/11/2014	7	7	14
OV	UG/L	MW03-16I-NWG-102814	N2027-04B	NM	10/28/2014	11/03/2014	11/03/2014	6	0	6
OV	UG/L	MW02-06SA-NWG-10291	N2027-08B	NM	10/29/2014	11/03/2014	11/03/2014	5	0	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/L	TB12-103014	N2027-14A	NM	10/30/2014	11/07/2014	11/07/2014	8	0	8
OV	UG/L	TB10-102714	N2027-01A	NM	10/27/2014	11/03/2014	11/03/2014	7	0	7
OV	UG/L	TB11-102914	N2027-07A	NM	10/29/2014	11/03/2014	11/03/2014	5	0	5
OV	UG/L	MW01-13SU-NWG-10271	N2027-02B	NM	10/27/2014	11/03/2014	11/03/2014	7	0	7
OV	UG/L	MW03-01SA-NWG-10291	N2027-10B	NM	10/29/2014	11/03/2014	11/03/2014	5	0	5
OV	UG/L	FD04-102914	N2027-12B	NM	10/29/2014	11/03/2014	11/03/2014	5	0	5
OV	UG/L	FB03-103014	N2027-17A	NM	10/30/2014	11/07/2014	11/07/2014	8	0	8
OV	UG/L	MW03-03SA-NWG-10301	N2027-15A	NM	10/30/2014	11/07/2014	11/07/2014	8	0	8
SIM	UG/L	MW02-06SA-NWG-10291	N2027-08C	NM	10/29/2014	11/05/2014	11/14/2014	7	9	16
SIM	UG/L	FD04-102914	N2027-12C	NM	10/29/2014	11/05/2014	11/14/2014	7	9	16
SIM	UG/L	FB03-103014	N2027-17B	NM	10/30/2014	11/05/2014	11/14/2014	6	9	15
SIM	UG/L	MW01-13SU-NWG-10271	N2027-02C	NM	10/27/2014	11/03/2014	11/14/2014	7	11	18
SIM	UG/L	MW03-03SA-NWG-10301	N2027-15B	NM	10/30/2014	11/05/2014	11/14/2014	6	9	15
SIM	UG/L	MW03-01SA-NWG-10291	N2027-10C	NM	10/29/2014	11/05/2014	11/14/2014	7	9	16
PCB	UG/L	FD03-102814	N2027-06A	NM	10/28/2014	11/04/2014	11/11/2014	7	7	14
PCB	UG/L	MW03-16I-NWG-102814	N2027-04C	NM	10/28/2014	11/04/2014	11/11/2014	7	7	14
PCB	UG/L	FB03-103014	N2027-17B	NM	10/30/2014	11/06/2014	11/12/2014	7	6	13
PEST	UG/L	FB03-103014	N2027-17B	NM	10/30/2014	11/06/2014	11/15/2014	7	9	16

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	UG/L	FD03-102814	N2027-06A	NM	10/28/2014	11/04/2014	11/07/2014	7	3	10
PEST	UG/L	MW03-16I-NWG-102814	N2027-04C	NM	10/28/2014	11/04/2014	11/07/2014	7	3	10
ETPH	MG/L	MW01-13SU-NWG-10271	N2027-02C	NM	10/27/2014	11/03/2014	11/07/2014	7	4	11
ETPH	MG/L	FD04-102914	N2027-12C	NM	10/29/2014	11/03/2014	11/07/2014	5	4	9
ETPH	MG/L	MW02-06SA-NWG-10291	N2027-08C	NM	10/29/2014	11/03/2014	11/07/2014	5	4	9
ETPH	MG/L	MW03-01SA-NWG-10291	N2027-10C	NM	10/29/2014	11/03/2014	11/10/2014	5	7	12
ETPH	MG/L	MW03-03SA-NWG-10301	N2027-15B	NM	10/30/2014	11/03/2014	11/07/2014	4	4	8
ETPH	MG/L	MW03-16I-NWG-102814	N2027-04C	NM	10/28/2014	11/03/2014	11/07/2014	6	4	10
ETPH	MG/L	FB03-103014	N2027-17B	NM	10/30/2014	11/03/2014	11/07/2014	4	4	8
GRO	UG/L	MW02-06SA-NWG-10291	N2027-08B	NM	10/29/2014	10/30/2014	10/30/2014	1	0	1
GRO	UG/L	FB03-103014	N2027-17A	NM	10/30/2014	11/06/2014	11/06/2014	7	0	7
GRO	UG/L	MW01-13SU-NWG-10271	N2027-02B	NM	10/27/2014	10/30/2014	10/30/2014	3	0	3
GRO	UG/L	MW03-01SA-NWG-10291	N2027-10B	NM	10/29/2014	10/30/2014	10/30/2014	1	0	1
GRO	UG/L	MW03-03SA-NWG-10301	N2027-15A	NM	10/30/2014	11/06/2014	11/06/2014	7	0	7
GRO	UG/L	MW03-16I-NWG-102814	N2027-04B	NM	10/28/2014	10/30/2014	10/30/2014	2	0	2
GRO	UG/L	FD04-102914	N2027-12B	NM	10/29/2014	10/30/2014	10/30/2014	1	0	1

N2027

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page _____ of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Indicate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220
Telephone #: 412-921-7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.
P.O. No.: _____ RQN: _____

Project No.: 112G01913 0000. 2123 WE01
Site Name: FMR QKBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Payon

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 - - 4 -

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	Analyses: TPH-GRO	TPH-DRO	Naphthalene	metals	SVOCs, Pest/PCBs	QA/QC Reporting Level
01	TB10-102714	10-27-14	0700	G	QC	3	-	-	-	3	-	-	-	-	-	
02	MW01-13SA-NWG-102714	↓	1456	G	GW	4	4	-	1	2	2	2	2	1	-	
03	MW01-13SA-NWG-102714-F	↓	1456	G	GW	-	-	-	1	-	-	-	-	1	-	'F' = Field Filtered
04	MW03-16I-NWG-102814	10-28-14	1317	G	GW	4	5	-	1	2	2	2	-	1	3	
05	MW03-16I-NWG-102814-F	↓	1317	G	GW	-	-	-	1	1	1	1	-	1	1	"F" = Field Filtered
06	FD03-102814	↓	0000	G	GW	-	3	-	-	-	-	-	-	-	3	
	Notes - Samples designated w/the -F were filtered in the field.															

Relinquished by:	Received by:	Date:	Time:	Temp°C
Wyatt Payon	[signature]	10-28-14	16:13	2.1

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

JR

N2027

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Page _____ of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Indicate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen / Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220
Telephone #: 412 921-7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 0000 2123 WE01
Site Name: FMC NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Payne

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 – – 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	Analyses: TPH-GRO	TPH-DRO	Naphthalene	Total metals					QA/QC Reporting Level
07	TB11-102914	10-29-14	0700	G	QC	3	–	–	–	3	–	–	–	–					
08	MW02-06sa-NWG-102914		0948	G	GW	4	4	–	1	2	2	2	2	1					
09	MW02-06sa-NWG-102914-F		0948	G	GW	–	–	–	1	–	–	–	–	1					"F" = Field Filtered
10	MW03-01sa-NWG-102914		1210	G	GW	4	4	–	1	2	2	2	2	1					
11	MW03-01sa-NWG-102914-F		1210	G	GW	–	–	–	1	–	–	–	–	1					"F" = Field Filtered
12	FD04-102914		0000	G	GW	4	4	–	1	2	2	2	2	1					
13	FD04-102914	-F	0000	G	GW	–	–	–	1	–	–	–	–	1					"F" Field Filtered
	Notes - Samples designated w/ the F were Filtered in the Field																		

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards:
_____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Natti Pe		10-29-14	16:07	5.1°C
				5.7°C
				IR

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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N2027

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page _____ of _____

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Ind icate Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Andersen/Lee Ann
661 Andersen Dr.
Pittsburgh, PA 15220

Telephone #: 412 921 7090
Project Mgr. S. Andersen

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G0 1813 - 0000 2123
Site Name: FMR NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): W. Pryor

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 2 - - 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

	Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		Analyses: VOCs	TPH-GRO	TPH-DRO	Naphthalene	Metals	SVOCs/Pest/PCBs	
14	15	TB12-103014	10-30-14	0700	G	QC	3	-	-	-	-	3	-	-	-	-	-	
15	16	MW03-03sa-NWG-103014		1005	G	GW	12	12	-	2	-	6	6	6	6	2	-	
16	17	MW03-03sa-NWG-103014-F		1005	G	GW	-	-	-	2	-	-	-	-	-	2	-	
17	18	FB03-103014		1430	G	GW	4	6	-	1	-	2	2	2	2	1	2	
18	19	FB03-103014-F		1430	G	GW	-	-	-	1	-	-	-	-	-	1	-	
		Notes: Samples designated w/the F Were Filtered in the Field																

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp °C
Matt Re		10-30-14	1650	5.6/3.6

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Page 8 of 1518

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By:	Page 01 of 00
Reviewed By:	Log-in Date 10/28/2014
Work Order: N2027	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker; Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent
9. Cooler Temperature: 2.1 °C
10. Does information on TR/COCs and sample tags agree? Yes / No
11. Date Received at Laboratory: 10/28/2014
12. Time Received: 16:13

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N2027-01						H	
N2027-02	<2					H	
N2027-03	<2						
N2027-04	<2					H	
N2027-05	<2						
N2027-06							

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WJL	Page 01 of 00
Reviewed By: KP	Log-in Date 10/29/2014
Work Order: N2027	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	5.7 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/29/2014
12. Time Received	16:07

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N2027-07						H	
N2027-08	<2					H	
N2027-09	<2					H	
N2027-10	<2					H	
N2027-11	<2					H	
N2027-12	<2					H	
N2027-13	<2					H	

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 10/30/2014
Work Order: N2027	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	Drop Off N/A
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed / Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	5.6 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/30/2014
12. Time Received	16:01

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N2027-15	<2					H	
N2027-16	<2						
N2027-17	<2					H	
N2027-18	<2						

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Data File: \\avogadro\organics\V4.i\141030.B\V4D08177.D
Report Date: 06-Nov-2014 15:17

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\avogadro\organics\V4.i\141030.B\V4D08177.D
Lab Smp Id: N2027-04B Client Smp ID: MW03-16I-NWG-102814
Inj Date : 30-OCT-2014 13:01
Operator : WL SRC: LIMS Inst ID: V4.i
Smp Info : 5ML,N2027-04B,,79767
Misc Info :
Comment :
Method : \\avogadro\organics\V4.i\141030.B\v4GRO.m
Meth Date : 31-Oct-2014 11:24 wluo Quant Type: ESTD
Cal Date : 06-OCT-2014 12:52 Cal File: V4D07835.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14
Processing Host: TARGET103

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

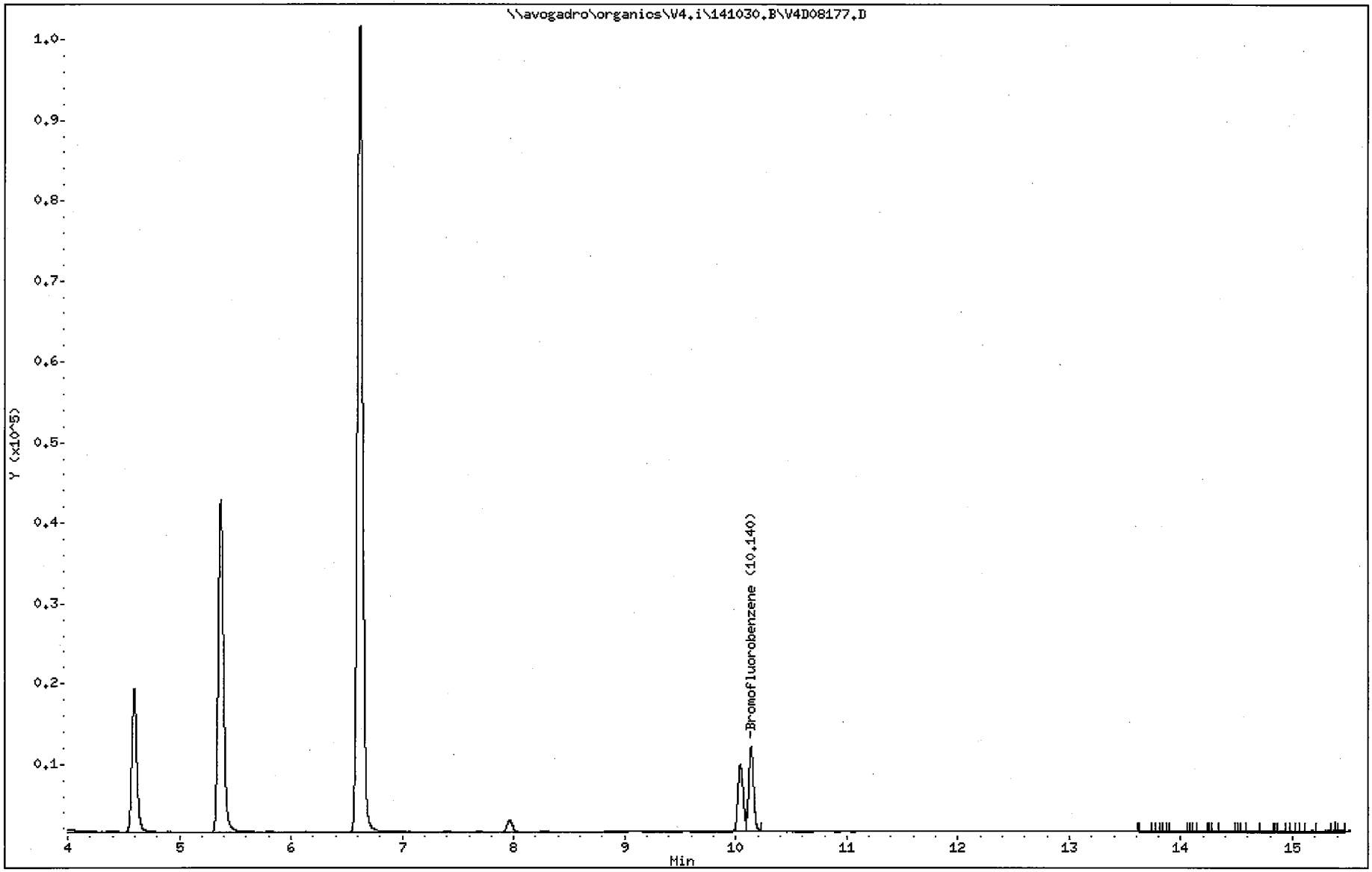
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (PPM)	CONCENTRATIONS FINAL (ug/L)
	1 Gasoline Range Organics	6.619	9.112	-2.493	11408663	126.465	130 (M)
$	2 Bromofluorobenzene	10.140	10.135	0.005	605919	17.7863	18 (M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\avogadro\organics\V4.i\141030.B\V4D08177.D
Date : 30-OCT-2014 13:01
Client ID: MW03-16I-NWG-102814
Instrument: V4.i
Sample Info: 5ML,N2027-04B,,79767
Purge Volume: 5.0
Operator: WL SRC: LIMS
Column phase: RTX502.2
Column diameter: 0.53



Data File: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Report Date: 09-Oct-2014 08:18

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\avogadro\organics\V4.i\141006.B\V4D07832.D
Lab Smp Id: VSTD0204A Client Smp ID: VSTD0204A
Inj Date : 06-OCT-2014 11:25
Operator : WL SRC: WL Inst ID: V4.i
Smp Info : 5ML,VSTD0204A,VSTD0204A
Misc Info :
Comment :
Method : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Meth Date : 06-Oct-2014 14:10 wluo Quant Type: ESTD
Cal Date : 15-AUG-2013 16:33 Cal File: V4D07276.D
Als bottle: 5 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

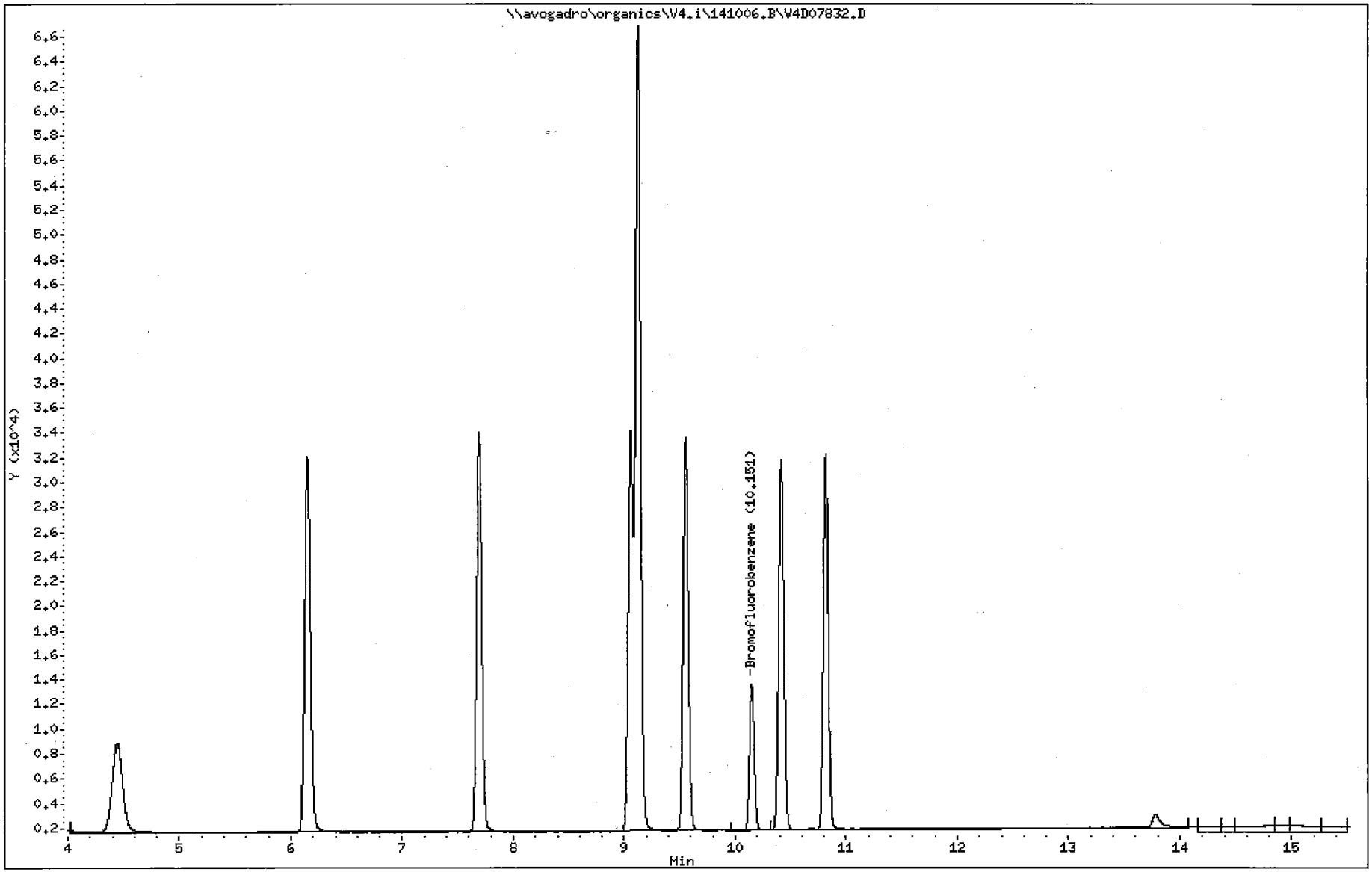
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (PPM)	AMOUNTS ON-COL (PPM)
1	Gasoline Range Organics	9.126	9.134	-0.008	17476573	200.000	190(M)
$ 2	Bromofluorobenzene	10.150	10.155	-0.005	690594	20.0000	20(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Date : 06-OCT-2014 11:25
Client ID: VSTD0204A
Sample Info: 5ML,VSTD0204A,VSTD0204A
Purge Volume: 5.0
Column phase: RTX502.2

Instrument: V4.i
Operator: WL SRC: WL
Column diameter: 0.53



Data File: \\Avogadro\Organics\V10.I\141103.B\V8D7922.d
Report Date: 18-Nov-2014 11:37

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\Avogadro\Organics\V10.I\141103.B\V8D7922.d
Lab Smp Id: N2027-04B Client Smp ID: MW03-16I-NWG-102814
Inj Date : 03-NOV-2014 15:16
Operator : alm SRC: LIMS Inst ID: V10.i
Smp Info : 5ML,N2027-04B,,79801
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\141103.B\v108260Gadd-6lvl.m
Meth Date : 18-Nov-2014 11:36 amarquis Quant Type: ISTD
Cal Date : 31-OCT-2014 08:45 Cal File: V8D7872.d
Als bottle: 100
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: OLM_VOA.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

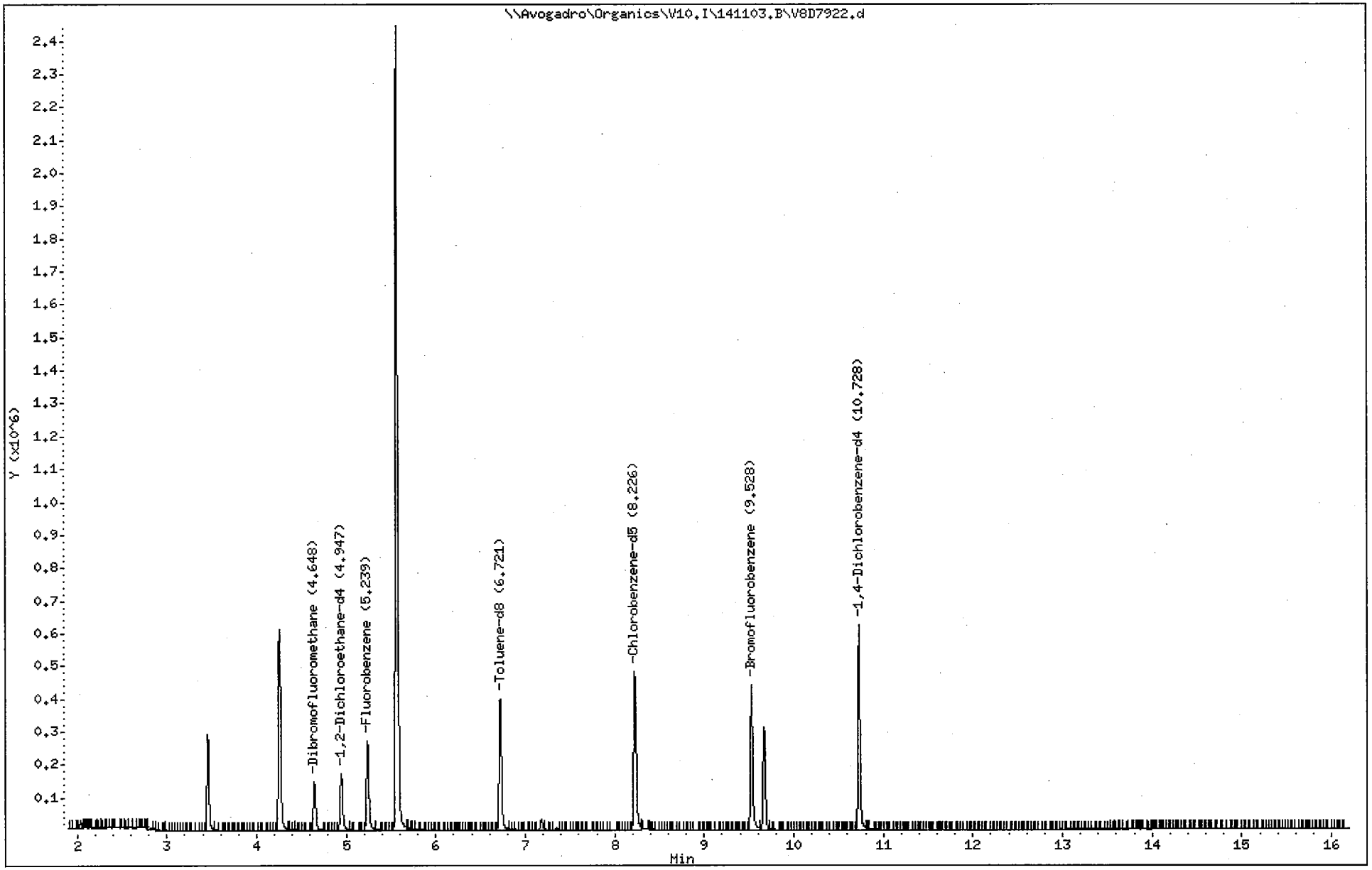
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	4 Vinyl Chloride	62	1.856	1.860	(0.354)	5345	2.39738	2.4
	21 trans-1,2-Dichloroethene	96	3.457	3.454	(0.660)	66024	43.8495	44
	28 cis-1,2-Dichloroethene	96	4.255	4.261	(0.812)	174020	104.915	100
$	36 Dibromofluoromethane	113	4.647	4.644	(0.887)	74241	56.9534	57
$	42 1,2-Dichloroethane-d4	102	4.946	4.946	(0.944)	11325	52.7557	53
*	46 Fluorobenzene	96	5.239	5.236	(1.000)	172951	50.0000	
	47 Trichloroethene	130	5.563	5.567	(1.062)	566601	349.032	350(A)
$	58 Toluene-d8	98	6.721	6.718	(0.817)	221270	47.1454	47
	62 1,1,2-Trichloroethane	97	7.184	7.178	(1.371)	8248	5.63960	5.6(H)
*	68 Chlorobenzene-d5	117	8.226	8.226	(1.000)	211612	50.0000	
$	79 Bromofluorobenzene	95	9.525	9.525	(1.158)	135611	47.8992	48
	80 1,1,2,2-Tetrachloroethane	83	9.669	9.669	(0.901)	117682	65.1823	65
*	92 1,4-Dichlorobenzene-d4	152	10.727	10.727	(1.000)	118133	50.0000	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
H - Operator selected an alternate compound hit.

Data File: \\Avogadro\Organics\V10.I\141103.B\V8D7922.d
Date : 03-NOV-2014 15:16
Client ID: MW03-16I-NWG-102814
Instrument: V10.i
Sample Info: 5ML,N2027-04B,,79801
Purge Volume: 5.0
Operator: alm SRC: LIMS
Column phase: DB-624
Column diameter: 0.25



N2027

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 8260C, VOC by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V10
Instrument Type: GCMS-VOA

Description: HP7890A
Manufacturer: Agilent
Model: 7890A / 5975C
GC Column used: 30 m X 0.25 mm ID [1.40 um thickness] DB-624 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW03-03SA-NWG-103014 (N2027-15AMS) and MW03-03SA-NWG-103014 (N2027-15AMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

The following samples were analyzed at dilution:

MW03-16I-NWG-102814 (N2027-04BDL) : Dilution Factor: 3

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

· M1 peak tailing or fronting
· M2 peak co-elution
· M3 rising or falling baseline
· M4 retention time shift
· M5 miscellaneous - under this category, the justification is explained
· M6 software did not integrate peak
· M7 partial peak integration

Manual integration was performed on the following:

LCS-79801 2-Butanone due to M6

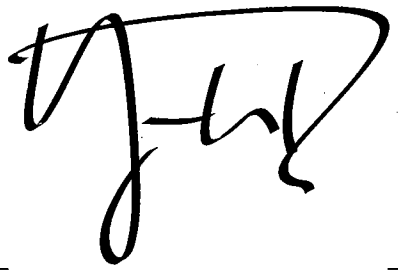
VSTD00110D Bromomethane due to M3

VSTD00510Y 2-Butanone due to M6

VSTD02010Y 2-Butanone due to M6

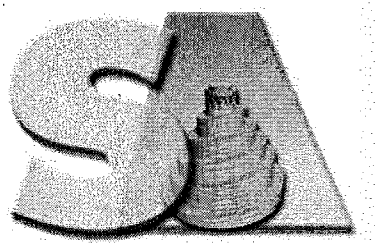
VSTD05010Y 2-Butanone due to M6

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____11/19/2014_____



Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

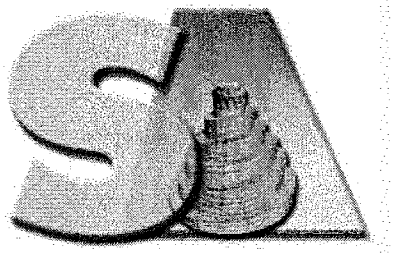
A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10Y

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D7869.D BFB Injection Date: 10/31/2014

Instrument ID: V10 BFB Injection Time: 7:23

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	35.8
75	30.0 - 80.0% of mass 95	62.7
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 -120% of mass 95	74.8
175	5.0 - 9.0% of mass 174	5.7 (7.6)1
176	95.0 - 101% of mass 174	72.7 (97.2)1
177	5.0 - 9.0% of mass 176	4.8 (6.6)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010Y	VSTD05010Y	V8D7871.D	10/31/2014	8:14
02	VSTD02010Y	VSTD02010Y	V8D7872.D	10/31/2014	8:45
03	VSTD00510Y	VSTD00510Y	V8D7873.D	10/31/2014	9:16
04	VSTD00110Y	VSTD00110Y	V8D7875.D	10/31/2014	10:17
05	VSTD20010Y	VSTD20010Y	V8D7876.D	10/31/2014	10:48
06	VSTD10010Y	VSTD10010Y	V8D7877.D	10/31/2014	11:19
07	VICV05010Y	VICV05010Y	V8D7878.D	10/31/2014	12:10

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date(s): 10/31/2014 10/31/2014

Heated Purge: (Y/N) N Calibration Times: 8:14 11:19

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7873.D RRF020 = V8D7872.D RRF050 = V8D7871.D RRF100 = V8D7877.D RRF200 = V8D7876.D
RRF001 = V8D7875.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.691	0.766	0.725	0.656	0.654	0.811					0.717	8.7
Chloromethane	0.859	0.923	0.833	0.799	0.740	1.037					0.865	12.0
Vinyl chloride	0.617	0.713	0.626	0.649	0.589	0.674					0.645	6.8
Bromomethane	0.238	0.280	0.276	0.269	0.258	0.214					0.256	10.0
Chloroethane	0.353	0.394	0.354	0.356	0.329	0.422					0.368	9.2
Trichlorofluoromethane	1.150	1.253	1.171	1.151	1.160	1.328					1.202	6.1
1,1-Dichloroethene	0.399	0.441	0.401	0.397	0.365	0.454					0.410	7.9
Acetone	0.037	0.053	0.042	0.043	0.040						0.043	13.7
Carbon disulfide	1.173	1.315	1.203	1.242	1.146	1.609					1.282	13.4
Methylene chloride	0.433	0.475	0.424	0.426	0.400	0.513					0.445	9.2
trans-1,2-Dichloroethene	0.409	0.476	0.428	0.432	0.404	0.462					0.435	6.7
Methyl tert-butyl ether	1.486	1.708	1.605	1.601	1.555	1.638					1.599	4.7
1,1-Dichloroethane	1.051	1.213	1.096	1.072	1.023	1.212					1.111	7.4
2-Butanone	0.034	0.045	0.046	0.047	0.046						0.044	12.1
cis-1,2-Dichloroethene	0.472	0.530	0.475	0.477	0.449	0.474					0.480	5.6
Bromochloromethane	0.233	0.256	0.236	0.234	0.204	0.243					0.234	7.3
Chloroform	1.090	1.209	1.122	1.113	1.118	1.234					1.148	5.1
1,1,1-Trichloroethane	1.100	1.240	1.136	1.151	1.154	1.240					1.170	4.9
Carbon tetrachloride	0.903	1.068	0.995	1.013	1.029	1.049					1.009	5.8
1,2-Dichloroethane	1.216	1.386	1.297	1.292	1.330	1.431					1.325	5.7
Benzene	1.552	1.788	1.653	1.678	1.613	1.776					1.677	5.5
Trichloroethene	0.438	0.499	0.440	0.459	0.442	0.538					0.469	8.7
1,2-Dichloropropane	0.466	0.548	0.516	0.523	0.502	0.598					0.525	8.5
Bromodichloromethane	0.751	0.922	0.898	0.899	0.918	0.954					0.891	8.0
cis-1,3-Dichloropropene	0.682	0.841	0.805	0.832	0.849	0.619					0.771	12.6
4-Methyl-2-pentanone	0.515	0.691	0.659	0.699	0.708						0.654	12.2
Toluene	1.708	1.942	1.824	1.857	1.834	1.857					1.837	4.1

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date(s): 10/31/2014 10/31/2014

Heated Purge: (Y/N) N Calibration Times: 8:14 11:19

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7873.D RRF020 = V8D7872.D RRF050 = V8D7871.D RRF100 = V8D7877.D RRF200 = V8D7876.D
RRF001 = V8D7875.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
trans-1,3-Dichloropropene	0.698	0.790	0.793	0.870	0.894	0.648					0.782	12.2
1,1,2-Trichloroethane	0.380	0.445	0.413	0.406	0.409	0.485					0.423	8.7
Tetrachloroethene	0.342	0.408	0.363	0.366	0.345	0.421					0.374	8.8
2-Hexanone	0.304	0.406	0.414	0.443	0.433						0.400	14.0
Dibromochloromethane	0.444	0.558	0.531	0.544	0.540	0.438					0.509	10.5
1,2-Dibromoethane	0.372	0.447	0.412	0.419	0.404	0.406					0.410	6.0
Chlorobenzene	1.058	1.156	1.064	1.092	1.039	1.055					1.077	3.9
Ethylbenzene	0.502	0.589	0.566	0.577	0.552	0.432					0.537	11.1
Xylene (Total)	0.590	0.737	0.686	0.698	0.676	0.599					0.664	8.7
Styrene	0.946	1.172	1.138	1.167	1.148	0.838					1.068	13.2
Bromoform	0.252	0.333	0.337	0.350	0.354	0.218					0.307	18.7
Isopropylbenzene	1.626	1.999	1.896	1.942	1.920	1.604					1.831	9.3
1,1,2,2-Tetrachloroethane	0.726	0.861	0.758	0.765	0.714	0.762					0.764	6.8
1,3-Dichlorobenzene	1.333	1.555	1.381	1.377	1.347	1.506					1.417	6.5
1,4-Dichlorobenzene	1.504	1.681	1.432	1.438	1.394	1.759					1.535	9.8
1,2-Dichlorobenzene	1.399	1.523	1.369	1.354	1.287	1.349					1.380	5.7
1,2-Dibromo-3-chloropropane	0.165	0.203	0.186	0.190	0.192	0.174					0.185	7.3
1,2,4-Trichlorobenzene	0.830	0.944	0.876	0.863	0.854	0.855					0.870	4.5
1,2,3-Trichlorobenzene	0.790	0.883	0.772	0.798	0.769	0.825					0.806	5.3
1,1,2-Trichloro-1,2,2-trifluoroe	0.535	0.564	0.533	0.502	0.473	0.577					0.531	7.2
Cyclohexane	0.908	1.049	0.994	0.993	0.962	1.075					0.997	6.0
Methyl acetate	0.711	0.775	0.693	0.706	0.670	0.878					0.739	10.4
Methylcyclohexane	0.610	0.726	0.675	0.667	0.641	0.673					0.665	5.8

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date(s): 10/31/2014 10/31/2014

Heated Purge: (Y/N) N Calibration Times: 8:14 11:19

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7873.D RRF020 = V8D7872.D RRF050 = V8D7871.D RRF100 = V8D7877.D RRF200 = V8D7876.D
RRF001 = V8D7875.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					$\overline{RRF}$	% RSD
Dibromofluoromethane	0.375	0.382	0.378	0.369	0.380	0.400					0.381	2.8
1,2-Dichloroethane-d4	0.062	0.063	0.063	0.061	0.061	0.067					0.063	3.4
Toluene-d8	1.119	1.104	1.109	1.138	1.074	1.100					1.107	1.9
Bromofluorobenzene	0.661	0.664	0.668	0.678	0.674	0.628					0.662	2.7

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 10/31/2014 Time: 12:10

Lab File ID: V8D7878.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VICV05010Y Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.717	0.688	0.100	-4.1	20.0
Chloromethane	0.865	0.831	0.100	-4.0	20.0
Vinyl chloride	0.645	0.653	0.100	1.4	20.0
Bromomethane	0.256	0.256	0.100	0.3	20.0
Chloroethane	0.368	0.355	0.100	-3.5	20.0
Trichlorofluoromethane	1.202	1.126	0.100	-6.4	20.0
1,1-Dichloroethene	0.410	0.420	0.100	2.5	20.0
Acetone	0.043	0.051	0.100	19.3	20.0
Carbon disulfide	1.282	1.316	0.100	2.6	20.0
Methylene chloride	0.445	0.441	0.100	-1.0	20.0
trans-1,2-Dichloroethene	0.435	0.432	0.100	-0.7	20.0
Methyl tert-butyl ether	1.599	1.567	0.100	-2.0	20.0
1,1-Dichloroethane	1.111	1.069	0.200	-3.8	20.0
2-Butanone	0.044	0.033	0.100	-25.2	20.0
cis-1,2-Dichloroethene	0.480	0.481	0.100	0.3	20.0
Bromochloromethane	0.234	0.236	0.100	0.8	20.0
Chloroform	1.148	1.123	0.200	-2.1	20.0
1,1,1-Trichloroethane	1.170	1.115	0.100	-4.7	20.0
Carbon tetrachloride	1.009	0.967	0.100	-4.2	20.0
1,2-Dichloroethane	1.325	1.270	0.100	-4.2	20.0
Benzene	1.677	1.667	0.500	-0.6	20.0
Trichloroethene	0.469	0.446	0.200	-5.0	20.0
1,2-Dichloropropane	0.525	0.507	0.100	-3.6	20.0
Bromodichloromethane	0.891	0.869	0.200	-2.4	20.0
cis-1,3-Dichloropropene	0.771	0.814	0.200	5.5	20.0
4-Methyl-2-pentanone	0.654	0.628	0.100	-4.1	20.0
Toluene	1.837	1.822	0.400	-0.8	20.0
trans-1,3-Dichloropropene	0.782	0.838	0.100	7.1	20.0
1,1,2-Trichloroethane	0.423	0.400	0.100	-5.5	20.0
Tetrachloroethene	0.374	0.359	0.200	-4.1	20.0
2-Hexanone	0.400	0.431	0.100	7.7	20.0
Dibromochloromethane	0.509	0.499	0.100	-1.9	20.0
1,2-Dibromoethane	0.410	0.395	0.100	-3.6	20.0
Chlorobenzene	1.077	1.053	0.500	-2.2	20.0
Ethylbenzene	0.537	0.544	0.100	1.4	20.0
Xylene (Total)	0.664	0.667	0.100	0.4	20.0
Styrene	1.068	1.133	0.300	6.1	20.0
Bromoform	0.307	0.311	0.100	1.3	20.0
Isopropylbenzene	1.831	1.813	0.100	-1.0	20.0
1,1,2,2-Tetrachloroethane	0.764	0.765	0.300	0.1	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 10/31/2014 Time: 12:10

Lab File ID: V8D7878.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VICV05010Y Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.417	1.390	0.600	-1.9	20.0
1,4-Dichlorobenzene	1.535	1.472	0.500	-4.1	20.0
1,2-Dichlorobenzene	1.380	1.361	0.400	-1.4	20.0
1,2-Dibromo-3-chloropropane	0.185	0.182	0.050	-1.7	20.0
1,2,4-Trichlorobenzene	0.870	0.888	0.200	2.0	20.0
1,2,3-Trichlorobenzene	0.806	0.801	0.100	-0.7	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.531	0.506	0.100	-4.7	20.0
Cyclohexane	0.997	0.996	0.100	-0.1	20.0
Methyl acetate	0.739	0.686	0.100	-7.2	20.0
Methylcyclohexane	0.665	0.667	0.100	0.3	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 10/31/2014 Time: 12:10

Lab File ID: V8D7878.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VICV05010Y Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	$\overline{RRF}$	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.381	0.381	0.100	0.2	20.0
1,2-Dichloroethane-d4	0.063	0.062	0.100	-0.6	20.0
Toluene-d8	1.107	1.107	0.100	0.0	20.0
Bromofluorobenzene	0.662	0.646	0.100	-2.4	20.0

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10B

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D7943.D BFB Injection Date: 11/04/2014

Instrument ID: V10 BFB Injection Time: 9:18

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.3
75	30.0 - 80.0% of mass 95	64.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.6 (0.8)1
174	50.0 -120% of mass 95	75.2
175	5.0 - 9.0% of mass 174	6.0 (7.9)1
176	95.0 - 101% of mass 174	72.0 (95.8)1
177	5.0 - 9.0% of mass 176	4.8 (6.7)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010B	VSTD05010B	V8D7944.D	11/04/2014	10:00
02	LCS-79832	LCS-79832	V8D7945.D	11/04/2014	10:44
03	LCSD-79832	LCSD-79832	V8D7946.D	11/04/2014	11:15
04	MB-79832	MB-79832	V8D7949.D	11/04/2014	13:05
05	MW03-16I-NWG-102814DL	N2027-04BDL	V8D7950.D	11/04/2014	13:42

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/04/2014 Time: 10:00

Lab File ID: V8D7944.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VSTD05010B Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.717	0.758	0.100	5.7	20.0
Chloromethane	0.865	0.902	0.100	4.2	20.0
Vinyl chloride	0.645	0.719	0.100	11.6	20.0
Bromomethane	0.256	0.307	0.100	19.9	20.0
Chloroethane	0.368	0.393	0.100	6.9	20.0
Trichlorofluoromethane	1.202	1.416	0.100	17.8	20.0
1,1-Dichloroethene	0.410	0.406	0.100	-0.9	20.0
Acetone	0.043	0.060	0.100	39.3	20.0
Carbon disulfide	1.282	1.268	0.100	-1.1	20.0
Methylene chloride	0.445	0.436	0.100	-2.0	20.0
trans-1,2-Dichloroethene	0.435	0.450	0.100	3.3	20.0
Methyl tert-butyl ether	1.599	1.745	0.100	9.2	20.0
1,1-Dichloroethane	1.111	1.117	0.200	0.5	20.0
2-Butanone	0.044	0.046	0.100	5.6	20.0
cis-1,2-Dichloroethene	0.480	0.481	0.100	0.3	20.0
Bromochloromethane	0.234	0.242	0.100	3.3	20.0
Chloroform	1.148	1.226	0.200	6.8	20.0
1,1,1-Trichloroethane	1.170	1.308	0.100	11.8	20.0
Carbon tetrachloride	1.009	1.166	0.100	15.6	20.0
1,2-Dichloroethane	1.325	1.543	0.100	16.4	20.0
Benzene	1.677	1.708	0.500	1.9	20.0
Trichloroethene	0.469	0.469	0.200	0.0	20.0
1,2-Dichloropropane	0.525	0.521	0.100	-0.9	20.0
Bromodichloromethane	0.891	0.993	0.200	11.5	20.0
cis-1,3-Dichloropropene	0.771	0.878	0.200	13.9	20.0
4-Methyl-2-pentanone	0.654	0.805	0.100	23.0	20.0
Toluene	1.837	1.891	0.400	2.9	20.0
trans-1,3-Dichloropropene	0.782	0.935	0.100	19.6	20.0
1,1,2-Trichloroethane	0.423	0.437	0.100	3.4	20.0
Tetrachloroethene	0.374	0.366	0.200	-2.2	20.0
2-Hexanone	0.400	0.482	0.100	20.4	20.0
Dibromochloromethane	0.509	0.538	0.100	5.8	20.0
1,2-Dibromoethane	0.410	0.409	0.100	-0.2	20.0
Chlorobenzene	1.077	1.029	0.500	-4.5	20.0
Ethylbenzene	0.537	0.549	0.100	2.4	20.0
Xylene (Total)	0.664	0.682	0.100	2.7	20.0
Styrene	1.068	1.100	0.300	3.0	20.0
Bromoform	0.307	0.342	0.100	11.1	20.0
Isopropylbenzene	1.831	1.928	0.100	5.3	20.0
1,1,2,2-Tetrachloroethane	0.764	0.712	0.300	-6.9	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/04/2014 Time: 10:00

Lab File ID: V8D7944.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VSTD05010B Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.417	1.278	0.600	-9.8	20.0
1,4-Dichlorobenzene	1.535	1.335	0.500	-13.0	20.0
1,2-Dichlorobenzene	1.380	1.250	0.400	-9.4	20.0
1,2-Dibromo-3-chloropropane	0.185	0.201	0.050	8.4	20.0
1,2,4-Trichlorobenzene	0.870	0.843	0.200	-3.1	20.0
1,2,3-Trichlorobenzene	0.806	0.779	0.100	-3.4	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.531	0.584	0.100	10.1	20.0
Cyclohexane	0.997	1.066	0.100	6.9	20.0
Methyl acetate	0.739	0.788	0.100	6.6	20.0
Methylcyclohexane	0.665	0.749	0.100	12.6	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/04/2014 Time: 10:00

Lab File ID: V8D7944.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VSTD05010B Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.381	0.412	0.100	8.1	20.0
1,2-Dichloroethane-d4	0.063	0.070	0.100	11.9	20.0
Toluene-d8	1.107	1.061	0.100	-4.2	20.0
Bromofluorobenzene	0.662	0.723	0.100	9.2	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79832

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D7949.D Lab Sample ID: MB-79832

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/04/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 13:05

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79832	LCS-79832	V8D7945.D	10:44
02	LCSD-79832	LCSD-79832	V8D7946.D	11:15
03	MW03-16I-NWG-102814DL	N2027-04BDL	V8D7950.D	13:42

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79832

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79832

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7949.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/04/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79832

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79832

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7949.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/04/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79832

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79832 LCS Lot No.:

Date Extracted: 11/04/2014 Date Analyzed (1): 11/04/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	48.7073	97		30 - 155
Chloromethane	50.0000	0.0000	50.3218	101		40 - 125
Vinyl chloride	50.0000	0.0000	50.8470	102		50 - 145
Bromomethane	50.0000	0.0000	54.7865	110		30 - 145
Chloroethane	50.0000	0.0000	49.6105	99		60 - 135
Trichlorofluoromethane	50.0000	0.0000	54.2861	109		60 - 145
1,1-Dichloroethene	50.0000	0.0000	48.2645	97		70 - 130
Acetone	50.0000	0.0000	66.3741	133		40 - 140
Carbon disulfide	50.0000	0.0000	46.4396	93		35 - 160
Methylene chloride	50.0000	0.0000	48.5058	97		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	48.3457	97		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	54.2135	108		65 - 125
1,1-Dichloroethane	50.0000	0.0000	48.1906	96		70 - 135
2-Butanone	50.0000	0.0000	32.0648	64		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	48.1748	96		70 - 125
Bromochloromethane	50.0000	0.0000	50.3978	101		65 - 130
Chloroform	50.0000	0.0000	52.4167	105		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	51.9505	104		65 - 130
Carbon tetrachloride	50.0000	0.0000	53.1220	106		65 - 140
1,2-Dichloroethane	50.0000	0.0000	55.6228	111		70 - 130
Benzene	50.0000	0.0000	48.4824	97		80 - 120
Trichloroethene	50.0000	0.0000	48.0270	96		70 - 125
1,2-Dichloropropane	50.0000	0.0000	50.4714	101		75 - 125
Bromodichloromethane	50.0000	0.0000	54.2312	108		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	54.9873	110		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	59.5989	119		60 - 135
Toluene	50.0000	0.0000	48.3701	97		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	58.4424	117		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	51.0278	102		75 - 125
Tetrachloroethene	50.0000	0.0000	45.4637	91		45 - 150
2-Hexanone	50.0000	0.0000	55.5881	111		55 - 130
Dibromochloromethane	50.0000	0.0000	50.9405	102		60 - 135
1,2-Dibromoethane	50.0000	0.0000	50.1246	100		80 - 120
Chlorobenzene	50.0000	0.0000	45.1940	90		80 - 120
Ethylbenzene	50.0000	0.0000	47.8390	96		75 - 125
Xylene (Total)	150.0000	0.0000	144.5258	96		81 - 121
Styrene	50.0000	0.0000	46.8288	94		65 - 135
Bromoform	50.0000	0.0000	54.9464	110		70 - 130
Isopropylbenzene	50.0000	0.0000	49.1488	98		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	46.4614	93		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	43.3443	87		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	41.5669	83		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	43.3984	87		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	50.5717	101		50 - 130

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79832

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79832 LCS Lot No.:

Date Extracted: 11/04/2014 Date Analyzed (1): 11/04/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	45.2944	91		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	46.8662	94		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	51.5909	103		70 - 130
Cyclohexane	50.0000	0.0000	49.7227	99		70 - 130
Methyl acetate	50.0000	0.0000	54.7163	109		70 - 130
Methylcyclohexane	50.0000	0.0000	53.0755	106		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79832

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79832 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	49.3063	99		2		40	30 - 155
Chloromethane	50.0000	52.7415	105		4		40	40 - 125
Vinyl chloride	50.0000	54.8415	110		8		40	50 - 145
Bromomethane	50.0000	59.1862	118		7		40	30 - 145
Chloroethane	50.0000	54.5875	109		10		40	60 - 135
Trichlorofluoromethane	50.0000	58.7398	117		7		40	60 - 145
1,1-Dichloroethene	50.0000	53.1635	106		9		40	70 - 130
Acetone	50.0000	67.7327	135		1		40	40 - 140
Carbon disulfide	50.0000	48.9672	98		5		40	35 - 160
Methylene chloride	50.0000	52.0199	104		7		40	55 - 140
trans-1,2-Dichloroethene	50.0000	54.1305	108		11		40	60 - 140
Methyl tert-butyl ether	50.0000	58.4285	117		8		40	65 - 125
1,1-Dichloroethane	50.0000	54.2516	109		13		40	70 - 135
2-Butanone	50.0000	26.4632	53		19		40	30 - 150
cis-1,2-Dichloroethene	50.0000	54.3829	109		13		40	70 - 125
Bromochloromethane	50.0000	56.4741	113		11		40	65 - 130
Chloroform	50.0000	56.4979	113		7		40	65 - 135
1,1,1-Trichloroethane	50.0000	58.1253	116		11		40	65 - 130
Carbon tetrachloride	50.0000	59.8775	120		12		40	65 - 140
1,2-Dichloroethane	50.0000	59.6380	119		7		40	70 - 130
Benzene	50.0000	54.3082	109		12		40	80 - 120
Trichloroethene	50.0000	53.0535	106		10		40	70 - 125
1,2-Dichloropropane	50.0000	54.5050	109		8		40	75 - 125
Bromodichloromethane	50.0000	58.4382	117		8		40	75 - 120
cis-1,3-Dichloropropene	50.0000	59.9472	120		9		40	70 - 130
4-Methyl-2-pentanone	50.0000	65.8658	132		10		40	60 - 135
Toluene	50.0000	55.2686	111		13		40	75 - 120
trans-1,3-Dichloropropene	50.0000	61.7866	124		6		40	55 - 140
1,1,2-Trichloroethane	50.0000	56.1200	112		9		40	75 - 125
Tetrachloroethene	50.0000	46.9517	94		3		40	45 - 150
2-Hexanone	50.0000	62.0561	124		11		40	55 - 130
Dibromochloromethane	50.0000	53.4023	107		5		40	60 - 135
1,2-Dibromoethane	50.0000	51.3659	103		3		40	80 - 120
Chlorobenzene	50.0000	47.7165	95		5		40	80 - 120
Ethylbenzene	50.0000	51.1279	102		6		40	75 - 125
Xylene (Total)	150.0000	149.6432	100		4		40	81 - 121
Styrene	50.0000	49.0099	98		4		40	65 - 135
Bromoform	50.0000	57.2237	114		4		40	70 - 130
Isopropylbenzene	50.0000	50.8753	102		4		40	75 - 125
1,1,2,2-Tetrachloroethane	50.0000	49.5608	99		6		40	65 - 130
1,3-Dichlorobenzene	50.0000	46.0852	92		6		40	75 - 125
1,4-Dichlorobenzene	50.0000	44.3401	89		7		40	75 - 125
1,2-Dichlorobenzene	50.0000	46.2768	93		7		40	70 - 120
1,2-Dibromo-3-chloropropan	50.0000	56.2762	113		11		40	50 - 130
1,2,4-Trichlorobenzene	50.0000	47.6096	95		4		40	65 - 135
1,2,3-Trichlorobenzene	50.0000	46.5883	93		1		40	55 - 140

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79832

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79832 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trif	50.0000	54.6055	109		6		40	70 - 130
Cyclohexane	50.0000	54.4559	109		10		40	70 - 130
Methyl acetate	50.0000	59.2668	119		9		40	70 - 130
Methylcyclohexane	50.0000	53.6804	107		1		40	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10A

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D7910.D BFB Injection Date: 11/03/2014

Instrument ID: V10 BFB Injection Time: 8:26

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	37.4
75	30.0 - 80.0% of mass 95	65.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.6 (0.8)1
174	50.0 -120% of mass 95	77.8
175	5.0 - 9.0% of mass 174	5.7 (7.3)1
176	95.0 - 101% of mass 174	74.0 (95.1)1
177	5.0 - 9.0% of mass 176	4.8 (6.5)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010A	VSTD05010A	V8D7912.D	11/03/2014	9:27
02	LCS-79801	LCS-79801	V8D7913.D	11/03/2014	10:11
03	LCSD-79801	LCSD-79801	V8D7914.D	11/03/2014	10:41
04	MB-79801	MB-79801	V8D7915.D	11/03/2014	11:12
05	TB11-102914	N2027-07A	V8D7918.D	11/03/2014	13:12
06	TB10-102714	N2027-01A	V8D7920.D	11/03/2014	14:14
07	MW01-13SU-NWG-102714	N2027-02B	V8D7921.D	11/03/2014	14:45
08	MW03-16I-NWG-102814	N2027-04B	V8D7922.D	11/03/2014	15:16
09	MW02-06SA-NWG-102914	N2027-08B	V8D7923.D	11/03/2014	15:47
10	MW03-01SA-NWG-102914	N2027-10B	V8D7924.D	11/03/2014	16:18
11	FD04-102914	N2027-12B	V8D7925.D	11/03/2014	16:49

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/03/2014 Time: 9:27

Lab File ID: V8D7912.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VSTD05010A Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.717	0.789	0.100	10.1	20.0
Chloromethane	0.865	0.902	0.100	4.2	20.0
Vinyl chloride	0.645	0.726	0.100	12.6	20.0
Bromomethane	0.256	0.331	0.100	29.4	20.0
Chloroethane	0.368	0.405	0.100	10.0	20.0
Trichlorofluoromethane	1.202	1.457	0.100	21.2	20.0
1,1-Dichloroethene	0.410	0.405	0.100	-1.1	20.0
Acetone	0.043	0.050	0.100	15.6	20.0
Carbon disulfide	1.282	1.283	0.100	0.1	20.0
Methylene chloride	0.445	0.436	0.100	-2.1	20.0
trans-1,2-Dichloroethene	0.435	0.442	0.100	1.5	20.0
Methyl tert-butyl ether	1.599	1.721	0.100	7.7	20.0
1,1-Dichloroethane	1.111	1.114	0.200	0.2	20.0
2-Butanone	0.044	0.031	0.100	-28.3	20.0
cis-1,2-Dichloroethene	0.480	0.481	0.100	0.3	20.0
Bromochloromethane	0.234	0.246	0.100	5.2	20.0
Chloroform	1.148	1.233	0.200	7.5	20.0
1,1,1-Trichloroethane	1.170	1.304	0.100	11.4	20.0
Carbon tetrachloride	1.009	1.183	0.100	17.2	20.0
1,2-Dichloroethane	1.325	1.513	0.100	14.2	20.0
Benzene	1.677	1.666	0.500	-0.6	20.0
Trichloroethene	0.469	0.470	0.200	0.1	20.0
1,2-Dichloropropane	0.525	0.515	0.100	-1.9	20.0
Bromodichloromethane	0.891	0.989	0.200	11.0	20.0
cis-1,3-Dichloropropene	0.771	0.849	0.200	10.1	20.0
4-Methyl-2-pentanone	0.654	0.749	0.100	14.5	20.0
Toluene	1.837	1.884	0.400	2.5	20.0
trans-1,3-Dichloropropene	0.782	0.926	0.100	18.4	20.0
1,1,2-Trichloroethane	0.423	0.424	0.100	0.4	20.0
Tetrachloroethene	0.374	0.365	0.200	-2.4	20.0
2-Hexanone	0.400	0.431	0.100	7.7	20.0
Dibromochloromethane	0.509	0.559	0.100	9.8	20.0
1,2-Dibromoethane	0.410	0.412	0.100	0.4	20.0
Chlorobenzene	1.077	1.059	0.500	-1.7	20.0
Ethylbenzene	0.537	0.549	0.100	2.2	20.0
Xylene (Total)	0.664	0.679	0.100	2.2	20.0
Styrene	1.068	1.115	0.300	4.4	20.0
Bromoform	0.307	0.351	0.100	14.2	20.0
Isopropylbenzene	1.831	1.971	0.100	7.6	20.0
1,1,2,2-Tetrachloroethane	0.764	0.732	0.300	-4.2	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/03/2014 Time: 9:27

Lab File ID: V8D7912.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VSTD05010A Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.417	1.377	0.600	-2.8	20.0
1,4-Dichlorobenzene	1.535	1.448	0.500	-5.6	20.0
1,2-Dichlorobenzene	1.380	1.401	0.400	1.6	20.0
1,2-Dibromo-3-chloropropane	0.185	0.209	0.050	12.8	20.0
1,2,4-Trichlorobenzene	0.870	0.901	0.200	3.5	20.0
1,2,3-Trichlorobenzene	0.806	0.844	0.100	4.7	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.531	0.584	0.100	10.0	20.0
Cyclohexane	0.997	1.047	0.100	5.0	20.0
Methyl acetate	0.739	0.743	0.100	0.5	20.0
Methylcyclohexane	0.665	0.739	0.100	11.1	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/03/2014 Time: 9:27

Lab File ID: V8D7912.D Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####) VSTD05010A Init. Calib. Time(s): 8:14 11:19

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.381	0.405	0.100	6.3	20.0
1,2-Dichloroethane-d4	0.063	0.061	0.100	-2.9	20.0
Toluene-d8	1.107	1.070	0.100	-3.4	20.0
Bromofluorobenzene	0.662	0.700	0.100	5.7	20.0

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79801

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79801 LCS Lot No.:

Date Extracted: 11/03/2014 Date Analyzed (1): 11/03/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	54.4604	109		30 - 155
Chloromethane	50.0000	0.0000	53.5142	107		40 - 125
Vinyl chloride	50.0000	0.0000	54.8044	110		50 - 145
Bromomethane	50.0000	0.0000	63.3721	127		30 - 145
Chloroethane	50.0000	0.0000	53.5955	107		60 - 135
Trichlorofluoromethane	50.0000	0.0000	59.9312	120		60 - 145
1,1-Dichloroethene	50.0000	0.0000	50.3814	101		70 - 130
Acetone	50.0000	0.0000	67.0108	134		40 - 140
Carbon disulfide	50.0000	0.0000	50.6498	101		35 - 160
Methylene chloride	50.0000	0.0000	49.9755	100		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	51.9041	104		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	53.9901	108		65 - 125
1,1-Dichloroethane	50.0000	0.0000	51.0779	102		70 - 135
2-Butanone	50.0000	0.0000	60.6962	121		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	49.5013	99		70 - 125
Bromochloromethane	50.0000	0.0000	50.9921	102		65 - 130
Chloroform	50.0000	0.0000	54.1596	108		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	55.9684	112		65 - 130
Carbon tetrachloride	50.0000	0.0000	57.5493	115		65 - 140
1,2-Dichloroethane	50.0000	0.0000	55.3426	111		70 - 130
Benzene	50.0000	0.0000	50.3225	101		80 - 120
Trichloroethene	50.0000	0.0000	51.2230	102		70 - 125
1,2-Dichloropropane	50.0000	0.0000	50.8727	102		75 - 125
Bromodichloromethane	50.0000	0.0000	56.2001	112		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	56.5279	113		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	54.8656	110		60 - 135
Toluene	50.0000	0.0000	51.5423	103		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	59.7704	120		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	50.7597	102		75 - 125
Tetrachloroethene	50.0000	0.0000	49.0231	98		45 - 150
2-Hexanone	50.0000	0.0000	56.0164	112		55 - 130
Dibromochloromethane	50.0000	0.0000	53.1007	106		60 - 135
1,2-Dibromoethane	50.0000	0.0000	50.3870	101		80 - 120
Chlorobenzene	50.0000	0.0000	48.4811	97		80 - 120
Ethylbenzene	50.0000	0.0000	52.2110	104		75 - 125
Xylene (Total)	150.0000	0.0000	154.0836	103		81 - 121
Styrene	50.0000	0.0000	50.6848	101		65 - 135
Bromoform	50.0000	0.0000	56.7695	114		70 - 130
Isopropylbenzene	50.0000	0.0000	53.3795	107		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	47.7946	96		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	48.6739	97		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	47.1035	94		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	48.2929	97		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	52.3548	105		50 - 130

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79801

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79801 LCS Lot No.:

Date Extracted: 11/03/2014 Date Analyzed (1): 11/03/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	50.5526	101		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	50.8069	102		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	54.4778	109		70 - 130
Cyclohexane	50.0000	0.0000	53.0370	106		70 - 130
Methyl acetate	50.0000	0.0000	51.3964	103		70 - 130
Methylcyclohexane	50.0000	0.0000	56.5636	113		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79801

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79801 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	54.9875	110		1		40	30 - 155
Chloromethane	50.0000	53.7673	108		1		40	40 - 125
Vinyl chloride	50.0000	55.6255	111		1		40	50 - 145
Bromomethane	50.0000	62.3184	125		2		40	30 - 145
Chloroethane	50.0000	54.3539	109		2		40	60 - 135
Trichlorofluoromethane	50.0000	59.6678	119		1		40	60 - 145
1,1-Dichloroethene	50.0000	51.0917	102		1		40	70 - 130
Acetone	50.0000	60.7491	121		10		40	40 - 140
Carbon disulfide	50.0000	49.0607	98		3		40	35 - 160
Methylene chloride	50.0000	51.0183	102		2		40	55 - 140
trans-1,2-Dichloroethene	50.0000	51.8106	104		0		40	60 - 140
Methyl tert-butyl ether	50.0000	55.4212	111		3		40	65 - 125
1,1-Dichloroethane	50.0000	52.0733	104		2		40	70 - 135
2-Butanone	50.0000	50.5016	101		18		40	30 - 150
cis-1,2-Dichloroethene	50.0000	51.2904	103		4		40	70 - 125
Bromochloromethane	50.0000	52.5800	105		3		40	65 - 130
Chloroform	50.0000	54.8521	110		2		40	65 - 135
1,1,1-Trichloroethane	50.0000	56.0486	112		0		40	65 - 130
Carbon tetrachloride	50.0000	57.9228	116		1		40	65 - 140
1,2-Dichloroethane	50.0000	57.7437	115		4		40	70 - 130
Benzene	50.0000	51.0296	102		1		40	80 - 120
Trichloroethene	50.0000	52.2631	105		3		40	70 - 125
1,2-Dichloropropane	50.0000	52.1637	104		2		40	75 - 125
Bromodichloromethane	50.0000	55.9010	112		0		40	75 - 120
cis-1,3-Dichloropropene	50.0000	56.8767	114		1		40	70 - 130
4-Methyl-2-pentanone	50.0000	57.0275	114		4		40	60 - 135
Toluene	50.0000	51.9014	104		1		40	75 - 120
trans-1,3-Dichloropropene	50.0000	61.5122	123		2		40	55 - 140
1,1,2-Trichloroethane	50.0000	52.1707	104		2		40	75 - 125
Tetrachloroethene	50.0000	47.9895	96		2		40	45 - 150
2-Hexanone	50.0000	54.1567	108		4		40	55 - 130
Dibromochloromethane	50.0000	53.1696	106		0		40	60 - 135
1,2-Dibromoethane	50.0000	50.6264	101		0		40	80 - 120
Chlorobenzene	50.0000	48.8961	98		1		40	80 - 120
Ethylbenzene	50.0000	52.6433	105		1		40	75 - 125
Xylene (Total)	150.0000	152.7080	102		1		40	81 - 121
Styrene	50.0000	50.8199	102		1		40	65 - 135
Bromoform	50.0000	55.5604	111		3		40	70 - 130
Isopropylbenzene	50.0000	52.0497	104		3		40	75 - 125
1,1,2,2-Tetrachloroethane	50.0000	46.7269	93		3		40	65 - 130
1,3-Dichlorobenzene	50.0000	47.2819	95		2		40	75 - 125
1,4-Dichlorobenzene	50.0000	45.7778	92		2		40	75 - 125
1,2-Dichlorobenzene	50.0000	47.0083	94		3		40	70 - 120
1,2-Dibromo-3-chloropropan	50.0000	53.2000	106		1		40	50 - 130
1,2,4-Trichlorobenzene	50.0000	47.4542	95		6		40	65 - 135
1,2,3-Trichlorobenzene	50.0000	47.3215	95		7		40	55 - 140

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-79801

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79801 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC #	%RPD #	QC LIMITS	
					RPD	REC.

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 46 outside limits

Spike Recovery: 0 out of 46 outside limits

COMMENTS:

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79801

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D7915.D Lab Sample ID: MB-79801

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/03/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 11:12

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79801	LCS-79801	V8D7913.D	10:11
02	LCSD-79801	LCSD-79801	V8D7914.D	10:41
03	TB11-102914	N2027-07A	V8D7918.D	13:12
04	TB10-102714	N2027-01A	V8D7920.D	14:14
05	MW01-13SU-NWG-102714	N2027-02B	V8D7921.D	14:45
06	MW03-16I-NWG-102814	N2027-04B	V8D7922.D	15:16
07	MW02-06SA-NWG-102914	N2027-08B	V8D7923.D	15:47
08	MW03-01SA-NWG-102914	N2027-10B	V8D7924.D	16:18
09	FD04-102914	N2027-12B	V8D7925.D	16:49

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79801

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79801

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7915.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79801

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79801

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7915.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10D

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D8011.D BFB Injection Date: 11/07/2014

Instrument ID: V10 BFB Injection Time: 8:58

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	36.2
75	30.0 - 80.0% of mass 95	59.5
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.6 (0.7)1
174	50.0 -120% of mass 95	80.3
175	5.0 - 9.0% of mass 174	5.5 (6.8)1
176	95.0 - 101% of mass 174	78.3 (97.4)1
177	5.0 - 9.0% of mass 176	5.0 (6.4)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010D	VSTD05010D	V8D8012.D	11/07/2014	9:42
02	VSTD20010D	VSTD20010D	V8D8013.D	11/07/2014	10:13
03	VSTD10010D	VSTD10010D	V8D8014.D	11/07/2014	10:59
04	VSTD02010D	VSTD02010D	V8D8015.D	11/07/2014	11:31
05	VSTD00510D	VSTD00510D	V8D8016.D	11/07/2014	12:02
06	VSTD00110D	VSTD00110D	V8D8017.D	11/07/2014	12:33
07	VICV05010D	VICV05010D	V8D8018.D	11/07/2014	13:20

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date(s): 11/07/2014 11/07/2014

Heated Purge: (Y/N) N Calibration Times: 9:42 12:33

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D8016.D RRF020 = V8D8015.D RRF050 = V8D8012.D RRF100 = V8D8014.D RRF200 = V8D8013.D

RRF001 = V8D8017.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
Dichlorodifluoromethane	0.290	0.293	0.269	0.281	0.295	0.331					0.293	7.1
Chloromethane	0.502	0.544	0.444	0.483	0.477	0.578					0.505	9.6
Vinyl chloride	0.367	0.397	0.350	0.376	0.380	0.428					0.383	7.0
Bromomethane	0.198	0.212	0.187	0.190	0.198	0.318					0.217	23.1
Chloroethane	0.219	0.248	0.209	0.221	0.222	0.306					0.238	15.1
Trichlorofluoromethane	0.687	0.760	0.716	0.715	0.763	0.815					0.743	6.2
1,1-Dichloroethene	0.267	0.287	0.246	0.263	0.257	0.346					0.278	12.9
Acetone	0.034	0.043	0.035	0.042	0.032						0.037	13.1
Carbon disulfide	0.812	0.851	0.719	0.815	0.758	1.070					0.837	14.7
Methylene chloride	0.319	0.332	0.264	0.284	0.278	0.375					0.308	13.4
trans-1,2-Dichloroethene	0.284	0.315	0.266	0.290	0.278	0.342					0.296	9.4
Methyl tert-butyl ether	1.106	1.263	1.034	1.147	1.159	1.085					1.132	6.9
1,1-Dichloroethane	0.736	0.808	0.661	0.726	0.727	0.773					0.739	6.7
2-Butanone	0.024	0.040	0.034	0.040	0.038						0.035	19.1
cis-1,2-Dichloroethene	0.322	0.371	0.294	0.315	0.315	0.335					0.326	8.0
Bromochloromethane	0.166	0.178	0.152	0.147	0.140	0.172					0.159	9.5
Chloroform	0.772	0.846	0.725	0.755	0.774	0.807					0.780	5.4
1,1,1-Trichloroethane	0.730	0.815	0.729	0.779	0.805	0.769					0.771	4.7
Carbon tetrachloride	0.642	0.701	0.646	0.685	0.727	0.705					0.684	5.0
1,2-Dichloroethane	0.892	0.943	0.867	0.876	0.927	0.713					0.870	9.5
Benzene	1.100	1.263	1.018	1.109	1.109	1.286					1.147	9.1
Trichloroethene	0.299	0.339	0.287	0.311	0.308	0.345					0.315	7.2
1,2-Dichloropropane	0.345	0.393	0.321	0.351	0.353	0.344					0.351	6.7
Bromodichloromethane	0.579	0.665	0.586	0.617	0.647	0.520					0.602	8.7
cis-1,3-Dichloropropene	0.486	0.594	0.537	0.575	0.601	0.516					0.552	8.4
4-Methyl-2-pentanone	0.442	0.591	0.480	0.571	0.576						0.532	12.6
Toluene	1.232	1.361	1.140	1.268	1.268	1.251					1.253	5.7

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

SW846

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date(s): 11/07/2014 11/07/2014

Heated Purge: (Y/N) N Calibration Times: 9:42 12:33

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D8016.D RRF020 = V8D8015.D RRF050 = V8D8012.D RRF100 = V8D8014.D RRF200 = V8D8013.D
RRF001 = V8D8017.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
trans-1,3-Dichloropropene	0.457	0.610	0.565	0.614	0.652	0.433					0.555	16.2
1,1,2-Trichloroethane	0.286	0.326	0.264	0.285	0.292	0.272					0.288	7.5
Tetrachloroethene	0.355	0.397	0.325	0.365	0.341	0.479					0.377	14.7
2-Hexanone	0.334	0.539	0.427	0.521	0.508						0.466	18.3
Dibromochloromethane	0.470	0.548	0.505	0.534	0.551	0.394					0.500	12.1
1,2-Dibromoethane	0.387	0.466	0.390	0.415	0.414	0.368					0.407	8.4
Chlorobenzene	1.059	1.204	0.974	1.044	1.026	1.056					1.061	7.2
Ethylbenzene	0.501	0.591	0.496	0.557	0.529	0.520					0.532	6.7
Xylene (Total)	0.619	0.731	0.612	0.672	0.654	0.600					0.648	7.6
Styrene	0.873	1.185	1.019	1.137	1.110	0.780					1.017	15.7
Bromoform	0.256	0.341	0.322	0.363	0.372	0.249					0.317	16.7
Isopropylbenzene	1.654	1.952	1.691	1.923	1.861	1.608					1.782	8.3
1,1,2,2-Tetrachloroethane	0.859	1.021	0.782	0.870	0.814	0.788					0.856	10.4
1,3-Dichlorobenzene	1.468	1.631	1.360	1.495	1.403	1.727					1.514	9.2
1,4-Dichlorobenzene	1.701	1.759	1.446	1.565	1.454	1.873					1.633	10.6
1,2-Dichlorobenzene	1.471	1.641	1.346	1.458	1.360	1.380					1.443	7.6
1,2-Dibromo-3-chloropropane	0.222	0.235	0.203	0.241	0.230	0.205					0.223	7.0
1,2,4-Trichlorobenzene	0.899	1.044	0.847	1.031	0.936	0.904					0.944	8.3
1,2,3-Trichlorobenzene	0.918	0.982	0.805	0.965	0.855	0.962					0.914	7.7
1,1,2-Trichloro-1,2,2-trifluoroe	0.326	0.355	0.313	0.350	0.341	0.411					0.349	9.7
Cyclohexane	0.620	0.710	0.599	0.702	0.687	0.672					0.665	6.8
Methyl acetate	0.547	0.614	0.481	0.541	0.534	0.574					0.549	8.0
Methylcyclohexane	0.431	0.485	0.409	0.492	0.464	0.496					0.463	7.7

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date(s): 11/07/2014 11/07/2014

Heated Purge: (Y/N) N Calibration Times: 9:42 12:33

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D8016.D RRF020 = V8D8015.D RRF050 = V8D8012.D RRF100 = V8D8014.D RRF200 = V8D8013.D

RRF001 = V8D8017.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
Dibromofluoromethane	0.334	0.330	0.347	0.335	0.342						0.338	2.0
1,2-Dichloroethane-d4	0.057	0.058	0.055	0.057	0.057						0.057	1.7
Toluene-d8	1.334	1.336	1.326	1.317	1.315						1.326	0.7
Bromofluorobenzene	0.603	0.624	0.644	0.619	0.633						0.625	2.5

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/07/2014 Time: 13:20

Lab File ID: V8D8018.D Init. Calib. Date(s): 11/07/2014 11/07/2014

EPA Sample No.(VSTD#####) VICV05010D Init. Calib. Time(s): 9:42 12:33

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.293	0.278	0.100	-5.4	20.0
Chloromethane	0.505	0.470	0.100	-6.8	20.0
Vinyl chloride	0.383	0.364	0.100	-5.0	20.0
Bromomethane	0.217	0.182	0.100	DK -16.2	20.0
Chloroethane	0.238	0.233	0.100	-2.0	20.0
Trichlorofluoromethane	0.743	0.741	0.100	-0.3	20.0
1,1-Dichloroethene	0.278	0.265	0.100	-4.7	20.0
Acetone	0.037	0.038	0.100	1.4	20.0
Carbon disulfide	0.837	0.844	0.100	0.8	20.0
Methylene chloride	0.308	0.294	0.100	-4.7	20.0
trans-1,2-Dichloroethene	0.296	0.306	0.100	3.6	20.0
Methyl tert-butyl ether	1.132	1.099	0.100	-2.9	20.0
1,1-Dichloroethane	0.739	0.740	0.200	0.2	20.0
2-Butanone	0.035	0.036	0.100	1.9	20.0
cis-1,2-Dichloroethene	0.326	0.329	0.100	1.0	20.0
Bromochloromethane	0.159	0.161	0.100	1.1	20.0
Chloroform	0.780	0.791	0.200	1.4	20.0
1,1,1-Trichloroethane	0.771	0.812	0.100	5.3	20.0
Carbon tetrachloride	0.684	0.707	0.100	3.3	20.0
1,2-Dichloroethane	0.870	0.886	0.100	1.9	20.0
Benzene	1.147	1.137	0.500	-0.9	20.0
Trichloroethene	0.315	0.321	0.200	1.8	20.0
1,2-Dichloropropane	0.351	0.348	0.100	-0.9	20.0
Bromodichloromethane	0.602	0.621	0.200	3.2	20.0
cis-1,3-Dichloropropene	0.552	0.561	0.200	1.7	20.0
4-Methyl-2-pentanone	0.532	0.503	0.100	-5.4	20.0
Toluene	1.253	1.289	0.400	2.9	20.0
trans-1,3-Dichloropropene	0.555	0.599	0.100	7.9	20.0
1,1,2-Trichloroethane	0.288	0.283	0.100	-1.7	20.0
Tetrachloroethene	0.377	0.381	0.200	1.1	20.0
2-Hexanone	0.466	0.470	0.100	0.9	20.0
Dibromochloromethane	0.500	0.530	0.100	6.0	20.0
1,2-Dibromoethane	0.407	0.420	0.100	3.2	20.0
Chlorobenzene	1.061	1.097	0.500	3.4	20.0
Ethylbenzene	0.532	0.598	0.100	12.2	20.0
Xylene (Total)	0.648	0.726	0.100	12.0	20.0
Styrene	1.017	1.167	0.300	14.7	20.0
Bromoform	0.317	0.335	0.100	5.6	20.0
Isopropylbenzene	1.782	2.073	0.100	16.3	20.0
1,1,2,2-Tetrachloroethane	0.856	0.825	0.300	-3.6	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/07/2014 Time: 13:20

Lab File ID: V8D8018.D Init. Calib. Date(s): 11/07/2014 11/07/2014

EPA Sample No.(VSTD#####) VICV05010D Init. Calib. Time(s): 9:42 12:33

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.514	1.622	0.600	7.1	20.0
1,4-Dichlorobenzene	1.633	1.692	0.500	3.6	20.0
1,2-Dichlorobenzene	1.443	1.593	0.400	10.4	20.0
1,2-Dibromo-3-chloropropane	0.223	0.220	0.050	-1.4	20.0
1,2,4-Trichlorobenzene	0.944	1.113	0.200	18.0	20.0
1,2,3-Trichlorobenzene	0.914	1.040	0.100	13.7	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.349	0.350	0.100	0.1	20.0
Cyclohexane	0.665	0.696	0.100	4.7	20.0
Methyl acetate	0.549	0.504	0.100	-8.1	20.0
Methylcyclohexane	0.463	0.496	0.100	7.0	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/07/2014 Time: 13:20

Lab File ID: V8D8018.D Init. Calib. Date(s): 11/07/2014 11/07/2014

EPA Sample No.(VSTD#####) VICV05010D Init. Calib. Time(s): 9:42 12:33

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.338	0.337	0.100	-0.1	20.0
1,2-Dichloroethane-d4	0.057	0.059	0.100	3.6	20.0
Toluene-d8	1.326	1.322	0.100	-0.3	20.0
Bromofluorobenzene	0.625	0.633	0.100	1.3	20.0

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

EPA SAMPLE NO.
BFB10E

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D8019.D BFB Injection Date: 11/07/2014

Instrument ID: V10 BFB Injection Time: 13:42

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	36.6
75	30.0 - 80.0% of mass 95	62.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.2 (0.3)1
174	50.0 -120% of mass 95	73.3
175	5.0 - 9.0% of mass 174	5.5 (7.5)1
176	95.0 - 101% of mass 174	71.6 (97.8)1
177	5.0 - 9.0% of mass 176	4.7 (6.6)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010E	VSTD05010E	V8D8020.D	11/07/2014	14:02
02	LCS-79927	LCS-79927	V8D8021.D	11/07/2014	14:33
03	MB-79927	MB-79927	V8D8023.D	11/07/2014	15:35
04	TB12-103014	N2027-14A	V8D8024.D	11/07/2014	16:06
05	MW03-03SA-NWG-103014	N2027-15A	V8D8026.D	11/07/2014	17:08
06	FB03-103014	N2027-17A	V8D8027.D	11/07/2014	17:39
07	MW03-03SA-NWG-103014MS	N2027-15AMS	V8D8038.D	11/07/2014	23:18
08	MW03-03SA-NWG-103014MSD	N2027-15AMSD	V8D8039.D	11/07/2014	23:49

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/07/2014 Time: 14:02

Lab File ID: V8D8020.D Init. Calib. Date(s): 11/07/2014 11/07/2014

EPA Sample No.(VSTD#####) VSTD05010E Init. Calib. Time(s): 9:42 12:33

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.293	0.284	0.100	-3.2	20.0
Chloromethane	0.505	0.483	0.100	-4.3	20.0
Vinyl chloride	0.383	0.369	0.100	-3.7	20.0
Bromomethane	0.217	0.190	0.100	-12.7	20.0
Chloroethane	0.238	0.226	0.100	-4.8	20.0
Trichlorofluoromethane	0.743	0.740	0.100	-0.4	20.0
1,1-Dichloroethene	0.278	0.264	0.100	-4.8	20.0
Acetone	0.037	0.037	0.100	-1.1	20.0
Carbon disulfide	0.837	0.817	0.100	-2.5	20.0
Methylene chloride	0.308	0.300	0.100	-2.7	20.0
trans-1,2-Dichloroethene	0.296	0.295	0.100	-0.2	20.0
Methyl tert-butyl ether	1.132	1.113	0.100	-1.7	20.0
1,1-Dichloroethane	0.739	0.738	0.200	-0.1	20.0
2-Butanone	0.035	0.038	0.100	6.7	20.0
cis-1,2-Dichloroethene	0.326	0.329	0.100	1.2	20.0
Bromochloromethane	0.159	0.166	0.100	4.5	20.0
Chloroform	0.780	0.797	0.200	2.2	20.0
1,1,1-Trichloroethane	0.771	0.781	0.100	1.2	20.0
Carbon tetrachloride	0.684	0.669	0.100	-2.2	20.0
1,2-Dichloroethane	0.870	0.917	0.100	5.4	20.0
Benzene	1.147	1.137	0.500	-0.9	20.0
Trichloroethene	0.315	0.309	0.200	-1.9	20.0
1,2-Dichloropropane	0.351	0.350	0.100	-0.4	20.0
Bromodichloromethane	0.602	0.629	0.200	4.4	20.0
cis-1,3-Dichloropropene	0.552	0.559	0.200	1.4	20.0
4-Methyl-2-pentanone	0.532	0.501	0.100	-5.9	20.0
Toluene	1.253	1.253	0.400	0.0	20.0
trans-1,3-Dichloropropene	0.555	0.595	0.100	7.2	20.0
1,1,2-Trichloroethane	0.288	0.286	0.100	-0.5	20.0
Tetrachloroethene	0.377	0.334	0.200	-11.4	20.0
2-Hexanone	0.466	0.474	0.100	1.8	20.0
Dibromochloromethane	0.500	0.524	0.100	4.7	20.0
1,2-Dibromoethane	0.407	0.413	0.100	1.7	20.0
Chlorobenzene	1.061	1.044	0.500	-1.6	20.0
Ethylbenzene	0.532	0.530	0.100	-0.4	20.0
Xylene (Total)	0.648	0.654	0.100	0.9	20.0
Styrene	1.017	1.088	0.300	6.9	20.0
Bromoform	0.317	0.332	0.100	4.8	20.0
Isopropylbenzene	1.782	1.761	0.100	-1.2	20.0
1,1,2,2-Tetrachloroethane	0.856	0.847	0.300	-1.0	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/07/2014 Time: 14:02

Lab File ID: V8D8020.D Init. Calib. Date(s): 11/07/2014 11/07/2014

EPA Sample No.(VSTD#####) VSTD05010E Init. Calib. Time(s): 9:42 12:33

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	$\overline{RRF}$	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.514	1.444	0.600	-4.6	20.0
1,4-Dichlorobenzene	1.633	1.498	0.500	-8.3	20.0
1,2-Dichlorobenzene	1.443	1.435	0.400	-0.6	20.0
1,2-Dibromo-3-chloropropane	0.223	0.204	0.050	-8.4	20.0
1,2,4-Trichlorobenzene	0.944	0.911	0.200	-3.5	20.0
1,2,3-Trichlorobenzene	0.914	0.853	0.100	-6.7	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.349	0.327	0.100	-6.3	20.0
Cyclohexane	0.665	0.624	0.100	-6.2	20.0
Methyl acetate	0.549	0.504	0.100	-8.1	20.0
Methylcyclohexane	0.463	0.432	0.100	-6.8	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date: 11/07/2014 Time: 14:02

Lab File ID: V8D8020.D Init. Calib. Date(s): 11/07/2014 11/07/2014

EPA Sample No.(VSTD#####) VSTD05010E Init. Calib. Time(s): 9:42 12:33

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.338	0.341	0.100	1.0	20.0
1,2-Dichloroethane-d4	0.057	0.060	0.100	5.3	20.0
Toluene-d8	1.326	1.338	0.100	0.9	20.0
Bromofluorobenzene	0.625	0.628	0.100	0.6	20.0

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79927

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79927 LCS Lot No.:

Date Extracted: 11/07/2014 Date Analyzed (1): 11/07/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	49.9502	100		30 - 155
Chloromethane	50.0000	0.0000	46.9251	94		40 - 125
Vinyl chloride	50.0000	0.0000	49.2651	99		50 - 145
Bromomethane	50.0000	0.0000	46.3443	93		30 - 145
Chloroethane	50.0000	0.0000	51.4495	103		60 - 135
Trichlorofluoromethane	50.0000	0.0000	50.7334	101		60 - 145
1,1-Dichloroethene	50.0000	0.0000	48.9796	98		70 - 130
Acetone	50.0000	0.0000	45.3476	91		40 - 140
Carbon disulfide	50.0000	0.0000	46.3639	93		35 - 160
Methylene chloride	50.0000	0.0000	48.7816	98		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	49.7628	100		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	48.8048	98		65 - 125
1,1-Dichloroethane	50.0000	0.0000	49.8864	100		70 - 135
2-Butanone	50.0000	0.0000	47.3950	95		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	49.7371	99		70 - 125
Bromochloromethane	50.0000	0.0000	51.6368	103		65 - 130
Chloroform	50.0000	0.0000	49.9551	100		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	50.4067	101		65 - 130
Carbon tetrachloride	50.0000	0.0000	50.2620	101		65 - 140
1,2-Dichloroethane	50.0000	0.0000	51.7271	103		70 - 130
Benzene	50.0000	0.0000	50.2576	101		80 - 120
Trichloroethene	50.0000	0.0000	49.0988	98		70 - 125
1,2-Dichloropropane	50.0000	0.0000	50.9495	102		75 - 125
Bromodichloromethane	50.0000	0.0000	51.8601	104		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	51.9942	104		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	47.1618	94		60 - 135
Toluene	50.0000	0.0000	50.2491	100		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	47.4226	95		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	49.4665	99		75 - 125
Tetrachloroethene	50.0000	0.0000	47.5102	95		45 - 150
2-Hexanone	50.0000	0.0000	46.0888	92		55 - 130
Dibromochloromethane	50.0000	0.0000	52.5838	105		60 - 135
1,2-Dibromoethane	50.0000	0.0000	50.6922	101		80 - 120
Chlorobenzene	50.0000	0.0000	48.7114	97		80 - 120
Ethylbenzene	50.0000	0.0000	52.1151	104		75 - 125
Xylene (Total)	150.0000	0.0000	154.6831	103		81 - 121
Styrene	50.0000	0.0000	51.0912	102		65 - 135
Bromoform	50.0000	0.0000	46.8822	94		70 - 130
Isopropylbenzene	50.0000	0.0000	51.8224	104		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	46.9957	94		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	47.6054	95		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	46.7384	93		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	49.2748	99		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	45.2260	90		50 - 130

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79927

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79927 LCS Lot No.:

Date Extracted: 11/07/2014 Date Analyzed (1): 11/07/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	48.1553	96		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	46.0288	92		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	49.8183	100		70 - 130
Cyclohexane	50.0000	0.0000	50.7715	102		70 - 130
Methyl acetate	50.0000	0.0000	45.4133	91		70 - 130
Methylcyclohexane	50.0000	0.0000	50.3742	101		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79927

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: V8D8023.D Lab Sample ID: MB-79927

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/07/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 15:35

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-79927	LCS-79927	V8D8021.D	14:33
02	TB12-103014	N2027-14A	V8D8024.D	16:06
03	MW03-03SA-NWG-103014	N2027-15A	V8D8026.D	17:08
04	FB03-103014	N2027-17A	V8D8027.D	17:39
05	MW03-03SA-NWG-103014MS	N2027-15AMS	V8D8038.D	23:18
06	MW03-03SA-NWG-103014MSD	N2027-15AMSD	V8D8039.D	23:49

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79927

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79927

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8023.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79927

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79927

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8023.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/07/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix Spike - EPA Sample No.: MW03-03SA-NWG-103014 Level: (TRACE or LOW) LOW

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	44.3716	89		30-155
Chloromethane	50.0000	0.0000	41.8020	84		40-125
Vinyl chloride	50.0000	0.0000	44.7759	90		50-145
Bromomethane	50.0000	0.0000	35.9971	72		30-145
Chloroethane	50.0000	0.0000	48.5626	97		60-135
Trichlorofluoromethane	50.0000	0.0000	53.4480	107		60-145
1,1-Dichloroethene	50.0000	0.0000	42.7098	85		70-130
Acetone	50.0000	0.0000	38.2413	76		40-140
Carbon disulfide	50.0000	0.0000	40.7447	81		35-160
Methylene chloride	50.0000	0.0000	43.8489	88		55-140
trans-1,2-Dichloroethen	50.0000	0.0000	43.4020	87		60-140
Methyl tert-butyl ether	50.0000	0.0000	45.4266	91		65-125
1,1-Dichloroethane	50.0000	0.0000	45.4293	91		70-135
2-Butanone	50.0000	0.0000	36.3642	73		30-150
cis-1,2-Dichloroethene	50.0000	0.0000	45.0749	90		70-125
Bromochloromethane	50.0000	0.0000	47.6660	95		65-130
Chloroform	50.0000	0.0000	48.7705	98		65-135
1,1,1-Trichloroethane	50.0000	0.0000	51.1109	102		65-130
Carbon tetrachloride	50.0000	0.0000	50.1149	100		65-140
1,2-Dichloroethane	50.0000	0.0000	52.5947	105		70-130
Benzene	50.0000	0.0000	44.0720	88		80-120
Trichloroethene	50.0000	0.0000	44.6263	89		70-125
1,2-Dichloropropane	50.0000	0.0000	45.5971	91		75-125
Bromodichloromethane	50.0000	0.0000	50.2120	100		75-120
cis-1,3-Dichloropropene	50.0000	0.0000	45.7046	91		70-130
4-Methyl-2-pentanone	50.0000	0.0000	41.5335	83		60-135
Toluene	50.0000	0.0000	45.5003	91		75-120
trans-1,3-Dichloroprope	50.0000	0.0000	44.6395	89		55-140
1,1,2-Trichloroethane	50.0000	0.0000	45.5102	91		75-125
Tetrachloroethene	50.0000	0.0000	42.1868	84		45-150
2-Hexanone	50.0000	0.0000	38.0888	76		55-130
Dibromochloromethane	50.0000	0.0000	49.8859	100		60-135
1,2-Dibromoethane	50.0000	0.0000	47.0381	94		80-120
Chlorobenzene	50.0000	0.0000	45.0748	90		80-120
Ethylbenzene	50.0000	0.0000	46.4621	93		75-125
Xylene (Total)	150.0000	0.0000	142.2556	95		81-121
Styrene	50.0000	0.0000	47.0497	94		65-135
Bromoform	50.0000	0.0000	44.1636	88		70-130
Isopropylbenzene	50.0000	0.0000	47.9212	96		75-125
1,1,2,2-Tetrachloroetha	50.0000	0.0000	42.0029	84		65-130
1,3-Dichlorobenzene	50.0000	0.0000	43.7147	87		75-125
1,4-Dichlorobenzene	50.0000	0.0000	42.8320	86		75-125
1,2-Dichlorobenzene	50.0000	0.0000	45.9748	92		70-120
1,2-Dibromo-3-chloropro	50.0000	0.0000	43.1716	86		50-130

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix Spike - EPA Sample No.: MW03-03SA-NWG-103014 Level: (TRACE or LOW) LOW

1,2,4-Trichlorobenzene	50.0000	0.0000	42.9709	86		65-135
1,2,3-Trichlorobenzene	50.0000	0.0000	40.3817	81		55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	0.0000	42.9146	86		70-130
Cyclohexane	50.0000	0.0000	43.4048	87		70-130
Methyl acetate	50.0000	0.0000	38.8933	78		70-130
Methylcyclohexane	50.0000	0.0000	40.6348	81		70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	46.1468	92		4		0-40	30-155
Chloromethane	50.0000	42.9397	86		3		0-40	40-125
Vinyl chloride	50.0000	46.5863	93		4		0-40	50-145
Bromomethane	50.0000	37.2968	75		4		0-40	30-145
Chloroethane	50.0000	49.4075	99		2		0-40	60-135
Trichlorofluoromethane	50.0000	54.1912	108		1		0-40	60-145
1,1-Dichloroethene	50.0000	43.0040	86		1		0-40	70-130
Acetone	50.0000	38.0561	76		0		0-40	40-140
Carbon disulfide	50.0000	41.6394	83		2		0-40	35-160
Methylene chloride	50.0000	43.3695	87		1		0-40	55-140
trans-1,2-Dichloroethen	50.0000	44.2079	88		2		0-40	60-140
Methyl tert-butyl ether	50.0000	45.2645	91		0		0-40	65-125
1,1-Dichloroethane	50.0000	46.2296	92		2		0-40	70-135
2-Butanone	50.0000	41.0097	82		12		0-40	30-150
cis-1,2-Dichloroethene	50.0000	45.0389	90		0		0-40	70-125
Bromochloromethane	50.0000	47.3934	95		1		0-40	65-130
Chloroform	50.0000	48.5083	97		1		0-40	65-135
1,1,1-Trichloroethane	50.0000	50.8010	102		1		0-40	65-130
Carbon tetrachloride	50.0000	50.8528	102		1		0-40	65-140
1,2-Dichloroethane	50.0000	53.9678	108		3		0-40	70-130
Benzene	50.0000	45.5600	91		3		0-40	80-120
Trichloroethene	50.0000	45.4169	91		2		0-40	70-125
1,2-Dichloropropane	50.0000	44.9016	90		2		0-40	75-125
Bromodichloromethane	50.0000	50.1724	100		0		0-40	75-120
cis-1,3-Dichloropropene	50.0000	45.7152	91		0		0-40	70-130
4-Methyl-2-pentanone	50.0000	41.5272	83		0		0-40	60-135
Toluene	50.0000	45.4894	91		0		0-40	75-120
trans-1,3-Dichloroprope	50.0000	44.2379	88		1		0-40	55-140
1,1,2-Trichloroethane	50.0000	45.0866	90		1		0-40	75-125
Tetrachloroethene	50.0000	41.9141	84		1		0-40	45-150
2-Hexanone	50.0000	37.9868	76		0		0-40	55-130
Dibromochloromethane	50.0000	49.0473	98		2		0-40	60-135
1,2-Dibromoethane	50.0000	45.6080	91		3		0-40	80-120
Chlorobenzene	50.0000	44.6735	89		1		0-40	80-120
Ethylbenzene	50.0000	46.5002	93		0		0-40	75-125
Xylene (Total)	150.0000	140.9584	94		1		0-40	81-121
Styrene	50.0000	47.3844	95		1		0-40	65-135

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix Spike - EPA Sample No.: MW03-03SA-NWG-103014 Level: (TRACE or LOW) LOW

Bromoform	50.0000	42.7490	85		3		0-40	70-130
Isopropylbenzene	50.0000	47.9803	96		0		0-40	75-125
1,1,2,2-Tetrachloroetha	50.0000	42.0784	84		0		0-40	65-130
1,3-Dichlorobenzene	50.0000	43.0072	86		2		0-40	75-125
1,4-Dichlorobenzene	50.0000	42.5056	85		1		0-40	75-125
1,2-Dichlorobenzene	50.0000	46.2032	92		0		0-40	70-120
1,2-Dibromo-3-chloropro	50.0000	40.7856	82		6		0-40	50-130
1,2,4-Trichlorobenzene	50.0000	42.4148	85		1		0-40	65-135
1,2,3-Trichlorobenzene	50.0000	40.9855	82		1		0-40	55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	42.9390	86		0		0-40	70-130
Cyclohexane	50.0000	44.0228	88		1		0-40	70-130
Methyl acetate	50.0000	35.6151	71		9		0-40	70-130
Methylcyclohexane	50.0000	40.3746	81		1		0-40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

COMMENTS:

2B - FORM II VOA-2

WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Level: (TRACE or LOW) LOW

	EPA SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
01	LCS-79801	112	103	97	105				0
02	LCSD-79801	108	104	97	105				0
03	MB-79801	109	105	96	98				0
04	TB11-102914	111	100	94	96				0
05	TB10-102714	111	112	95	95				0
06	MW01-13SU-NWG-102714	114	111	96	98				0
07	MW03-16I-NWG-102814	114	106	94	96				0
08	MW02-06SA-NWG-102914	111	113	94	98				0
09	MW03-01SA-NWG-102914	113	104	96	102				0
10	FD04-102914	111	107	94	98				0
11	LCS-79832	109	104	96	106				0
12	LCSD-79832	111	108	94	106				0
13	MB-79832	112	111	94	99				0
14	MW03-16I-NWG-102814DL	111	115	94	96				0
15	LCS-79927	98	105	100	101				0
16	MB-79927	100	110	99	97				0
17	TB12-103014	102	101	100	94				0
18	MW03-03SA-NWG-103014	103	103	101	97				0
19	FB03-103014	106	103	98	95				0
20	MW03-03SA-NWG-103014MS	105	97	98	102				0
21	MW03-03SA-NWG-103014MSD	105	102	100	105				0

		QC LIMITS
VDMC1	(DBFM) Dibromofluoromethane	(85-115)
VDMC2	(DCE) = 1,2-Dichloroethane-d4	(70-120)
VDMC3	(TOL) = Toluene-d8	(85-120)
VDMC4	(BFB) = Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

som14.10.02.1616

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####): VSTD05010A Date Analyzed: 11/03/2014

Lab File ID (Standard): V8D7912.D Time Analyzed: 9:27

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	198754		5.236		233351		8.226		152916		10.728	
	UPPER LIMIT	397508		5.736		466702		8.726		305832		11.228	
	LOWER LIMIT	99377		4.736		116676		7.726		76458		10.228	
	EPA SAMPLE NO.												
01	LCS-79801	203832		5.236		244005		8.226		159860		10.725	
02	LCSD-79801	207379		5.239		248592		8.226		163678		10.725	
03	MB-79801	200805		5.239		235792		8.223		134237		10.728	
04	TB11-102914	183141		5.236		225139		8.223		129747		10.728	
05	TB10-102714	174941		5.239		217638		8.223		120129		10.728	
06	MW01-13SU-NWG-102714	172752		5.239		214536		8.226		120313		10.725	
07	MW03-16I-NWG-102814	172951		5.239		211612		8.226		118133		10.728	
08	MW02-06SA-NWG-102914	169353		5.236		209171		8.226		118350		10.728	
09	MW03-01SA-NWG-102914	171764		5.239		203558		8.226		119188		10.728	
10	FD04-102914	167510		5.239		209212		8.223		117057		10.725	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

som14.10.02.1616

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/31/2014 10/31/2014

EPA Sample No.(VSTD#####): VSTD05010B Date Analyzed: 11/04/2014

Lab File ID (Standard): V8D7944.D Time Analyzed: 10:00

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA #	RT #	IS2 (S2) AREA #	RT #	IS3 (S3) AREA #	RT #
	12 HOUR STD	196988	5.239	239033	8.223	163702	10.728
	UPPER LIMIT	393976	5.739	478066	8.723	327404	11.228
	LOWER LIMIT	98494	4.739	119517	7.723	81851	10.228
	EPA SAMPLE NO.						
01	LCS-79832	199352	5.239	243497	8.226	165395	10.728
02	LCSD-79832	200974	5.239	256221	8.226	169008	10.728
03	MB-79832	199269	5.239	255128	8.223	146329	10.728
04	MW03-16I-NWG-102814DL	192750	5.239	248326	8.226	136246	10.728

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

som14.10.02.1616

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 11/07/2014 11/07/2014

EPA Sample No.(VSTD#####): VSTD05010E Date Analyzed: 11/07/2014

Lab File ID (Standard): V8D8020.D Time Analyzed: 14:02

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	366347		5.239		285517		8.226		160741		10.725	
	UPPER LIMIT	732694		5.739		571034		8.726		321482		11.225	
	LOWER LIMIT	183174		4.739		142759		7.726		80371		10.225	
	EPA SAMPLE NO.												
01	LCS-79927	379685		5.236		296078		8.223		172349		10.725	
02	MB-79927	357566		5.239		278450		8.226		145619		10.728	
03	TB12-103014	344662		5.239		265414		8.223		141461		10.728	
04	MW03-03SA-NWG-103014	318091		5.239		242437		8.226		124983		10.728	
05	FB03-103014	301864		5.239		238854		8.226		120062		10.728	
06	MW03-03SA-NWG-103014MS	289737		5.239		229200		8.223		136708		10.725	
07	MW03-03SA-NWG-103014MSD	292305		5.236		236020		8.223		140670		10.725	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

som14.10.02.1616

Sample Calculation

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW03-16I-NWG-102814

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-04B

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D7922.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/28/2014

% Moisture: not dec. Date Analyzed: 11/03/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	2.4		0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	44		0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	100		0.48	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	350 ✓	E	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	5.6		0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0

Sample Calculation

Data File: \\Avogadro\Organics\V10.I\141103.B\V8D7922.d
Report Date: 18-Nov-2014 11:37

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\Avogadro\Organics\V10.I\141103.B\V8D7922.d
Lab Smp Id: N2027-04B Client Smp ID: MW03-16I-NWG-102814
Inj Date : 03-NOV-2014 15:16
Operator : alm SRC: LIMS Inst ID: V10.i
Smp Info : 5ML,N2027-04B,,79801
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\141103.B\v108260Gadd-6lvl.m
Meth Date : 18-Nov-2014 11:36 amarquis Quant Type: ISTD
Cal Date : 31-OCT-2014 08:45 Cal File: V8D7872.d
Als bottle: 100
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: OLM_VOA.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	4 Vinyl Chloride	62	1.856	1.860	(0.354)	5345	2.39738	2.4
	21 trans-1,2-Dichloroethene	96	3.457	3.454	(0.660)	66024	43.8495	44
	28 cis-1,2-Dichloroethene	96	4.255	4.261	(0.812)	174020	104.915	100
$	36 Dibromofluoromethane	113	4.647	4.644	(0.887)	74241	56.9534	57
$	42 1,2-Dichloroethane-d4	102	4.946	4.946	(0.944)	11325	52.7557	53
*	46 Fluorobenzene	96	5.239	5.236	(1.000)	172951	50.0000	
	47 Trichloroethene	130	5.563	5.567	(1.062)	566601	349.032	350(A)
$	58 Toluene-d8	98	6.721	6.718	(0.817)	221270	47.1454	47
	62 1,1,2-Trichloroethane	97	7.184	7.178	(1.371)	8248	5.63960	5.6(H)
*	68 Chlorobenzene-d5	117	8.226	8.226	(1.000)	211612	50.0000	
$	79 Bromofluorobenzene	95	9.525	9.525	(1.158)	135611	47.8992	48
	80 1,1,2,2-Tetrachloroethane	83	9.669	9.669	(0.901)	117682	65.1823	65
*	92 1,4-Dichlorobenzene-d4	152	10.727	10.727	(1.000)	118133	50.0000	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
H - Operator selected an alternate compound hit.

$$\text{Concentration} = \frac{566601}{172951} \times \frac{50\ \text{ug/L}}{0.469} = 349$$ ✓

N2027

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: V10 Calibration Date(s): 10/31/2014 10/31/2014

Heated Purge: (Y/N) N Calibration Times: 8:14 11:19

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D7873.D RRF020 = V8D7872.D RRF050 = V8D7871.D RRF100 = V8D7877.D RRF200 = V8D7876.D

RRF001 = V8D7875.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
Dichlorodifluoromethane	0.691	0.766	0.725	0.656	0.654	0.811					0.717	8.7
Chloromethane	0.859	0.923	0.833	0.799	0.740	1.037					0.865	12.0
Vinyl chloride	0.617	0.713	0.626	0.649	0.589	0.674					0.645	6.8
Bromomethane	0.238	0.280	0.276	0.269	0.258	0.214					0.256	10.0
Chloroethane	0.353	0.394	0.354	0.356	0.329	0.422					0.368	9.2
Trichlorofluoromethane	1.150	1.253	1.171	1.151	1.160	1.328					1.202	6.1
1,1-Dichloroethene	0.399	0.441	0.401	0.397	0.365	0.454					0.410	7.9
Acetone	0.037	0.053	0.042	0.043	0.040						0.043	13.7
Carbon disulfide	1.173	1.315	1.203	1.242	1.146	1.609					1.282	13.4
Methylene chloride	0.433	0.475	0.424	0.426	0.400	0.513					0.445	9.2
trans-1,2-Dichloroethene	0.409	0.476	0.428	0.432	0.404	0.462					0.435	6.7
Methyl tert-butyl ether	1.486	1.708	1.605	1.601	1.555	1.638					1.599	4.7
1,1-Dichloroethane	1.051	1.213	1.096	1.072	1.023	1.212					1.111	7.4
2-Butanone	0.034	0.045	0.046	0.047	0.046						0.044	12.1
cis-1,2-Dichloroethene	0.472	0.530	0.475	0.477	0.449	0.474					0.480	5.6
Bromochloromethane	0.233	0.256	0.236	0.234	0.204	0.243					0.234	7.3
Chloroform	1.090	1.209	1.122	1.113	1.118	1.234					1.148	5.1
1,1,1-Trichloroethane	1.100	1.240	1.136	1.151	1.154	1.240					1.170	4.9
Carbon tetrachloride	0.903	1.068	0.995	1.013	1.029	1.049					1.009	5.8
1,2-Dichloroethane	1.216	1.386	1.297	1.292	1.330	1.431					1.325	5.7
Benzene	1.552	1.788	1.653	1.678	1.613	1.776					1.677	5.5
Trichloroethene	0.438	0.499	0.440	0.459	0.442	0.538					0.469	8.7
1,2-Dichloropropane	0.466	0.548	0.516	0.523	0.502	0.598					0.525	8.5
Bromodichloromethane	0.751	0.922	0.898	0.899	0.918	0.954					0.891	8.0
cis-1,3-Dichloropropene	0.682	0.841	0.805	0.832	0.849	0.619					0.771	12.6
4-Methyl-2-pentanone	0.515	0.691	0.659	0.699	0.708						0.654	12.2
Toluene	1.708	1.942	1.824	1.857	1.834	1.857					1.837	4.1

som14.10.02.1616 Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only SW846

Sample Calculation

Page 3

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 8270D, SVOA by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8270D

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: S6
Instrument Type: GCMS-Semi

Description: HP7890A
Manufacturer: Agilent
Model: 7890A/5973

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes

are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

· M1 peak tailing or fronting
· M2 peak co-elution
· M3 rising or falling baseline
· M4 retention time shift
· M5 miscellaneous - under this category, the justification is explained
· M6 software did not integrate peak
· M7 partial peak integration

Manual integrations were performed on the following:

LCSD-79838 4-Nitrophenol due to M6

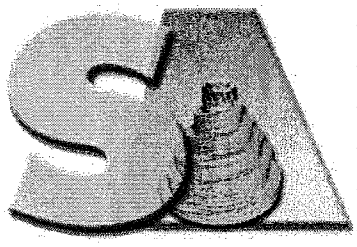
SSTD0056V 2,4-Dinitrophenol due to M6

SSTD0106V 4-Nitrophenol due to M6

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____11/20/2014_____



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U — Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J — This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

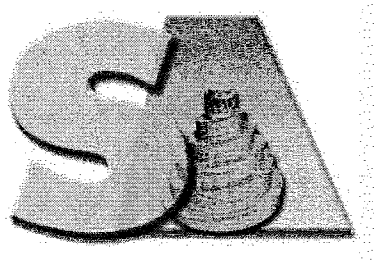
B — This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D — For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E — This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P — This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A — Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



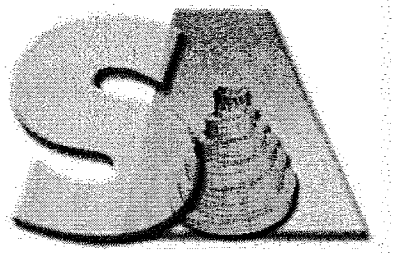
SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



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HANIBAL TECHNOLOGY

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

5B - FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT

PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.

DFTPP6V

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: S6C0057.D DFTPP Injection Date: 11/11/2014

Instrument ID: S6 DFTPP Injection Time: 10:05

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	55.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	58.5
70	Less than 2.0% of mass 69	0.4 (0.7)1
127	10.0 - 80.0% of mass 198	50.6
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.5
275	10.0 - 60.0% of mass 198	26.1
365	Greater than 1.0% of mass 198	3.7
441	Present, but less than mass 443	1.4
442	50.0 - 100% of mass 198	75.2
443	15.0 - 24.0% of mass 442	13.9 (18.5)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0256V	SSTD0256V	S6C0058B.D	11/11/2014	11:54
02	SSTD0806V	SSTD0806V	S6C0059.D	11/11/2014	12:15
03	SSTD0056V	SSTD0056V	S6C0060.D	11/11/2014	12:36
04	SSTD0106V	SSTD0106V	S6C0061.D	11/11/2014	12:56
05	SSTD0406V	SSTD0406V	S6C0062.D	11/11/2014	13:16
06	SSTD0606V	SSTD0606V	S6C0063.D	11/11/2014	13:37
07	SICV0256V	SICV0256V	S6C0064.D	11/11/2014	13:57
08	MB-79838	MB-79838	S6C0065.D	11/11/2014	14:17
09	LCS-79838	LCS-79838	S6C0066.D	11/11/2014	14:38
10	LCSD-79838	LCSD-79838	S6C0067.D	11/11/2014	14:58
11	MW03-16I-NWG-102814	N2027-04C	S6C0080.D	11/11/2014	19:41
12	FD03-102814	N2027-06A	S6C0081.D	11/11/2014	20:01
13	FB03-103014	N2027-17B	S6C0082.D	11/11/2014	20:21

6 - FORM VI SV-2

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date(s): 11/11/2014 11/11/2014

Calibration Times: 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6C0060.D RRF010 = S6C0061.D RRF025 = S6C0058B.D RRF040 = S6C0062.D RRF060 = S6C0063.D
RRF080 = S6C0059.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
Phenol	1.514	1.525	1.750	1.922	1.855	1.894					1.743	10.5
Bis(2-chloroethyl)ether	0.712	0.808	0.858	0.932	0.908	0.965					0.864	10.7
2-Chlorophenol	1.043	1.170	1.266	1.435	1.449	1.434					1.299	13.0
2-Methylphenol	1.142	1.179	1.263	1.389	1.288	1.277					1.256	6.9
2,2´-oxybis(1-Chloropropane)	1.050	1.023	1.156	1.198	1.204	1.244					1.146	7.8
4-Methylphenol	1.196	1.196	1.354	1.435	1.419	1.361					1.327	8.0
N-Nitroso-di-n-propylamine	1.095	1.134	1.301	1.343	1.370	1.292					1.256	9.1
Hexachloroethane	0.539	0.594	0.646	0.681	0.687	0.699					0.641	9.8
Nitrobenzene	0.477	0.468	0.525	0.486	0.497	0.465					0.486	4.6
Isophorone	0.704	0.734	0.851	0.792	0.770	0.720					0.762	7.1
2-Nitrophenol	0.185	0.189	0.223	0.210	0.199	0.205					0.202	7.0
2,4-Dimethylphenol	0.408	0.417	0.492	0.462	0.460	0.482					0.454	7.5
2,4-Dichlorophenol	0.294	0.305	0.336	0.340	0.341	0.356					0.328	7.3
Naphthalene	0.886	0.883	1.063	1.011	1.027	0.989					0.977	7.7
4-Chloroaniline	0.389	0.388	0.447	0.443	0.411	0.418					0.416	6.1
Bis(2-chloroethoxy)methane	0.394	0.400	0.461	0.437	0.440	0.428					0.427	5.9
Hexachlorobutadiene	0.238	0.240	0.287	0.273	0.262	0.292					0.265	8.7
4-Chloro-3-methylphenol	0.393	0.376	0.440	0.409	0.418	0.437					0.412	6.1
2-Methylnaphthalene	0.742	0.728	0.848	1.029	1.055	1.108					0.918	18.2
Hexachlorocyclopentadiene	0.165	0.220	0.315	0.334	0.367	0.432					0.305	32.0
2,4,6-Trichlorophenol	0.372	0.373	0.452	0.418	0.432	0.442					0.415	8.4
2,4,5-Trichlorophenol		0.386	0.471	0.451	0.459	0.489					0.451	8.7
2-Chloronaphthalene	0.967	0.965	1.187	1.142	1.168	1.280					1.118	11.3
2-Nitroaniline		0.420	0.502	0.459	0.456	0.462					0.460	6.3
Dimethylphthalate	1.360	1.306	1.614	1.392	1.371	1.425					1.411	7.6
Acenaphthylene	1.567	1.559	1.957	1.810	1.884	2.037					1.803	11.1
2,6-Dinitrotoluene	0.310	0.310	0.381	0.358	0.371	0.398					0.355	10.5

6 - FORM VI SV-3

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date(s): 11/11/2014 11/11/2014

Calibration Times: 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6C0060.D RRF010 = S6C0061.D RRF025 = S6C0058B.D RRF040 = S6C0062.D RRF060 = S6C0063.D
RRF080 = S6C0059.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
3-Nitroaniline		0.298	0.368	0.340	0.359	0.379					0.349	9.1
Acenaphthene	1.052	1.034	1.283	1.173	1.197	1.310					1.175	9.7
2,4-Dinitrophenol		0.136	0.175	0.209	0.190	0.202					0.183	15.8
4-Nitrophenol		0.250	0.267	0.272	0.269	0.275					0.267	3.6
Dibenzofuran	1.394	1.399	1.687	1.526	1.524	1.620					1.525	7.7
2,4-Dinitrotoluene	0.437	0.405	0.488	0.441	0.444	0.452					0.445	6.0
Diethylphthalate	1.312	1.286	1.600	1.359	1.383	1.402					1.390	8.0
4-Chlorophenyl-phenylether	0.684	0.681	0.812	0.738	0.770	0.821					0.751	8.1
Fluorene	1.185	1.198	1.469	1.337	1.431	1.525					1.357	10.5
4-Nitroaniline		0.286	0.348	0.281	0.280	0.284					0.296	9.8
4,6-Dinitro-2-methylphenol		0.122	0.151	0.145	0.148	0.149					0.143	8.2
N-Nitrosodiphenylamine	0.578	0.573	0.634	0.637	0.639	0.649					0.618	5.5
4-Bromophenyl-phenylether	0.204	0.226	0.230	0.229	0.224	0.235					0.225	4.8
Hexachlorobenzene	0.208	0.211	0.232	0.224	0.225	0.230					0.222	4.5
Pentachlorophenol		0.059	0.080	0.087	0.098	0.110					0.087	22.0
Phenanthrene	0.912	0.897	1.037	0.993	0.983	1.013					0.973	5.7
Anthracene	0.915	0.905	1.077	0.983	0.989	1.002					0.979	6.4
Carbazole	0.843	0.868	0.963	0.872	0.852	0.858					0.876	5.0
Di-n-butylphthalate	0.966	0.964	1.235	1.030	1.071	1.094					1.060	9.5
Fluoranthene	1.019	0.955	1.254	1.056	1.091	1.101					1.079	9.3
Pyrene	1.205	1.108	1.136	1.176	1.159	1.144					1.154	2.9
Butylbenzylphthalate	0.489	0.484	0.500	0.491	0.480	0.495					0.490	1.5
3,3'-Dichlorobenzidine	0.409	0.402	0.402	0.383	0.375	0.324					0.383	8.3
Benzo(a)anthracene	1.120	1.012	1.193	1.127	1.051	1.120					1.104	5.8
Chrysene	1.009	0.906	1.035	0.906	0.895	0.910					0.943	6.5
Bis(2-ethylhexyl)phthalate	0.622	0.619	0.711	0.629	0.624	0.683					0.648	6.1
Di-n-octylphthalate	1.192	1.204	1.375	1.397	1.369	1.568					1.351	10.3

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6 - FORM VI SV-3

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date(s): 11/11/2014 11/11/2014

Calibration Times: 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6C0060.D RRF010 = S6C0061.D RRF025 = S6C0058B.D RRF040 = S6C0062.D RRF060 = S6C0063.D
RRF080 = S6C0059.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
Benzo(b)fluoranthene	1.193	1.072	1.218	1.282	1.163	1.466					1.232	10.9
Benzo(k)fluoranthene	1.143	1.114	1.184	1.103	1.236	1.128					1.151	4.3
Benzo(a)pyrene	1.035	1.008	1.133	1.071	1.061	1.162					1.078	5.5
Indeno(1,2,3-cd)pyrene	1.180	1.178	1.201	1.197	1.151	1.189					1.183	1.5
Dibenzo(a,h)anthracene	0.950	0.959	1.099	0.971	0.968	0.934					0.980	6.1
Benzo(g,h,i)perylene	0.961	0.968	1.112	0.972	0.933	0.934					0.980	6.8
1,1'-Biphenyl	1.270	1.292	1.539	1.543	1.636	1.788					1.511	13.2
1,4-Dioxane	0.234	0.222	0.250	0.232	0.212	0.219					0.228	6.0
Acetophenone	2.071	2.198	2.391	2.363	2.293	2.262					2.263	5.2
Atrazine	0.226	0.220	0.209	0.214	0.202	0.208					0.213	4.1
Benzaldehyde	1.054	1.165	1.117	0.561	0.367						0.853	42.7
Caprolactam	0.108	0.121	0.129	0.103	0.103	0.097					0.110	11.1

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6 - FORM VI SV-3

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date(s): 11/11/2014 11/11/2014

Calibration Times: 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6C0060.D RRF010 = S6C0061.D RRF025 = S6C0058B.D RRF040 = S6C0062.D RRF060 = S6C0063.D
RRF080 = S6C0059.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					$\overline{RRF}$	% RSD
Nitrobenzene-d5	0.408	0.437	0.495	0.475	0.460	0.454					0.455	6.7
2-Fluorobiphenyl	1.195	1.168	1.455	1.342	1.352	1.423					1.323	8.9
Terphenyl-d14	0.735	0.706	0.739	0.748	0.746	0.767					0.740	2.7
Phenol-d5	1.371	1.636	1.741	1.718	1.707	1.730					1.650	8.6
2-Fluorophenol	0.967	1.040	1.177	1.377	1.304	1.291					1.193	13.5
2,4,6-Tribromophenol	0.104	0.103	0.112	0.109	0.107	0.109					0.107	3.0

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7E - FORM VII SV-1

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date: 11/11/2014 Time: 13:57

Lab File ID: S6C0064.D Init. Calib. Date(s): 11/11/2014 11/11/2014

EPA Sample No.(SSTD020##) SICV0256V Init. Calib. Time(s): 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Phenol	1.743	1.836	0.800	5.3	20.0
Bis(2-chloroethyl)ether	0.864	0.884	0.700	2.3	20.0
2-Chlorophenol	1.299	1.318	0.800	1.4	20.0
2-Methylphenol	1.256	1.326	0.700	5.5	20.0
2,2´-oxybis(1-Chloropropane)	1.146	1.162	0.010	1.4	20.0
4-Methylphenol	1.327	1.455	0.600	9.6	20.0
N-Nitroso-di-n-propylamine	1.256	1.312	0.500	4.5	20.0
Hexachloroethane	0.641	0.649	0.300	1.2	20.0
Nitrobenzene	0.486	0.515	0.200	5.8	20.0
Isophorone	0.762	0.802	0.400	5.3	20.0
2-Nitrophenol	0.202	0.208	0.100	3.2	20.0
2,4-Dimethylphenol	0.454	0.476	0.200	4.9	20.0
2,4-Dichlorophenol	0.328	0.343	0.200	4.5	20.0
Naphthalene	0.977	1.033	0.700	5.8	20.0
4-Chloroaniline	0.416	0.438	0.010	5.3	20.0
Bis(2-chloroethoxy)methane	0.427	0.452	0.300	6.0	20.0
Hexachlorobutadiene	0.265	0.267	0.010	0.4	20.0
4-Chloro-3-methylphenol	0.412	0.424	0.200	2.9	20.0
2-Methylnaphthalene	0.918	0.820	0.400	-10.7	20.0
Hexachlorocyclopentadiene	0.305	0.292	0.050	-4.5	20.0
2,4,6-Trichlorophenol	0.415	0.450	0.200	8.4	20.0
2,4,5-Trichlorophenol	0.451	0.471	0.200	4.4	20.0
2-Chloronaphthalene	1.118	1.148	0.800	2.6	20.0
2-Nitroaniline	0.460	0.501	0.010	8.9	20.0
Dimethylphthalate	1.411	1.573	0.010	11.5	20.0
Acenaphthylene	1.803	1.919	0.900	6.5	20.0
2,6-Dinitrotoluene	0.355	0.371	0.200	4.6	20.0
3-Nitroaniline	0.349	0.371	0.010	6.3	20.0
Acenaphthene	1.175	1.264	0.900	7.5	20.0
2,4-Dinitrophenol	0.183	0.204	0.010	11.6	20.0
4-Nitrophenol	0.267	0.270	0.010	1.4	20.0
Dibenzofuran	1.525	1.651	0.800	8.3	20.0
2,4-Dinitrotoluene	0.445	0.482	0.200	8.4	20.0
Diethylphthalate	1.390	1.483	0.010	6.6	20.0
4-Chlorophenyl-phenylether	0.751	0.796	0.400	6.0	20.0
Fluorene	1.357	1.450	0.900	6.8	20.0
4-Nitroaniline	0.296	0.334	0.010	12.7	20.0
4,6-Dinitro-2-methylphenol	0.143	0.142	0.010	-0.6	20.0
N-Nitrosodiphenylamine	0.618	0.649	0.010	5.1	20.0
4-Bromophenyl-phenylether	0.225	0.230	0.100	2.6	20.0
Hexachlorobenzene	0.222	0.231	0.100	4.0	20.0
Pentachlorophenol	0.087	0.076	0.050	-12.1	20.0

7F - FORM VII SV-2

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date: 11/11/2014 Time: 13:57

Lab File ID: S6C0064.D Init. Calib. Date(s): 11/11/2014 11/11/2014

EPA Sample No.(SSTD020##) SICV0256V Init. Calib. Time(s): 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Phenanthrene	0.973	1.043	0.700	7.3	20.0
Anthracene	0.979	1.064	0.700	8.7	20.0
Carbazole	0.876	0.976	0.010	11.5	20.0
Di-n-butylphthalate	1.060	1.147	0.010	8.2	20.0
Fluoranthene	1.079	1.163	0.600	7.8	20.0
Pyrene	1.154	1.240	0.600	7.4	20.0
Butylbenzylphthalate	0.490	0.524	0.010	7.1	20.0
3,3´-Dichlorobenzidine	0.383	0.453	0.010	18.4	20.0
Benzo(a)anthracene	1.104	1.183	0.800	7.1	20.0
Chrysene	0.943	1.040	0.700	10.2	20.0
Bis(2-ethylhexyl)phthalate	0.648	0.689	0.010	6.3	20.0
Di-n-octylphthalate	1.351	1.384	0.010	2.5	20.0
Benzo(b)fluoranthene	1.232	1.376	0.700	11.7	20.0
Benzo(k)fluoranthene	1.151	1.278	0.700	11.0	20.0
Benzo(a)pyrene	1.078	1.146	0.700	6.3	20.0
Indeno(1,2,3-cd)pyrene	1.183	1.328	0.500	12.3	20.0
Dibenzo(a,h)anthracene	0.980	1.099	0.400	12.1	20.0
Benzo(g,h,i)perylene	0.980	1.115	0.500	13.8	20.0
1,1´-Biphenyl	1.511	1.528	0.010	1.1	20.0
1,4-Dioxane	0.228	0.244	0.010	7.0	20.0
Acetophenone	2.263	2.457	0.010	8.6	20.0
Atrazine	0.213	0.206	0.010	-3.4	20.0
Benzaldehyde	0.853	1.119	0.010	31.3	20.0
Caprolactam	0.110	0.128	0.010	15.8	20.0

7G - FORM VII SV-3

SEMIVOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date: 11/11/2014 Time: 13:57

Lab File ID: S6C0064.D Init. Calib. Date(s): 11/11/2014 11/11/2014

EPA Sample No.(SSTD020##) SICV0256V Init. Calib. Time(s): 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF025	MIN RRF	%D	MAX %D
Nitrobenzene-d5	0.455	0.483	0.010	6.2	20.0
2-Fluorobiphenyl	1.323	1.401	0.010	5.9	20.0
Terphenyl-d14	0.740	0.797	0.010	7.6	20.0
Phenol-d5	1.650	1.879	0.010	13.8	20.0
2-Fluorophenol	1.193	1.202	0.010	0.8	20.0
2,4,6-Tribromophenol	0.107	0.108	0.010	0.8	20.0

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79838 LCS Lot No.: A0103342

Date Extracted: 11/04/2014 Date Analyzed (1): 11/11/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Phenol	50.0000	0.0000	8.6272	17		0 - 115
Bis(2-chloroethyl)ether	50.0000	0.0000	41.3393	83		35 - 110
2-Chlorophenol	50.0000	0.0000	29.6821	59		35 - 105
2-Methylphenol	50.0000	0.0000	23.6700	47		40 - 110
2,2'-oxybis(1-Chloropropan	50.0000	0.0000	38.7146	77		30 - 123
4-Methylphenol	50.0000	0.0000	20.7338	41		30 - 110
N-Nitroso-di-n-propylamine	50.0000	0.0000	40.1327	80		35 - 130
Hexachloroethane	50.0000	0.0000	33.7688	68		30 - 95
Nitrobenzene	50.0000	0.0000	42.1810	84		45 - 110
Isophorone	50.0000	0.0000	44.8987	90		50 - 110
2-Nitrophenol	50.0000	0.0000	39.8593	80		40 - 115
2,4-Dimethylphenol	50.0000	0.0000	32.0241	64		30 - 110
2,4-Dichlorophenol	50.0000	0.0000	35.9196	72		50 - 105
Naphthalene	50.0000	0.0000	39.7188	79		40 - 100
4-Chloroaniline	50.0000	0.0000	40.7373	81		15 - 110
Bis(2-chloroethoxy)methane	50.0000	0.0000	41.7849	84		45 - 105
Hexachlorobutadiene	50.0000	0.0000	31.8814	64		25 - 105
4-Chloro-3-methylphenol	50.0000	0.0000	32.3346	65		45 - 110
2-Methylnaphthalene	50.0000	0.0000	30.5352	61		45 - 105
Hexachlorocyclopentadiene	50.0000	0.0000	29.7847	60		27 - 147
2,4,6-Trichlorophenol	50.0000	0.0000	39.3109	79		50 - 115
2,4,5-Trichlorophenol	50.0000	0.0000	40.5932	81		50 - 110
2-Chloronaphthalene	50.0000	0.0000	39.4548	79		50 - 105
2-Nitroaniline	50.0000	0.0000	44.9507	90		50 - 115
Dimethylphthalate	50.0000	0.0000	46.0360	92		25 - 125
Acenaphthylene	50.0000	0.0000	42.7845	86		50 - 105
2,6-Dinitrotoluene	50.0000	0.0000	45.8321	92		50 - 115
3-Nitroaniline	50.0000	0.0000	40.5190	81		20 - 125
Acenaphthene	50.0000	0.0000	42.1921	84		45 - 110
2,4-Dinitrophenol	50.0000	0.0000	9.1282	18		15 - 140
4-Nitrophenol	50.0000	0.0000	7.4186	15		0 - 125
Dibenzofuran	50.0000	0.0000	42.4944	85		55 - 105
2,4-Dinitrotoluene	50.0000	0.0000	47.7380	95		50 - 120
Diethylphthalate	50.0000	0.0000	45.8097	92		40 - 120
4-Chlorophenyl-phenylether	50.0000	0.0000	44.0542	88		50 - 110
Fluorene	50.0000	0.0000	44.8098	90		50 - 110
4-Nitroaniline	50.0000	0.0000	47.3248	95		35 - 120
4,6-Dinitro-2-methylphenol	50.0000	0.0000	33.0743	66		40 - 130
N-Nitrosodiphenylamine	50.0000	0.0000	41.7628	84		50 - 110
4-Bromophenyl-phenylether	50.0000	0.0000	43.3068	87		50 - 115
Hexachlorobenzene	50.0000	0.0000	45.6377	91		50 - 110
Pentachlorophenol	50.0000	0.0000	38.8241	78		40 - 115
Phenanthrene	50.0000	0.0000	45.5916	91		50 - 115
Anthracene	50.0000	0.0000	45.0080	90		55 - 110

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79838 LCS Lot No.: A0103342

Date Extracted: 11/04/2014 Date Analyzed (1): 11/11/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Carbazole	50.0000	0.0000	46.5564	93		50 - 115
Di-n-butylphthalate	50.0000	0.0000	47.5345	95		55 - 115
Fluoranthene	50.0000	0.0000	46.8227	94		55 - 115
Pyrene	50.0000	0.0000	45.9595	92		50 - 130
Butylbenzylphthalate	50.0000	0.0000	46.5202	93		45 - 115
3,3´-Dichlorobenzidine	50.0000	0.0000	51.4825	103		20 - 110
Benzo(a)anthracene	50.0000	0.0000	45.5563	91		55 - 110
Chrysene	50.0000	0.0000	45.2378	90		55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	0.0000	43.5797	87		40 - 125
Di-n-octylphthalate	50.0000	0.0000	42.8747	86		35 - 135
Benzo(b)fluoranthene	50.0000	0.0000	45.4972	91		45 - 120
Benzo(k)fluoranthene	50.0000	0.0000	43.2035	86		45 - 125
Benzo(a)pyrene	50.0000	0.0000	44.3931	89		55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	0.0000	39.3652	79		45 - 125
Dibenzo(a,h)anthracene	50.0000	0.0000	43.9410	88		40 - 125
Benzo(g,h,i)perylene	50.0000	0.0000	45.4975	91		40 - 125
1,1´-Biphenyl	50.0000	0.0000	38.6430	77		55 - 108
Acetophenone	50.0000	0.0000	48.5034	97		56 - 145
Atrazine	50.0000	0.0000	45.8673	92		52 - 175
Benzaldehyde	50.0000	0.0000	54.4067	109		10 - 133
Caprolactam	50.0000	0.0000	7.9048	16		10 - 146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 65 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79838 LCS Lot No.: A0103342

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	50.0000	9.5046	19		11		40	0 - 115
Bis(2-chloroethyl)ether	50.0000	39.8205	80		4		40	35 - 110
2-Chlorophenol	50.0000	28.9189	58		2		40	35 - 105
2-Methylphenol	50.0000	24.3853	49		4		40	40 - 110
2,2'-oxybis(1-Chloropropan	50.0000	37.2961	75		3		40	30 - 123
4-Methylphenol	50.0000	20.8219	42		2		40	30 - 110
N-Nitroso-di-n-propylamine	50.0000	38.9996	78		3		40	35 - 130
Hexachloroethane	50.0000	31.8893	64		6		40	30 - 95
Nitrobenzene	50.0000	39.9731	80		5		40	45 - 110
Isophorone	50.0000	44.6803	89		1		40	50 - 110
2-Nitrophenol	50.0000	36.6781	73		9		40	40 - 115
2,4-Dimethylphenol	50.0000	30.3401	61		5		40	30 - 110
2,4-Dichlorophenol	50.0000	34.8611	70		3		40	50 - 105
Naphthalene	50.0000	36.4220	73		8		40	40 - 100
4-Chloroaniline	50.0000	35.7992	72		12		40	15 - 110
Bis(2-chloroethoxy)methane	50.0000	40.1474	80		5		40	45 - 105
Hexachlorobutadiene	50.0000	31.1058	62		3		40	25 - 105
4-Chloro-3-methylphenol	50.0000	31.4457	63		3		40	45 - 110
2-Methylnaphthalene	50.0000	28.2688	57		7		40	45 - 105
Hexachlorocyclopentadiene	50.0000	27.2954	55		9		40	27 - 147
2,4,6-Trichlorophenol	50.0000	36.8798	74		7		40	50 - 115
2,4,5-Trichlorophenol	50.0000	38.0068	76		6		40	50 - 110
2-Chloronaphthalene	50.0000	35.6608	71		11		40	50 - 105
2-Nitroaniline	50.0000	39.7483	79		13		40	50 - 115
Dimethylphthalate	50.0000	41.3626	83		10		40	25 - 125
Acenaphthylene	50.0000	39.2575	79		8		40	50 - 105
2,6-Dinitrotoluene	50.0000	39.2817	79		15		40	50 - 115
3-Nitroaniline	50.0000	35.0267	70		15		40	20 - 125
Acenaphthene	50.0000	38.3101	77		9		40	45 - 110
2,4-Dinitrophenol	50.0000	12.2968	25		33		40	15 - 140
4-Nitrophenol	50.0000	12.7413	25		50	*	40	0 - 125
Dibenzofuran	50.0000	39.5859	79		7		40	55 - 105
2,4-Dinitrotoluene	50.0000	43.1908	86		10		40	50 - 120
Diethylphthalate	50.0000	42.0963	84		9		40	40 - 120
4-Chlorophenyl-phenylether	50.0000	39.5956	79		11		40	50 - 110
Fluorene	50.0000	40.7939	82		9		40	50 - 110
4-Nitroaniline	50.0000	41.6200	83		13		40	35 - 120
4,6-Dinitro-2-methylphenol	50.0000	33.7523	68		3		40	40 - 130
N-Nitrosodiphenylamine	50.0000	38.6244	77		9		40	50 - 110
4-Bromophenyl-phenylether	50.0000	40.2338	80		8		40	50 - 115
Hexachlorobenzene	50.0000	39.7096	79		14		40	50 - 110
Pentachlorophenol	50.0000	35.7077	71		9		40	40 - 115
Phenanthrene	50.0000	42.4444	85		7		40	50 - 115
Anthracene	50.0000	42.4100	85		6		40	55 - 110
Carbazole	50.0000	42.2562	85		9		40	50 - 115
Di-n-butylphthalate	50.0000	45.3304	91		4		40	55 - 115

3 - FORM III

WATER LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79838 LCS Lot No.: A0103342

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Fluoranthene	50.0000	43.6507	87		8		40	55 - 115
Pyrene	50.0000	42.2517	85		8		40	50 - 130
Butylbenzylphthalate	50.0000	43.2176	86		8		40	45 - 115
3,3'-Dichlorobenzidine	50.0000	39.1406	78		28		40	20 - 110
Benzo(a)anthracene	50.0000	42.9312	86		6		40	55 - 110
Chrysene	50.0000	43.4996	87		3		40	55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	41.2004	82		6		40	40 - 125
Di-n-octylphthalate	50.0000	40.3854	81		6		40	35 - 135
Benzo(b)fluoranthene	50.0000	41.8468	84		8		40	45 - 120
Benzo(k)fluoranthene	50.0000	41.8520	84		2		40	45 - 125
Benzo(a)pyrene	50.0000	41.7486	83		7		40	55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	36.2867	73		8		40	45 - 125
Dibenzo(a,h)anthracene	50.0000	42.2413	84		5		40	40 - 125
Benzo(g,h,i)perylene	50.0000	42.9666	86		6		40	40 - 125
1,1'-Biphenyl	50.0000	35.7309	71		8		40	55 - 108
Acetophenone	50.0000	43.8945	88		10		40	56 - 145
Atrazine	50.0000	42.3569	85		8		40	52 - 175
Benzaldehyde	50.0000	51.0258	102		7		40	10 - 133
Caprolactam	50.0000	7.5939	15		6		40	10 - 146

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 65 outside limits

Spike Recovery: 0 out of 65 outside limits

COMMENTS:

4C - FORM IV SV

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: S6C0065.D Lab Sample ID: MB-79838

Instrument ID: S6 Date Extracted: 11/04/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/11/2014

Level: (LOW/MED) LOW Time Analyzed: 14:17

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79838	LCS-79838	S6C0066.D	11/11/2014
02	LCSD-79838	LCSD-79838	S6C0067.D	11/11/2014
03	MW03-16I-NWG-102814	N2027-04C	S6C0080.D	11/11/2014
04	FD03-102814	N2027-06A	S6C0081.D	11/11/2014
05	FB03-103014	N2027-17B	S6C0082.D	11/11/2014

COMMENTS:

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79838

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0065.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	5.0
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	5.0
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	5.0
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	5.0
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	5.0
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	5.0
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	5.0
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	5.0
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	5.0
78-59-1	Isophorone	2.0	U	0.47	2.0	5.0
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	5.0
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	5.0
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	5.0
91-20-3	Naphthalene	2.0	U	0.96	2.0	5.0
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	5.0
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	5.0
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	5.0
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	5.0
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	5.0
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	5.0
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	5.0
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	10
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	5.0
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	10
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	5.0
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	5.0
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	5.0
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	10
83-32-9	Acenaphthene	2.0	U	0.65	2.0	5.0
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	10
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	10
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	5.0
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	5.0
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	5.0
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	5.0
86-73-7	Fluorene	2.0	U	0.44	2.0	5.0

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79838

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0065.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	10
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	10
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	5.0
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	5.0
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	5.0
87-86-5	Pentachlorophenol	10	U	1.7	10	10
85-01-8	Phenanthrene	2.0	U	0.45	2.0	5.0
120-12-7	Anthracene	2.0	U	0.48	2.0	5.0
86-74-8	Carbazole	2.0	U	0.64	2.0	5.0
84-74-2	Di-n-butylphthalate	2.2	J	0.48	2.0	5.0
206-44-0	Fluoranthene	2.0	U	0.33	2.0	5.0
129-00-0	Pyrene	2.0	U	0.44	2.0	5.0
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	5.0
91-94-1	3,3´-Dichlorobenzidine	10	U	1.7	10	5.0
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	5.0
218-01-9	Chrysene	2.0	U	0.42	2.0	5.0
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	5.0
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	5.0
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	5.0
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	5.0
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	5.0
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	5.0
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	5.0
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	5.0
92-52-4	1,1´-Biphenyl	2.0	U	0.65	2.0	5.0
123-91-1	1,4-Dioxane	10	U	5.7	10	5.0
98-86-2	Acetophenone	2.0	U	0.51	2.0	5.0
1912-24-9	Atrazine	2.0	U	1.3	2.0	5.0
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	5.0
105-60-2	Caprolactam	10	U	1.1	10	5.0

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-79838

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79838

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0065.D

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

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

[2]EPA-designated Registry Number.

2H - FORM II SV-2

WATER SEMIVOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

	EPA SAMPLE NO.	SDMC1 (NBZ) #	SDMC2 (FBP) #	SDMC3 (TPH) #	SDMC4 (PHL) #	SDMC5 (2FP) #	SDMC6 (TBP) #			TOT OUT
01	MB-79838	86	82	77	17	27	73			0
02	LCS-79838	90	90	88	15	27	78			0
03	LCSD-79838	83	80	80	17	28	75			0
04	MW03-16I-NWG-102814	107	103	78	15	26	88			0
05	FD03-102814	105	103	81	15	28	91			0
06	FB03-103014	109	99	76	17	27	95			0

		QC LIMITS
SDMC1	(NBZ) = Nitrobenzene-d5	(40-110)
SDMC2	(FBP) = 2-Fluorobiphenyl	(50-110)
SDMC3	(TPH) = Terphenyl-d14	(50-135)
SDMC4	(PHL) = Phenol-d5	(10-115)
SDMC5	(2FP) = 2-Fluorophenol	(20-110)
SDMC6	(TBP) = 2,4,6-Tribromophenol	(40-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

som14.10.02.1616

8C - FORM VIII SV-1

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 11/11/2014 11/11/2014

EPA Sample No.(SSTD020##) SSTD0256V Date Analyzed: 11/11/2014

Lab File ID (Standard): S6C0058B.D Time Analyzed: 11:54

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	97923		3.746		365385		4.839		248959		6.284	
	UPPER LIMIT	195846		4.246		730770		5.339		497918		6.784	
	LOWER LIMIT	48962		3.246		182693		4.339		124480		5.784	
	EPA SAMPLE NO.												
01	MB-79838	135377		3.746		551895		4.839		392640		6.284	
02	LCS-79838	130834		3.746		511962		4.844		350493		6.290	
03	LCSD-79838	146085		3.746		563614		4.845		397327		6.290	

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8C - FORM VIII SV-1

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 11/11/2014 11/11/2014

EPA Sample No.(SSTD020##) SICV0256V Date Analyzed: 11/11/2014

Lab File ID (Standard): S6C0064.D Time Analyzed: 13:57

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	125253		3.746		498654		4.845		333848		6.284	
	UPPER LIMIT	250506		4.246		997308		5.345		667696		6.784	
	LOWER LIMIT	62627		3.246		249327		4.345		166924		5.784	
	EPA SAMPLE NO.												
01	MW03-16I-NWG-102814	112678		3.752		405243		4.839		293247		6.284	
02	FD03-102814	85307		3.746		321871		4.839		228232		6.284	
03	FB03-103014	82701		3.746		340759		4.839		262195		6.284	

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8D - FORM VIII SV-2

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

EPA Sample No.(SSTD020##) SSTD0256V Date Analyzed: 11/11/2014

Lab File ID (Standard): S6C0058B.D Time Analyzed: 11:54

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	515659		7.489		596755		9.645		533406		10.908	
	UPPER LIMIT	1031318		7.989		1193510		10.145		1066812		11.408	
	LOWER LIMIT	257830		6.989		298378		9.145		266703		10.408	
	EPA SAMPLE NO.												
01	MB-79838	793725		7.489		762730		9.639		684450		10.897	
02	LCS-79838	732477		7.488		707581		9.651		569073		10.902	
03	LCSD-79838	821270		7.489		809833		9.651		671485		10.902	

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8D - FORM VIII SV-2

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

EPA Sample No.(SSTD020##) SICV0256V Date Analyzed: 11/11/2014

Lab File ID (Standard): S6C0064.D Time Analyzed: 13:57

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	686600		7.489		678233		9.645		578468		10.897	
	UPPER LIMIT	1373200		7.989		1356466		10.145		1156936		11.397	
	LOWER LIMIT	343300		6.989		339117		9.145		289234		10.397	
	EPA SAMPLE NO.												
01	MW03-16I-NWG-102814	621520		7.489		719646		9.639		613472		10.891	
02	FD03-102814	508472		7.489		566066		9.639		524265		10.890	
03	FB03-103014	557006		7.489		585708		9.639		525796		10.897	

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

Sample Calculation

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0082.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
108-95-2	Phenol	2.0	U	0.75	2.0	10
111-44-4	Bis(2-chloroethyl)ether	2.0	U	0.75	2.0	10
95-57-8	2-Chlorophenol	2.0	U	0.61	2.0	10
95-48-7	2-Methylphenol	2.0	U	0.96	2.0	10
108-60-1	2,2´-oxybis(1-Chloropropane)	2.0	U	0.78	2.0	10
106-44-5	4-Methylphenol	2.0	U	1.4	2.0	10
621-64-7	N-Nitroso-di-n-propylamine	2.0	U	0.63	2.0	10
67-72-1	Hexachloroethane	2.0	U	0.55	2.0	10
98-95-3	Nitrobenzene	2.0	U	1.6	2.0	10
78-59-1	Isophorone	2.0	U	0.47	2.0	10
88-75-5	2-Nitrophenol	2.0	U	0.60	2.0	10
105-67-9	2,4-Dimethylphenol	2.0	U	1.8	2.0	10
120-83-2	2,4-Dichlorophenol	2.0	U	0.57	2.0	10
91-20-3	Naphthalene	2.0	U	0.96	2.0	10
106-47-8	4-Chloroaniline	2.0	U	2.0	2.0	10
111-91-1	Bis(2-chloroethoxy)methane	2.0	U	1.1	2.0	10
87-68-3	Hexachlorobutadiene	2.0	U	0.75	2.0	10
59-50-7	4-Chloro-3-methylphenol	2.0	U	0.60	2.0	10
91-57-6	2-Methylnaphthalene	2.0	U	0.94	2.0	10
77-47-4	Hexachlorocyclopentadiene	10	U	1.0	10	10
88-06-2	2,4,6-Trichlorophenol	2.0	U	0.53	2.0	10
95-95-4	2,4,5-Trichlorophenol	2.0	U	0.26	2.0	20
91-58-7	2-Chloronaphthalene	2.0	U	0.81	2.0	10
88-74-4	2-Nitroaniline	2.0	U	0.71	2.0	20
131-11-3	Dimethylphthalate	2.0	U	0.37	2.0	10
208-96-8	Acenaphthylene	2.0	U	0.42	2.0	10
606-20-2	2,6-Dinitrotoluene	2.0	U	0.52	2.0	10
99-09-2	3-Nitroaniline	2.0	U	0.97	2.0	20
83-32-9	Acenaphthene	2.0	U	0.65	2.0	10
51-28-5	2,4-Dinitrophenol	10	U	3.5	10	20
100-02-7	4-Nitrophenol	2.0	U	0.53	2.0	20
132-64-9	Dibenzofuran	2.0	U	0.52	2.0	10
121-14-2	2,4-Dinitrotoluene	2.0	U	0.41	2.0	10
84-66-2	Diethylphthalate	2.0	U	0.45	2.0	10
7005-72-3	4-Chlorophenyl-phenylether	2.0	U	0.41	2.0	10
86-73-7	Fluorene	2.0	U	0.44	2.0	10

Sample Calculation

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-103014

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2027-17B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0082.D

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

% Moisture: Decanted: (Y/N) Date Received: 10/30/2014

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/04/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/11/2014

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
100-01-6	4-Nitroaniline	2.0	U	0.96	2.0	20
534-52-1	4,6-Dinitro-2-methylphenol	2.0	U	0.79	2.0	20
86-30-6	N-Nitrosodiphenylamine	2.0	U	1.1	2.0	10
101-55-3	4-Bromophenyl-phenylether	2.0	U	0.54	2.0	10
118-74-1	Hexachlorobenzene	2.0	U	0.44	2.0	10
87-86-5	Pentachlorophenol	10	U	1.7	10	20
85-01-8	Phenanthrene	2.0	U	0.45	2.0	10
120-12-7	Anthracene	2.0	U	0.48	2.0	10
86-74-8	Carbazole	2.0	U	0.64	2.0	10
84-74-2	Di-n-butylphthalate	4.1	BJ	0.48	2.0	10
206-44-0	Fluoranthene	2.0	U	0.33	2.0	10
129-00-0	Pyrene	2.0	U	0.44	2.0	10
85-68-7	Butylbenzylphthalate	2.0	U	0.32	2.0	10
91-94-1	3,3'-Dichlorobenzidine	10	U	1.7	10	10
56-55-3	Benzo(a)anthracene	2.0	U	0.40	2.0	10
218-01-9	Chrysene	2.0	U	0.42	2.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	2.0	U	1.3	2.0	10
117-84-0	Di-n-octylphthalate	2.0	U	0.47	2.0	10
205-99-2	Benzo(b)fluoranthene	2.0	U	0.94	2.0	10
207-08-9	Benzo(k)fluoranthene	2.0	U	1.2	2.0	10
50-32-8	Benzo(a)pyrene	2.0	U	1.2	2.0	10
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U	0.38	2.0	10
53-70-3	Dibenzo(a,h)anthracene	2.0	U	0.44	2.0	10
191-24-2	Benzo(g,h,i)perylene	2.0	U	0.39	2.0	10
92-52-4	1,1'-Biphenyl	2.0	U	0.65	2.0	10
123-91-1	1,4-Dioxane	10	U	5.7	10	10
98-86-2	Acetophenone	2.0	U	0.51	2.0	10
1912-24-9	Atrazine	2.0	U	1.3	2.0	10
100-52-7	Benzaldehyde	2.0	U	0.51	2.0	10
105-60-2	Caprolactam	10	U	1.1	10	10

Sample Calculation

Data File: \\avogadro\organics\S6.I\141111.B\S6C0082.d
Report Date: 14-Nov-2014 15:11

Spectrum Analytical, Inc. RI Division

Data file : \\avogadro\organics\S6.I\141111.B\S6C0082.d
Lab Smp Id: N2027-17B Client Smp ID: FB03-103014
Inj Date : 11-NOV-2014 20:21
Operator : TM SRC: LIMS Inst ID: S6.i
Smp Info : N2027-17B,,79838
Misc Info :
Comment :
Method : \\avogadro\organics\S6.I\141111.B\S6_8270C_N.m
Meth Date : 12-Nov-2014 12:29 S6.i Quant Type: ISTD
Cal Date : 11-NOV-2014 13:37 Cal File: S6C0063.d
Als bottle: 25
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: allnew.sub
Target Version: 4.14
Processing Host: TARGET102

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
$ 3	2-Fluorophenol	112	2.606	2.600	(0.696)	33752	13.6885	14
$ 5	Phenol-d5	99	3.569	3.557	(0.953)	29219	8.56253	8(a)
* 12	1,4-Dichlorobenzene-d4	152	3.745	3.745	(1.000)	82701	40.0000	
$ 22	Nitrobenzene-d5	82	4.245	4.251	(0.877)	211443	54.5540	54
* 31	Naphthalene-d8	136	4.838	4.844	(1.000)	340759	40.0000	
$ 41	2-Fluorobiphenyl	172	5.749	5.749	(0.915)	427075	49.2625	49
* 48	Acenaphthene-d10	164	6.284	6.284	(1.000)	262195	40.0000	
$ 60	2,4,6-Tribromophenol	330	6.936	6.942	(0.926)	71215	47.6039	48
* 64	Phenanthrene-d10	188	7.488	7.488	(1.000)	557006	40.0000	
68	Di-n-butylphthalate	149	8.005	8.011	(1.069)	60990	4.13238 ✓	4(a)
$ 72	Terphenyl-d14	244	8.798	8.798	(0.913)	411731	37.9874	38
* 76	Chrysene-d12	240	9.639	9.645	(1.000)	585708	40.0000	
* 83	Perylene-d12	264	10.896	10.896	(1.000)	525796	40.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

$\text{Concentration} = \frac{60990}{557006} \times \frac{40}{1.060} = 4.13$ ✓

Sample Calculation

6 - FORM VI SV-3

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2027 SAS No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date(s): 11/11/2014 11/11/2014

Calibration Times: 11:54 13:37

GC Column: Rxi-5sil MS ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = S6C0060.D RRF010 = S6C0061.D RRF025 = S6C0058B.D RRF040 = S6C0062.D RRF060 = S6C0063.D

RRF080 = S6C0059.D

COMPOUND	RRF005	RRF010	RRF025	RRF040	RRF060	RRF080					RRF	% RSD
3-Nitroaniline		0.298	0.368	0.340	0.359	0.379					0.349	9.1
Acenaphthene	1.052	1.034	1.283	1.173	1.197	1.310					1.175	9.7
2,4-Dinitrophenol		0.136	0.175	0.209	0.190	0.202					0.183	15.8
4-Nitrophenol		0.250	0.267	0.272	0.269	0.275					0.267	3.6
Dibenzofuran	1.394	1.399	1.687	1.526	1.524	1.620					1.525	7.7
2,4-Dinitrotoluene	0.437	0.405	0.488	0.441	0.444	0.452					0.445	6.0
Diethylphthalate	1.312	1.286	1.600	1.359	1.383	1.402					1.390	8.0
4-Chlorophenyl-phenylether	0.684	0.681	0.812	0.738	0.770	0.821					0.751	8.1
Fluorene	1.185	1.198	1.469	1.337	1.431	1.525					1.357	10.5
4-Nitroaniline		0.286	0.348	0.281	0.280	0.284					0.296	9.8
4,6-Dinitro-2-methylphenol		0.122	0.151	0.145	0.148	0.149					0.143	8.2
N-Nitrosodiphenylamine	0.578	0.573	0.634	0.637	0.639	0.649					0.618	5.5
4-Bromophenyl-phenylether	0.204	0.226	0.230	0.229	0.224	0.235					0.225	4.8
Hexachlorobenzene	0.208	0.211	0.232	0.224	0.225	0.230					0.222	4.5
Pentachlorophenol		0.059	0.080	0.087	0.098	0.110					0.087	22.0
Phenanthrene	0.912	0.897	1.037	0.993	0.983	1.013					0.973	5.7
Anthracene	0.915	0.905	1.077	0.983	0.989	1.002					0.979	6.4
Carbazole	0.843	0.868	0.963	0.872	0.852	0.858					0.876	5.0
Di-n-butylphthalate	0.966	0.964	1.235	1.030	1.071	1.094					1.060	9.5
Fluoranthene	1.019	0.955	1.254	1.056	1.091	1.101					1.079	9.3
Pyrene	1.205	1.108	1.136	1.176	1.159	1.144					1.154	2.9
Butylbenzylphthalate	0.489	0.484	0.500	0.491	0.480	0.495					0.490	1.5
3,3'-Dichlorobenzidine	0.409	0.402	0.402	0.383	0.375	0.324					0.383	8.3
Benzo(a)anthracene	1.120	1.012	1.193	1.127	1.051	1.120					1.104	5.8
Chrysene	1.009	0.906	1.035	0.906	0.895	0.910					0.943	6.5
Bis(2-ethylhexyl)phthalate	0.622	0.619	0.711	0.629	0.624	0.683					0.648	6.1
Di-n-octylphthalate	1.192	1.204	1.375	1.397	1.369	1.568					1.351	10.3

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

SW846

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 8270D SIM, SVOA by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8270D SIM

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: S6
Instrument Type: GCMS-Semi

Description: HP7890A
Manufacturer: Agilent
Model: 7890A/5973

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW03-03SA-NWG-103014 (N2027-15BMS) and MW03-03SA-NWG-103014 (N2027-15BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

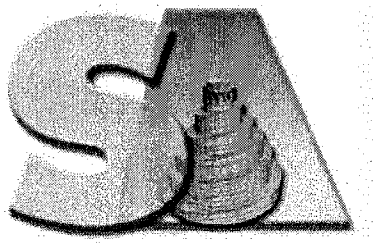
H. Manual Integration

No manual integrations were performed on any sample or standard.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____11/20/2014_____



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Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

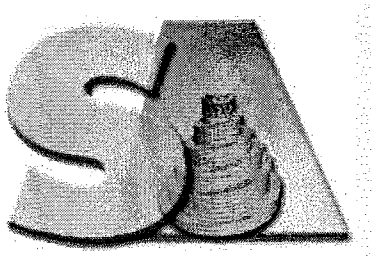
B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



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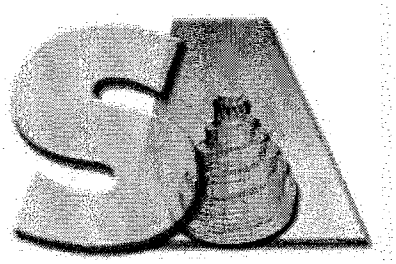
Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



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Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

5B - FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT

PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.

DFTPP6T

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: S6B9621.D DFTPP Injection Date: 10/08/2014

Instrument ID: S6 DFTPP Injection Time: 16:56

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.0
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	10.0 - 80.0% of mass 198	47.9
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 60.0% of mass 198	25.5
365	Greater than 1.0% of mass 198	3.6
441	Present, but less than mass 443	13.7
442	50.0 - 100% of mass 198	75.2
443	15.0 - 24.0% of mass 442	14.3 (19.0)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0016T	SSTD0016T	S6B9622.D	10/08/2014	17:14
02	SSTD0106T	SSTD0106T	S6B9623.D	10/08/2014	17:34
03	SSTD0.16T	SSTD0.16T	S6B9624.D	10/08/2014	17:54
04	SSTD0.56T	SSTD0.56T	S6B9625.D	10/08/2014	18:14
05	SSTD0056T	SSTD0056T	S6B9626.D	10/08/2014	18:34
06	SICV0016T	SICV0016T	S6B9627.D	10/08/2014	18:54

6H - FORM VI SV-SIM

SEMIVOLATILE ORGANICS SIM INITIAL CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date(s): 10/08/2014 10/08/2014

Calibration Time(s): 17:14 18:34

LAB FILE ID: RRF0.1 = S6B9624.D RRF0.5 = S6B9625.D

RRF001 = S6B9622.D RRF005 = S6B9626.D RRF010 = S6B9623.D

COMPOUND	RRF0.1	RRF0.5	RRF001	RRF005	RRF010	$\overline{RRF}$	%RSD
Naphthalene	1.375	1.275	1.272	1.239	1.209	1.274	4.9
Benzo(e)pyrene-d12	1.007	0.905	0.890	0.941	0.955	0.940	4.9

7H - FORM VII SV-SIM

SEMIVOLATILE SIM CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date: 10/08/2014 Time: 18:54

Lab File ID: S6B9627.D Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SICV0016T Init. Calib. Time(s): 17:14 18:34

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF001	MIN RRF	%D	MAX %D
Naphthalene	1.274	1.242	0.010	-2.5	20.0
Benzo(e)pyrene-d12	0.940	0.869	0.010	-7.5	20.0

5B - FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT

PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPINE (DFTPP)

EPA SAMPLE NO.

DFTPP6Y

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: S6C0136.D DFTPP Injection Date: 11/14/2014

Instrument ID: S6 DFTPP Injection Time: 10:37

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	53.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	56.0
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	10.0 - 80.0% of mass 198	49.9
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 60.0% of mass 198	25.3
365	Greater than 1.0% of mass 198	4.3
441	Present, but less than mass 443	7.3
442	50.0 - 100% of mass 198	79.9
443	15.0 - 24.0% of mass 442	14.8 (18.6)2

1 - Value is % mass 69 2 - Value is % mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0016Y	SSTD0016Y	S6C0137.D	11/14/2014	10:48
02	MW02-06SA-NWG-102914	N2027-08C	S6C0143.D	11/14/2014	13:04
03	MW03-01SA-NWG-102914	N2027-10C	S6C0144.D	11/14/2014	13:24
04	MW03-03SA-NWG-103014	N2027-15B	S6C0146.D	11/14/2014	14:04
05	MB-79812	MB-79812	S6C0148.D	11/14/2014	14:44
06	LCS-79812	LCS-79812	S6C0149.D	11/14/2014	15:05
07	LCSD-79812	LCSD-79812	S6C0150.D	11/14/2014	15:25
08	MW01-13SU-NWG-102714	N2027-02C	S6C0151.D	11/14/2014	15:45
09	MB-79877	MB-79877	S6C0152.D	11/14/2014	16:05
10	LCS-79877	LCS-79877	S6C0153.D	11/14/2014	16:25
11	MW03-03SA-NWG-103014MSD	N2027-15BMSD	S6C0154.D	11/14/2014	16:46
12	FB03-103014	N2027-17B	S6C0155.D	11/14/2014	17:06
13	FD04-102914	N2027-12C	S6C0156.D	11/14/2014	17:26
14	MW03-03SA-NWG-103014MS	N2027-15BMS	S6C0157.D	11/14/2014	17:46

7H - FORM VII SV-SIM

SEMIVOLATILE SIM CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: S6 Calibration Date: 11/14/2014 Time: 10:48

Lab File ID: S6C0137.D Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016Y Init. Calib. Time(s): 17:14 18:34

GC Column: Rxi-5sil MS ID: 0.25 (mm)

COMPOUND	RRF	RRF001	MIN RRF	%D	MAX %D
Naphthalene	1.274	1.179	0.010	-7.4	20.0
Benzo(e)pyrene-d12	0.940	0.903	0.010	-3.9	20.0

4D - FORM IV SV-SIM

SEMIVOLATILE SIM METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79812

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: S6C0148.D Lab Sample ID: MB-79812

Instrument ID: S6 Date Extracted: 11/03/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/14/2014

Time Analyzed: 14:44

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS-79812	LCS-79812	S6C0149.D	11/14/2014
02	LCSD-79812	LCSD-79812	S6C0150.D	11/14/2014
03	MW01-13SU-NWG-102714	N2027-02C	S6C0151.D	11/14/2014

COMMENTS:

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79812

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79812

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0148.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/03/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

4D - FORM IV SV-SIM

SEMIVOLATILE SIM METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79877

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: S6C0152.D Lab Sample ID: MB-79877

Instrument ID: S6 Date Extracted: 11/05/2014

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/14/2014

Time Analyzed: 16:05

Extraction: (Type) SEPF GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	MW02-06SA-NWG-102914	N2027-08C	S6C0143.D	11/14/2014
02	MW03-01SA-NWG-102914	N2027-10C	S6C0144.D	11/14/2014
03	MW03-03SA-NWG-103014	N2027-15B	S6C0146.D	11/14/2014
04	LCS-79877	LCS-79877	S6C0153.D	11/14/2014
05	MW03-03SA-NWG-103014MSD	N2027-15BMSD	S6C0154.D	11/14/2014
06	FB03-103014	N2027-17B	S6C0155.D	11/14/2014
07	FD04-102914	N2027-12C	S6C0156.D	11/14/2014
08	MW03-03SA-NWG-103014MS	N2027-15BMS	S6C0157.D	11/14/2014

COMMENTS:

1F - FORM I SV-SIM

SEMIVOLATILE SIM ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79877

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79877

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S6C0152.D

Extraction: (Type) SEPF

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 11/05/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 11/14/2014

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

CAS NO.	COMPOUND	CONCENTRATION: µG/L	Q	DL	LOD	LOQ
91-20-3	Naphthalene	0.10	U	0.050	0.10	0.10

3E - FORM III SIM1

WATER SEMIVOLATILE SIM MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix Spike - EPA Sample No.: MW03-03SA-NWG-103014

COMPOUND	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	MS CONCENTRATION (µg/L)	MS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.5121	60		47-105

COMPOUND	SPIKE ADDED (µg/L)	MSD CONCENTRATION (µg/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	2.5000	2.2033	88		37		0-40	47-105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79812

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79812 LCS Lot No.:

Date Extracted: 11/03/2014 Date Analyzed (1): 11/14/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	2.5620	102		47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79877

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79877 LCS Lot No.:

Date Extracted: 11/05/2014 Date Analyzed (1): 11/14/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Naphthalene	2.5000	0.0000	1.7905	72		47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79812

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79812 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	2.5000	2.4725	99		3		40	47 - 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 1 outside limits

COMMENTS:

2L - FORM II SV-SIM1

WATER SEMIVOLATILE SIM DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

	EPA SAMPLE NO.	SDMC17 (BEP) #		TOT OUT
01	MW02-06SA-NWG-102914	50		0
02	MW03-01SA-NWG-102914	49		0
03	MW03-03SA-NWG-103014	49		0
04	MB-79812	88		0
05	LCS-79812	96		0
06	LCSD-79812	91		0
07	MW01-13SU-NWG-102714	93		0
08	MB-79877	76		0
09	LCS-79877	71		0
10	MW03-03SA-NWG-103014MSD	49		0
11	FB03-103014	65		0
12	FD04-102914	48		0
13	MW03-03SA-NWG-103014MS	52		0

	QC LIMITS
SDMC17 (BEP) = Benzo(e)pyrene-d12	(48-162)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

som14.10.02.1616

8E - FORM VIII SV-SIM1

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016Y Date Analyzed: 11/14/2014

Lab File ID (Standard): S6C0137.D Time Analyzed: 10:48

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	15611		3.702		47785		4.793		28935		6.234	
	UPPER LIMIT	31222		4.202		95570		5.293		57870		6.734	
	LOWER LIMIT	7806		3.202		23893		4.293		14468		5.734	
	EPA SAMPLE NO.												
01	MW02-06SA-NW G-102914					41085		4.793					
02	MW03-01SA-NW G-102914					41248		4.793					
03	MW03-03SA-NW G-103014					40833		4.793					
04	MB-79812	14830		3.702		42789		4.793		25914		6.234	
05	LCS-79812	14523		3.702		41828		4.793		27563		6.234	
06	LCSD-79812	14098		3.703		41015		4.793		26504		6.234	
07	MW01-13SU-NW G-102714					37014		4.793					
08	MB-79877	14235		3.703		43542		4.793		26256		6.234	
09	LCS-79877	13372		3.703		38107		4.793		24463		6.234	
10	MW03-03SA-NW G-103014MSD					37095		4.793					
11	FB03-103014					43110		4.793					
12	FD04-102914					37862		4.793					

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8E - FORM VIII SV-SIM1

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: Rxi-5sil MS ID: 0.25 (mm) Init. Calib. Date(s): 10/08/2014 10/08/2014

EPA Sample No.(SSTD0.4##) SSTD0016Y Date Analyzed: 11/14/2014

Lab File ID (Standard): S6C0137.D Time Analyzed: 10:48

Instrument ID: S6

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	15611		3.702		47785		4.793		28935		6.234	
	UPPER LIMIT	31222		4.202		95570		5.293		57870		6.734	
	LOWER LIMIT	7806		3.202		23893		4.293		14468		5.734	
	EPA SAMPLE NO.												
13	MW03-03SA-NW G-103014MS					39154		4.793					

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8F - FORM VIII SV-SIM2

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

EPA Sample No.(SSTD0.4##) SSTD0016Y Date Analyzed: 11/14/2014

Lab File ID (Standard): S6C0137.D Time Analyzed: 10:48

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	120138		7.437		131042		9.584		129226		10.815	
	UPPER LIMIT	240276		7.937		262084		10.084		258452		11.315	
	LOWER LIMIT	60069		6.937		65521		9.084		64613		10.315	
	EPA SAMPLE NO.												
01	MW02-06SA-NW G-102914									100003		10.822	
02	MW03-01SA-NW G-102914									105642		10.822	
03	MW03-03SA-NW G-103014									111381		10.822	
04	MB-79812	103322		7.437		109174		9.584		104598		10.815	
05	LCS-79812	109027		7.437		107920		9.584		104380		10.822	
06	LCSD-79812	104184		7.437		104629		9.585		97788		10.816	
07	MW01-13SU-NW G-102714									98340		10.815	
08	MB-79877	110293		7.437		117529		9.585		112025		10.822	
09	LCS-79877	97862		7.437		109142		9.585		104878		10.816	
10	MW03-03SA-NW G-103014MSD									96690		10.815	
11	FB03-103014									105982		10.822	
12	FD04-102914									108485		10.822	

IS4 (PHN) = Phenanthrene-d10

IS5 (CRY) = Chrysene-d12

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area

AREA LOWER LIMIT = 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8F - FORM VIII SV-SIM2

SEMIVOLATILE SIM INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

EPA Sample No.(SSTD0.4##) SSTD0016Y Date Analyzed: 11/14/2014

Lab File ID (Standard): S6C0137.D Time Analyzed: 10:48

Instrument ID: S6 GC Column: Rxi-5sil MS ID: 0.25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	120138		7.437		131042		9.584		129226		10.815	
	UPPER LIMIT	240276		7.937		262084		10.084		258452		11.315	
	LOWER LIMIT	60069		6.937		65521		9.084		64613		10.315	
	EPA SAMPLE NO.												
13	MW03-03SA-NW G-103014MS									101835		10.822	

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 8081B, Organochlorine Pesticides by GC-ECD

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8081B

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: E6
Instrument Type: GC-ECD
Description: HP6890
Manufacturer: Hewlett-Packard

Model: 6890
GC Column used: 30 m X 0.53 mm ID [0.50 um thickness] CLPPest capillary column.
GC Column used: 30 m X 0.53 mm ID [0.42 um thickness] CLPPestII capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

E. Dilutions:

No sample in this SDG required analysis at dilution.

F. Samples:

The lower concentration between the primary and confirmatory GC column concentrations is reported due to the presence of interferences unless otherwise indicated. P flags are assigned to compounds when D% between the two columns are greater than 40%.

No other unusual occurrences were noted during sample analysis.

G. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

· M1 peak tailing or fronting
· M2 peak co-elution
· M3 rising or falling baseline
· M4 retention time shift
· M5 miscellaneous - under this category, the justification is explained
· M6 software did not integrate peak
· M7 partial peak integration

The following samples were manually integrated:

TOXAPH1F6 Toxaphene on front column , Toxaphene on rear column due to M3

TOXAPH2F6 Toxaphene on front column , Toxaphene on rear column due to M3

TOXAPH3F6 Toxaphene on front column , Toxaphene on rear column due to M3

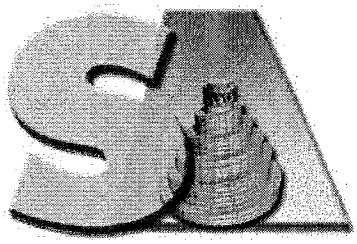
TOXAPH4F6 Toxaphene on front column due to M3

TOXAPH5F6 Toxaphene on front column , Decachlorobiphenyl on rear column , Toxaphene on rear column due to M3

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____11/20/2014_____



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U — Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J — This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

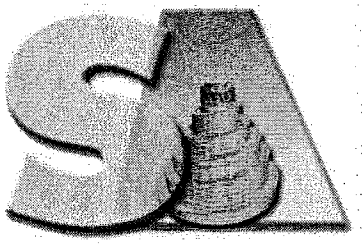
B — This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D — For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E — This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P — This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A — Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.



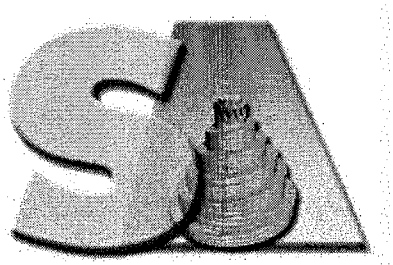
SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 10/27/2014 10/27/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 9.397			DCB: 20.558		
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	PEMF6	E6B3843F.D	10/27/2014	16:05	9.397	20.557
02	TOXAPH1F6	E6B3844F.D	10/27/2014	16:33	9.401	20.558
03	TOXAPH2F6	E6B3845F.D	10/27/2014	17:00	9.397	20.557
04	TOXAPH3F6	E6B3846F.D	10/27/2014	17:28	9.393	20.553
05	TOXAPH4F6	E6B3847F.D	10/27/2014	17:55	9.393	20.555
06	TOXAPH5F6	E6B3848F.D	10/27/2014	18:23	9.395	20.555
07	INDC1F6	E6B3849F.D	10/27/2014	18:50	9.396	20.556
08	INDC2F6	E6B3850F.D	10/27/2014	19:17	9.396	20.557
09	INDC3F6	E6B3851F.D	10/27/2014	19:45	9.398	20.559
10	INDC4F6	E6B3852F.D	10/27/2014	20:12	9.396	20.558
11	INDC5F6	E6B3853F.D	10/27/2014	20:40	9.399	20.559
12	INDC3FICV	E6B3923F.D	10/29/2014	15:01	9.400	20.559
13	PEMEB	E6B4094F.D	11/7/2014	1:42	9.399	20.560
14	INDC3EB	E6B4095F.D	11/7/2014	2:10	9.399	20.565
15	TOXAPH3EB	E6B4096F.D	11/7/2014	2:37	9.396	20.560
16	MB-79843	E6B4103F.D	11/7/2014	5:50	9.393	20.556
17	LCS-79843	E6B4104F.D	11/7/2014	6:17	9.396	20.559
18	LCSD-79843	E6B4105F.D	11/7/2014	6:45	9.395	20.560
19	MW03-16I-NWG-102814	E6B4106F.D	11/7/2014	7:12	9.395	20.559
20	FD03-102814	E6B4107F.D	11/7/2014	7:39	9.395	20.559
21	INDC3EC	E6B4109F.D	11/7/2014	8:34	9.394	20.561
22	TOXAPH3EC	E6B4110F.D	11/7/2014	9:02	9.395	20.560

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 10/27/2014 10/27/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 10.723 DCB: 23.189

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT	#	DCB RT	#
01	PEMF6	E6B3843R.D	10/27/2014	16:05	10.724		23.188	
02	TOXAPH1F6	E6B3844R.D	10/27/2014	16:33	10.724		23.190	
03	TOXAPH2F6	E6B3845R.D	10/27/2014	17:00	10.723		23.192	
04	TOXAPH3F6	E6B3846R.D	10/27/2014	17:28	10.719		23.186	
05	TOXAPH4F6	E6B3847R.D	10/27/2014	17:55	10.720		23.188	
06	TOXAPH5F6	E6B3848R.D	10/27/2014	18:23	10.721		23.188	
07	INDC1F6	E6B3849R.D	10/27/2014	18:50	10.722		23.187	
08	INDC2F6	E6B3850R.D	10/27/2014	19:17	10.722		23.188	
09	INDC3F6	E6B3851R.D	10/27/2014	19:45	10.724		23.192	
10	INDC4F6	E6B3852R.D	10/27/2014	20:12	10.722		23.190	
11	INDC5F6	E6B3853R.D	10/27/2014	20:40	10.725		23.190	
12	INDC3FICV	E6B3923R.D	10/29/2014	15:01	10.728		23.191	
13	PEMEB	E6B4094R.D	11/7/2014	1:42	10.728		23.194	
14	INDC3EB	E6B4095R.D	11/7/2014	2:10	10.729		23.202	
15	TOXAPH3EB	E6B4096R.D	11/7/2014	2:37	10.725		23.196	
16	MB-79843	E6B4103R.D	11/7/2014	5:50	10.722		23.189	
17	LCS-79843	E6B4104R.D	11/7/2014	6:17	10.726		23.197	
18	LCSD-79843	E6B4105R.D	11/7/2014	6:45	10.725		23.196	
19	MW03-16I-NWG-102814	E6B4106R.D	11/7/2014	7:12	10.724		23.195	
20	FD03-102814	E6B4107R.D	11/7/2014	7:39	10.724		23.195	
21	INDC3EC	E6B4109R.D	11/7/2014	8:34	10.723		23.196	
22	TOXAPH3EC	E6B4110R.D	11/7/2014	9:02	10.724		23.197	

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

som14.10.02.1616

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 11/14/2014 11/14/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.228 DCB: 8.414

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT	#	DCB RT	#
01	PEMG6	E6B4515F.D	11/14/2014	14:30	3.229		8.415	
02	TOXAPH1G6	E6B4516F.D	11/14/2014	14:44	3.226		8.413	
03	TOXAPH2G6	E6B4517F.D	11/14/2014	14:58	3.227		8.413	
04	TOXAPH3G6	E6B4518F.D	11/14/2014	15:12	3.229		8.415	
05	TOXAPH4G6	E6B4519F.D	11/14/2014	15:26	3.228		8.413	
06	TOXAPH5G6	E6B4520F.D	11/14/2014	15:40	3.228		8.412	
07	INDC1G6	E6B4522F.D	11/14/2014	16:08	3.229		8.415	
08	INDC2G6	E6B4523F.D	11/14/2014	16:22	3.227		8.413	
09	INDC3G6	E6B4524F.D	11/14/2014	16:37	3.226		8.414	
10	INDC4G6	E6B4525F.D	11/14/2014	16:51	3.228		8.414	
11	INDC5G6	E6B4526F.D	11/14/2014	17:05	3.228		8.413	
12	INDCICVGA	E6B4527F.D	11/14/2014	17:19	3.229		8.416	
13	PEMGD	E6B4555F.D	11/14/2014	23:53	3.226		8.411	
14	INDC3GD	E6B4556F.D	11/15/2014	0:07	3.228		8.412	
15	TOXAPH3GD	E6B4557F.D	11/15/2014	0:21	3.228		8.412	
16	MB-79912	E6B4559F.D	11/15/2014	0:49	3.227		8.412	
17	LCS-79912	E6B4560F.D	11/15/2014	1:03	3.228		8.411	
18	LCSD-79912	E6B4561F.D	11/15/2014	1:17	3.228		8.411	
19	FB03-103014	E6B4562F.D	11/15/2014	1:31	3.229		8.412	
20	INDC3GE	E6B4564F.D	11/15/2014	1:59	3.229		8.414	
21	TOXAPH3GE	E6B4565F.D	11/15/2014	2:13	3.228		8.414	

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8G - FORM VIII PEST

PESTICIDE ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 11/14/2014 11/14/2014

Instrument ID: E6

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 3.681		DCB: 9.627				
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT	#	DCB RT	#
01	PEMG6	E6B4515R.D	11/14/2014	14:30	3.681		9.629	
02	TOXAPH1G6	E6B4516R.D	11/14/2014	14:44	3.681		9.627	
03	TOXAPH2G6	E6B4517R.D	11/14/2014	14:58	3.680		9.626	
04	TOXAPH3G6	E6B4518R.D	11/14/2014	15:12	3.681		9.627	
05	TOXAPH4G6	E6B4519R.D	11/14/2014	15:26	3.680		9.625	
06	TOXAPH5G6	E6B4520R.D	11/14/2014	15:40	3.681		9.625	
07	INDC1G6	E6B4522R.D	11/14/2014	16:08	3.681		9.629	
08	INDC2G6	E6B4523R.D	11/14/2014	16:22	3.681		9.626	
09	INDC3G6	E6B4524R.D	11/14/2014	16:37	3.680		9.626	
10	INDC4G6	E6B4525R.D	11/14/2014	16:51	3.681		9.627	
11	INDC5G6	E6B4526R.D	11/14/2014	17:05	3.680		9.627	
12	INDCICVGA	E6B4527R.D	11/14/2014	17:19	3.682		9.629	
13	PEMGD	E6B4555R.D	11/14/2014	23:53	3.680		9.625	
14	INDC3GD	E6B4556R.D	11/15/2014	0:07	3.680		9.625	
15	TOXAPH3GD	E6B4557R.D	11/15/2014	0:21	3.681		9.625	
16	MB-79912	E6B4559R.D	11/15/2014	0:49	3.680		9.625	
17	LCS-79912	E6B4560R.D	11/15/2014	1:03	3.681		9.625	
18	LCSD-79912	E6B4561R.D	11/15/2014	1:17	3.680		9.625	
19	FB03-103014	E6B4562R.D	11/15/2014	1:31	3.682		9.626	
20	INDC3GE	E6B4564R.D	11/15/2014	1:59	3.682		9.627	
21	TOXAPH3GE	E6B4565R.D	11/15/2014	2:13	3.682		9.628	

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

6J - FORM VI PEST-1

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPest ID: 0.53 (mm) Date(s) Analyzed: 10/27/2014 10/27/2014

COMPOUND	RT* OF STANDARDS					RT	RT WINDOW **	
	CS1	CS2	CS3	CS4	CS5		FROM	TO
alpha-BHC	10.763	10.763	10.765	10.764	10.766	10.764	10.714	10.814
beta-BHC	11.738	11.737	11.738	11.737	11.736	11.737	11.687	11.787
delta-BHC	12.140	12.139	12.140	12.139	12.139	12.139	12.089	12.189
gamma-BHC (Lindane)	11.502	11.501	11.503	11.503	11.505	11.502	11.452	11.552
Heptachlor	12.547	12.547	12.549	12.549	12.551	12.549	12.499	12.599
Aldrin	13.187	13.187	13.189	13.188	13.189	13.188	13.138	13.238
Heptachlor epoxide	14.433	14.434	14.435	14.434	14.434	14.434	14.364	14.504
Endosulfan I	15.210	15.209	15.209	15.209	15.208	15.209	15.139	15.279
Dieldrin	15.678	15.678	15.678	15.677	15.676	15.677	15.607	15.747
4,4´-DDE	15.121	15.120	15.120	15.119	15.118	15.120	15.050	15.190
Endrin	16.129	16.129	16.129	16.128	16.127	16.128	16.058	16.198
Endosulfan II	16.572	16.572	16.572	16.568	16.566	16.570	16.500	16.640
4,4´-DDD	16.269	16.269	16.269	16.266	16.264	16.267	16.197	16.337
Endosulfan sulfate	18.155	18.156	18.156	18.154	18.154	18.155	18.085	18.225
4,4´-DDT	16.792	16.793	16.794	16.791	16.791	16.792	16.722	16.862
Methoxychlor	17.722	17.722	17.722	17.719	17.720	17.721	17.651	17.791
Endrin ketone	18.693	18.694	18.694	18.691	18.691	18.693	18.623	18.763
Endrin aldehyde	17.349	17.349	17.349	17.347	17.346	17.348	17.278	17.418
alpha-Chlordane	14.953	14.953	14.954	14.952	14.951	14.953	14.883	15.023
gamma-Chlordane	14.693	14.694	14.694	14.692	14.692	14.693	14.623	14.763
TCX (A)	9.396	9.396	9.398	9.396	9.399	9.397	9.347	9.447
DCB (A)	20.556	20.557	20.559	20.558	20.559	20.558	20.458	20.658

(A) Surrogate RTs are measured from Standard Mixture A if two mixtures are used or from Standard Mix C if one mix is used.

(B) Surrogate RTs are measured from Standard Mixture A if two mixtures are used. Leave entries blank if Standard Mixtures C is used.

* RT windows are ± 0.05 minutes for all compounds that elute before Heptachlor epoxide; ± 0.07 minutes for all other compounds (except ± 0.10 minutes for DCB

TCX = Tetrachloro-m-xylene
DCB = Decachlorobipenyl

6J - FORM VI PEST-1

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPestII ID: 0.53 (mm) Date(s) Analyzed: 10/27/2014 10/27/2014

COMPOUND	RT* OF STANDARDS					RT	RT WINDOW **	
	CS1	CS2	CS3	CS4	CS5		FROM	TO
alpha-BHC	12.258	12.258	12.260	12.260	12.262	12.260	12.210	12.310
beta-BHC	13.281	13.280	13.281	13.280	13.281	13.280	13.230	13.330
delta-BHC	13.940	13.942	13.942	13.942	13.941	13.941	13.891	13.991
gamma-BHC (Lindane)	13.092	13.092	13.094	13.094	13.096	13.093	13.043	13.143
Heptachlor	14.072	14.074	14.075	14.074	14.076	14.074	14.024	14.124
Aldrin	14.777	14.777	14.779	14.778	14.780	14.778	14.728	14.828
Heptachlor epoxide	15.955	15.955	15.957	15.955	15.956	15.956	15.886	16.026
Endosulfan I	16.751	16.750	16.752	16.750	16.751	16.751	16.681	16.821
Dieldrin	17.283	17.284	17.286	17.284	17.285	17.284	17.214	17.354
4,4´-DDE	16.918	16.918	16.919	16.917	16.917	16.918	16.848	16.988
Endrin	17.884	17.886	17.888	17.885	17.886	17.886	17.816	17.956
Endosulfan II	18.293	18.294	18.295	18.293	18.292	18.293	18.223	18.363
4,4´-DDD	18.037	18.037	18.038	18.034	18.033	18.035	17.965	18.105
Endosulfan sulfate	19.459	19.460	19.461	19.459	19.460	19.460	19.390	19.530
4,4´-DDT	18.637	18.637	18.639	18.636	18.636	18.637	18.567	18.707
Methoxychlor	19.908	19.909	19.909	19.908	19.908	19.908	19.838	19.978
Endrin ketone	20.500	20.502	20.502	20.500	20.501	20.501	20.431	20.571
Endrin aldehyde	18.930	18.931	18.932	18.930	18.930	18.930	18.860	19.000
alpha-Chlordane	16.618	16.618	16.620	16.619	16.619	16.619	16.549	16.689
gamma-Chlordane	16.330	16.330	16.332	16.330	16.331	16.330	16.260	16.400
TCX (A)	10.722	10.722	10.724	10.722	10.725	10.723	10.673	10.773
DCB (A)	23.187	23.188	23.192	23.190	23.190	23.189	23.089	23.289

(A) Surrogate RTs are measured from Standard Mixture A if two mixtures are used or from Standard Mix C if one mix is used.

(B) Surrogate RTs are measured from Standard Mixture A if two mixtures are used. Leave entries blank if Standard Mixtures C is used.

* RT windows are ± 0.05 minutes for all compounds that elute before Heptachlor epoxide; ± 0.07 minutes for all other compounds (except ± 0.10 minutes for DCB

TCX = Tetrachloro-m-xylene

DCB = Decachlorobipenyl

6J - FORM VI PEST-1

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPest ID: 0.53 (mm) Date(s) Analyzed: 11/14/2014 11/14/2014

COMPOUND	RT* OF STANDARDS					RT	RT WINDOW **	
	CS1	CS2	CS3	CS4	CS5		FROM	TO
alpha-BHC	3.691	3.692	3.690	3.692	3.692	3.691	3.641	3.741
beta-BHC	4.050	4.049	4.049	4.050	4.049	4.050	4.000	4.100
delta-BHC	4.215	4.214	4.214	4.215	4.213	4.214	4.164	4.264
gamma-BHC (Lindane)	3.964	3.962	3.962	3.964	3.963	3.963	3.913	4.013
Heptachlor	4.385	4.384	4.384	4.385	4.384	4.384	4.334	4.434
Aldrin	4.665	4.664	4.665	4.665	4.665	4.665	4.615	4.715
Heptachlor epoxide	5.255	5.254	5.254	5.255	5.253	5.254	5.184	5.324
Endosulfan I	5.664	5.662	5.661	5.661	5.660	5.662	5.592	5.732
Dieldrin	5.923	5.921	5.920	5.920	5.918	5.920	5.850	5.990
4,4´-DDE	5.609	5.607	5.606	5.605	5.603	5.606	5.536	5.676
Endrin	6.182	6.180	6.179	6.177	6.175	6.179	6.109	6.249
Endosulfan II	6.444	6.442	6.440	6.440	6.438	6.441	6.371	6.511
4,4´-DDD	6.269	6.267	6.266	6.265	6.263	6.266	6.196	6.336
Endosulfan sulfate	7.289	7.287	7.286	7.286	7.285	7.287	7.217	7.357
4,4´-DDT	6.574	6.572	6.572	6.572	6.570	6.572	6.502	6.642
Methoxychlor	7.088	7.086	7.085	7.085	7.083	7.085	7.015	7.155
Endrin ketone	7.547	7.545	7.545	7.545	7.543	7.545	7.475	7.615
Endrin aldehyde	6.872	6.871	6.870	6.870	6.868	6.870	6.800	6.940
alpha-Chlordane	5.523	5.522	5.521	5.522	5.521	5.522	5.452	5.592
gamma-Chlordane	5.389	5.387	5.386	5.386	5.385	5.387	5.317	5.457
TCX (A)	3.229	3.227	3.226	3.228	3.228	3.228	3.178	3.278
DCB (A)	8.415	8.413	8.414	8.414	8.413	8.414	8.314	8.514

(A) Surrogate RTs are measured from Standard Mixture A if two mixtures are used or from Standard Mix C if one mix is used.

(B) Surrogate RTs are measured from Standard Mixture A if two mixtures are used. Leave entries blank if Standard Mixtures C is used.

* RT windows are ± 0.05 minutes for all compounds that elute before Heptachlor epoxide; ± 0.07 minutes for all other compounds (except ± 0.10 minutes for DCB

TCX = Tetrachloro-m-xylene

DCB = Decachlorobipenyl

6J - FORM VI PEST-1

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPestII ID: 0.53 (mm) Date(s) Analyzed: 11/14/2014 11/14/2014

COMPOUND	RT* OF STANDARDS					RT	RT WINDOW **	
	CS1	CS2	CS3	CS4	CS5		FROM	TO
alpha-BHC	4.261	4.260	4.260	4.260	4.260	4.260	4.210	4.310
beta-BHC	4.694	4.692	4.692	4.693	4.692	4.693	4.643	4.743
delta-BHC	5.009	5.008	5.008	5.008	5.008	5.008	4.958	5.058
gamma-BHC (Lindane)	4.618	4.617	4.616	4.617	4.617	4.617	4.567	4.667
Heptachlor	5.084	5.083	5.083	5.084	5.083	5.083	5.033	5.133
Aldrin	5.443	5.442	5.442	5.443	5.442	5.442	5.392	5.492
Heptachlor epoxide	6.083	6.082	6.081	6.082	6.081	6.082	6.012	6.152
Endosulfan I	6.540	6.538	6.539	6.539	6.538	6.539	6.469	6.609
Dieldrin	6.835	6.832	6.832	6.832	6.831	6.832	6.762	6.902
4,4´-DDE	6.641	6.639	6.639	6.638	6.637	6.639	6.569	6.709
Endrin	7.147	7.145	7.145	7.145	7.143	7.145	7.075	7.215
Endosulfan II	7.353	7.351	7.351	7.350	7.349	7.351	7.281	7.421
4,4´-DDD	7.235	7.234	7.234	7.233	7.232	7.234	7.164	7.304
Endosulfan sulfate	7.897	7.896	7.896	7.896	7.895	7.896	7.826	7.966
4,4´-DDT	7.528	7.526	7.526	7.526	7.525	7.526	7.456	7.596
Methoxychlor	8.109	8.107	8.107	8.107	8.106	8.107	8.037	8.177
Endrin ketone	8.365	8.363	8.364	8.364	8.363	8.364	8.294	8.434
Endrin aldehyde	7.657	7.655	7.655	7.655	7.654	7.655	7.585	7.725
alpha-Chlordane	6.467	6.465	6.465	6.465	6.464	6.465	6.395	6.535
gamma-Chlordane	6.300	6.298	6.299	6.299	6.298	6.299	6.229	6.369
TCX (A)	3.681	3.681	3.680	3.681	3.680	3.681	3.631	3.731
DCB (A)	9.629	9.626	9.626	9.627	9.627	9.627	9.527	9.727

(A) Surrogate RTs are measured from Standard Mixture A if two mixtures are used or from Standard Mix C if one mix is used.

(B) Surrogate RTs are measured from Standard Mixture A if two mixtures are used. Leave entries blank if Standard Mixtures C is used.

* RT windows are ± 0.05 minutes for all compounds that elute before Heptachlor epoxide; ± 0.07 minutes for all other compounds (except ± 0.10 minutes for DCB

TCX = Tetrachloro-m-xylene

DCB = Decachlorobipenyl

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	109152000	101397200	107459150	106677575	111223300	3.4
beta-BHC	181112600	159430100	150026700	145812225	148533613	9.2
delta-BHC	200545200	193521200	187491700	215516950	270047200	15.6
gamma-BHC (Lindane)	354955200	320668000	332551950	330151025	344592138	4.0
Heptachlor	296741400	282893800	273635950	262498250	265124713	5.1
Aldrin	336386600	311748100	319924950	315039925	325072500	3.0
Heptachlor epoxide	321108400	301352900	297557550	295790050	297182550	3.5
Endosulfan I	106639000	94107800	93507350	91686025	93082988	6.4
Dieldrin	295428100	271476150	273345700	264314363	264110850	4.7
4,4'-DDE	256906900	236950200	241357775	240545875	243929138	3.1
Endrin	72330700	65454950	65321500	61800313	61651056	6.6
Endosulfan II	266946300	241678000	233356500	234948513	254015925	5.8
4,4'-DDD	189702700	173909050	154051325	152895225	175665288	9.2
Endosulfan sulfate	210719300	199624300	203352675	199313288	198133588	2.5
4,4'-DDT	197937300	192185550	185749200	190394925	205119888	3.8
Methoxychlor	92673680	83340150	76830115	71255008	70207335	11.8
Endrin ketone	84896900	76952400	78221125	75425513	77108575	4.7
Endrin aldehyde	61973600	55653050	55992725	55813100	61200500	5.5
alpha-Chlordane	346193000	305465600	301277050	295191350	296312438	6.9
gamma-Chlordane	102355400	95341100	97068900	94819450	96847488	3.1
TCX (A)	364015200	326788600	319623600	305606000	303028000	7.6
DCB (A)	303187500	280566200	253435525	236831463	230375269	11.7

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	330069400	311644700	330825650	334303250	352297413	4.4
beta-BHC	134516000	129740200	144714750	147011650	150031950	6.1
delta-BHC	161870800	147691600	167389450	191021400	233819150	18.7
gamma-BHC (Lindane)	308756600	287535200	301675850	301230850	313302863	3.2
Heptachlor	217861400	202191300	208739500	199788625	195541438	4.3
Aldrin	327801600	299249900	314084350	310451050	316855688	3.3
Heptachlor epoxide	276974600	257405800	266287750	265687075	271673638	2.7
Endosulfan I	79427800	72856400	75033200	74616400	76683275	3.3
Dieldrin	220056100	206707450	210561150	203740350	200304956	3.6
4,4´-DDE	242309300	224730950	235028000	234966825	230183488	2.8
Endrin	47983800	43863250	43061725	40767775	40620481	6.9
Endosulfan II	215412400	206735000	202656325	226713538	224838506	5.0
4,4´-DDD	130136900	125076850	116973700	112214663	108468125	7.6
Endosulfan sulfate	175228900	166319650	174767525	173270050	173805875	2.1
4,4´-DDT	131272300	123120400	130809950	139586650	139285256	5.2
Methoxychlor	56931420	51114020	50038350	46095525	44042158	10.0
Endrin ketone	62465600	57008750	57214500	55879338	56361713	4.6
Endrin aldehyde	44433200	40864400	41081400	40723375	44303981	4.5
alpha-Chlordane	301848600	277142600	286818250	279850200	280847263	3.5
gamma-Chlordane	305802400	284035300	294201950	291634425	294976463	2.7
TCX (A)	93062600	85200300	85473150	80771150	79481750	6.3
DCB (A)	269791300	248877800	248988150	236576075	231731350	6.0

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	111861600	119859500	121682650	141981850	112217238	10.1
beta-BHC	135816200	131403300	128250900	137785800	109543575	8.8
delta-BHC	195176000	199186200	212626600	261143575	226984463	12.2
gamma-BHC (Lindane)	253979200	269702500	269499250	316165850	252245300	9.5
Heptachlor	275415200	261179900	261708700	294052075	236804138	7.9
Aldrin	253091000	255052000	252344700	293848825	234649350	8.4
Heptachlor epoxide	245485000	242092500	233195300	265198400	209592913	8.5
Endosulfan I	135844000	128112300	119610750	130593425	101144263	11.0
Dieldrin	232317900	236328150	233496300	255511050	199621563	8.7
4,4´-DDE	173112900	180616950	175131675	200451138	160313575	8.2
Endrin	83950800	85955800	78315175	87226025	67451456	10.0
Endosulfan II	192103700	203022850	181400000	216602725	170041731	9.4
4,4´-DDD	115725700	156134700	141847725	189621513	153955706	17.6
Endosulfan sulfate	172328700	182457050	170274900	194562263	149458400	9.6
4,4´-DDT	158305300	178615150	169689175	211424313	168761981	11.5
Methoxychlor	87673040	88879510	78956350	84666130	64898253	12.1
Endrin ketone	104511800	100906200	90973925	98394575	76697350	11.7
Endrin aldehyde	61357100	57921950	53509375	57790750	48650619	8.8
alpha-Chlordane	293940800	245186000	234823550	263596425	205971213	13.2
gamma-Chlordane	126921800	114584600	109776950	122507750	96732225	10.3
TCX (A)	203249800	191815600	188220400	188851450	144463100	12.3
DCB (A)	274762600	248058750	238023750	235316675	181548638	14.4

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

6K - FORM VI PEST-2

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E6

Level (x CS1): CS1 1.0 CS1 2.0 CS3 4.0 CS4 8.0 CS5 16.0

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

COMPOUND	CALIBRATION FACTORS (CFs)					% RSD
	CS1	CS2	CS3	CS4	CS5	
alpha-BHC	395335000	406898300	385423600	425674700	328561900	9.4
beta-BHC	219601600	220107300	196595600	204551975	154062763	13.6
delta-BHC	273813600	291094300	282124900	328543500	265835938	8.5
gamma-BHC (Lindane)	386363000	391177300	365065500	398041300	303861063	10.4
Heptachlor	366165400	338651700	306606750	326928575	246637225	14.1
Aldrin	371451800	374008400	350676450	383292800	292711688	10.3
Heptachlor epoxide	351136200	348211700	321037400	347347375	264094100	11.3
Endosulfan I	142780000	140387700	131415500	144812275	111059263	10.3
Dieldrin	297775800	285994400	265626600	292928463	222459488	11.3
4,4´-DDE	290206200	277681000	265947300	299751300	230312206	9.9
Endrin	117404200	110754150	99451525	106196338	79506000	14.1
Endosulfan II	284602100	259542200	236043750	271760600	199079150	13.5
4,4´-DDD	164749300	147869000	140403900	166584150	126061806	11.4
Endosulfan sulfate	215543600	212664500	193795600	217996725	159793581	12.2
4,4´-DDT	171102600	176901550	169210600	206216213	151668306	11.3
Methoxychlor	85411220	78607650	68451070	71461568	52515619	17.4
Endrin ketone	128905900	124888100	112318050	120862313	93105469	12.2
Endrin aldehyde	93765100	86521300	78262475	84771400	68858725	11.4
alpha-Chlordane	377567200	326494800	305153700	334932075	256262813	13.9
gamma-Chlordane	399983200	355111800	329450800	357533325	273867725	13.5
TCX (A)	180008200	166575600	148770500	155019400	116607163	15.5
DCB (A)	334044300	306260850	270632800	277009813	209591306	16.7

(A) Surrogate CFs and %RSD are measured from Standard Nixture A if two mixtures are used or from Standard mixture C if one misture is used.

(B) Surrogate CFs and %RSD are measured from Standard Nixture B if two mixtures are used. Leave entries blank if Standard mixture C if one misture is used.

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEMF6 Date Analyzed: 10/27/2014

Lab Sample ID (PEM): PEMF6 Time Analyzed: 16:05

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.764	10.714	10.814	0.010	0.010	0.0
beta-BHC	11.739	11.687	11.787	0.011	0.010	10.0
gamma-BHC (Lindane)	11.503	11.452	11.552	0.009	0.010	-10.0
Endrin	16.128	16.058	16.198	0.051	0.050	2.0
4,4´-DDT	16.791	16.722	16.862	0.096	0.100	-4.0
Methoxychlor	17.718	17.651	17.791	0.242	0.250	-3.2
TCX	9.397	9.347	9.447	0.018	0.020	-10.0
DCB	20.557	20.458	20.658	0.019	0.020	-5.0

4,4'-DDT %Breakdown (1): 0.0 Endrin %Breakdown (1): 0.0

Combined %Breakdown (1): 0.0

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEMF6 Date Analyzed: 10/27/2014

Lab Sample ID (PEM): PEMF6 Time Analyzed: 16:05

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.260	12.210	12.310	0.010	0.010	0.0
beta-BHC	13.280	13.230	13.330	0.011	0.010	10.0
gamma-BHC (Lindane)	13.093	13.043	13.143	0.010	0.010	0.0
Endrin	17.885	17.816	17.956	0.051	0.050	2.0
4,4´-DDT	18.636	18.567	18.707	0.106	0.100	6.0
Methoxychlor	19.906	19.838	19.978	0.244	0.250	-2.4
TCX	10.724	10.673	10.773	0.019	0.020	-5.0
DCB	23.188	23.089	23.289	0.019	0.020	-5.0

4,4'-DDT %Breakdown (1): 11.7 Endrin %Breakdown (1): 12.9

Combined %Breakdown (1): 24.6

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKEB Date Analyzed: 11/07/2014

Lab Sample ID (PIBLK): PIBLKEB Time Analyzed: 1:15

EPA Sample No. (PEM##): PEMEB Date Analyzed: 11/07/2014

Lab Sample ID (PEM): PEMEB Time Analyzed: 1:42

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	10.767	10.714	10.814	0.010	0.010	0.0
beta-BHC	11.747	11.687	11.787	0.011	0.010	10.0
gamma-BHC (Lindane)	11.504	11.452	11.552	0.010	0.010	0.0
Endrin	16.129	16.058	16.198	0.050	0.050	0.0
4,4´-DDT	16.797	16.722	16.862	0.096	0.100	-4.0
Methoxychlor	17.724	17.651	17.791	0.230	0.250	-8.0
TCX	9.399	9.347	9.447	0.019	0.020	-5.0
DCB	20.560	20.458	20.658	0.019	0.020	-5.0

4,4'-DDT %Breakdown (1): 9.2 Endrin %Breakdown (1): 9.9

Combined %Breakdown (1): 19.1

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKEB Date Analyzed: 11/07/2014

Lab Sample ID (PIBLK): PIBLKEB Time Analyzed: 1:15

EPA Sample No. (PEM##): PEMEB Date Analyzed: 11/07/2014

Lab Sample ID (PEM): PEMEB Time Analyzed: 1:42

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	12.265	12.210	12.310	0.010	0.010	0.0
beta-BHC	13.292	13.230	13.330	0.008	0.010	-20.0
gamma-BHC (Lindane)	13.098	13.043	13.143	0.010	0.010	0.0
Endrin	17.889	17.816	17.956	0.051	0.050	2.0
4,4´-DDT	18.643	18.567	18.707	0.103	0.100	3.0
Methoxychlor	19.912	19.838	19.978	0.230	0.250	-8.0
TCX	10.728	10.673	10.773	0.017	0.020	-15.0
DCB	23.194	23.089	23.289	0.017	0.020	-15.0

4,4'-DDT %Breakdown (1): 4.9 Endrin %Breakdown (1): 12.0

Combined %Breakdown (1): 16.9

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEMG6 Date Analyzed: 11/14/2014

Lab Sample ID (PEM): PEMG6 Time Analyzed: 14:30

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	3.692	3.641	3.741	0.010	0.010	0.0
beta-BHC	4.051	4.000	4.100	0.010	0.010	0.0
gamma-BHC (Lindane)	3.964	3.913	4.013	0.009	0.010	-10.0
Endrin	6.182	6.109	6.249	0.049	0.050	-2.0
4,4´-DDT	6.575	6.502	6.642	0.098	0.100	-2.0
Methoxychlor	7.087	7.015	7.155	0.246	0.250	-1.6
TCX	3.229	3.178	3.278	0.019	0.020	-5.0
DCB	8.415	8.314	8.514	0.018	0.020	-10.0

4,4'-DDT %Breakdown (1): 1.2 Endrin %Breakdown (1): 0.0

Combined %Breakdown (1): 1.2

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): Date Analyzed:

Lab Sample ID (PIBLK): Time Analyzed:

EPA Sample No. (PEM##): PEMG6 Date Analyzed: 11/14/2014

Lab Sample ID (PEM): PEMG6 Time Analyzed: 14:30

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	4.261	4.210	4.310	0.010	0.010	0.0
beta-BHC	4.693	4.643	4.743	0.011	0.010	10.0
gamma-BHC (Lindane)	4.618	4.567	4.667	0.010	0.010	0.0
Endrin	7.147	7.075	7.215	0.048	0.050	-4.0
4,4´-DDT	7.528	7.456	7.596	0.101	0.100	1.0
Methoxychlor	8.108	8.037	8.177	0.244	0.250	-2.4
TCX	3.681	3.631	3.731	0.019	0.020	-5.0
DCB	9.629	9.527	9.727	0.019	0.020	-5.0

4,4'-DDT %Breakdown (1): 2.1 Endrin %Breakdown (1): 6.8

Combined %Breakdown (1): 8.9

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): PIBLKGD Date Analyzed: 11/14/2014

Lab Sample ID (PIBLK): PIBLKGD Time Analyzed: 23:39

EPA Sample No. (PEM##): PEMGD Date Analyzed: 11/14/2014

Lab Sample ID (PEM): PEMGD Time Analyzed: 23:53

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	3.690	3.641	3.741	0.009	0.010	-10.0
beta-BHC	4.048	4.000	4.100	0.010	0.010	0.0
gamma-BHC (Lindane)	3.961	3.913	4.013	0.009	0.010	-10.0
Endrin	6.176	6.109	6.249	0.055	0.050	10.0
4,4´-DDT	6.568	6.502	6.642	0.086	0.100	-14.0
Methoxychlor	7.081	7.015	7.155	0.234	0.250	-6.4
TCX	3.226	3.178	3.278	0.018	0.020	-10.0
DCB	8.411	8.314	8.514	0.018	0.020	-10.0

4,4'-DDT %Breakdown (1): 10.6 Endrin %Breakdown (1): 0.0

Combined %Breakdown (1): 10.6

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7J - FORM VII PEST-1

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): PIBLKGD Date Analyzed: 11/14/2014

Lab Sample ID (PIBLK): PIBLKGD Time Analyzed: 23:39

EPA Sample No. (PEM##): PEMGD Date Analyzed: 11/14/2014

Lab Sample ID (PEM): PEMGD Time Analyzed: 23:53

PEM COMPOUND	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
alpha-BHC	4.260	4.210	4.310	0.010	0.010	0.0
beta-BHC	4.691	4.643	4.743	0.010	0.010	0.0
gamma-BHC (Lindane)	4.616	4.567	4.667	0.010	0.010	0.0
Endrin	7.145	7.075	7.215	0.047	0.050	-6.0
4,4´-DDT	7.525	7.456	7.596	0.082	0.100	-18.0 OK
Methoxychlor	8.105	8.037	8.177	0.231	0.250	-7.6
TCX	3.680	3.631	3.731	0.019	0.020	-5.0
DCB	9.625	9.527	9.727	0.016	0.020	-20.0

4,4'-DDT %Breakdown (1): 10.6 Endrin %Breakdown (1): 7.0

Combined %Breakdown (1): 17.6

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKFF Date Analyzed: 10/29/2014

Lab Sample ID (PIBLK): PIBLKFF Time Analyzed: 13:39

EPA Sample No. (INDC3##): INDC3FICV Date Analyzed: 10/29/2014

Lab Sample ID (INDC3): INDC3FICV Time Analyzed: 15:01

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CF	CF	%D
alpha-BHC	10.769	10.714	10.814	107181845	101264150	-5.5
beta-BHC	11.741	11.687	11.787	156983048	145005650	-7.6
delta-BHC	12.143	12.089	12.189	213424450	202612100	-5.1
gamma-BHC (Lindane)	11.506	11.452	11.552	336583663	342587500	1.8
Heptachlor	12.551	12.499	12.599	276178823	272330900	-1.4
Aldrin	13.189	13.138	13.238	321634415	295291400	-8.2
Heptachlor epoxide	14.434	14.364	14.504	302598290	294451750	-2.7
Endosulfan I	15.208	15.139	15.279	95804633	85837250	-10.4
Dieldrin	15.677	15.607	15.747	273735033	257569025	-5.9
4,4´-DDE	15.118	15.050	15.190	243937978	243523550	-0.2
Endrin	16.128	16.058	16.198	65311704	69404800	6.3
Endosulfan II	16.566	16.500	16.640	246189048	228822900	-7.1
4,4´-DDD	16.266	16.197	16.337	169244718	189675875	12.1
Endosulfan sulfate	18.154	18.085	18.225	202228630	162808900	-19.5
4,4´-DDT	16.792	16.722	16.862	194277373	174829725	-10.0
Methoxychlor	17.721	17.651	17.791	78861258	77799785	-1.3
Endrin ketone	18.693	18.623	18.763	78520903	70001525	-10.8
Endrin aldehyde	17.348	17.278	17.418	58126595	53220450	-8.4
alpha-Chlordane	14.953	14.883	15.023	308887888	274881100	-11.0
gamma-Chlordane	14.694	14.623	14.763	97286468	89628850	-7.9
TCX	9.400	9.347	9.447	323812280	289327800	-10.6
DCB	20.559	20.458	20.658	260879191	228542775	-12.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKFF Date Analyzed: 10/29/2014

Lab Sample ID (PIBLK): PIBLKFF Time Analyzed: 13:39

EPA Sample No. (INDC3##): INDC3FICV Date Analyzed: 10/29/2014

Lab Sample ID (INDC3): INDC3FICV Time Analyzed: 15:01

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.265	12.210	12.310	331828083	312873650	-5.7
beta-BHC	13.285	13.230	13.330	141202910	124058250	-12.1
delta-BHC	13.945	13.891	13.991	180358480	182002100	0.9
gamma-BHC (Lindane)	13.098	13.043	13.143	302500273	290923700	-3.8
Heptachlor	14.079	14.024	14.124	204824453	184866750	-9.7
Aldrin	14.781	14.728	14.828	313688518	277449550	-11.6
Heptachlor epoxide	15.958	15.886	16.026	267605773	246328100	-8.0
Endosulfan I	16.752	16.681	16.821	75723415	72888750	-3.7
Dieldrin	17.288	17.214	17.354	208274001	211323025	1.5
4,4´-DDE	16.918	16.848	16.988	233443713	232144100	-0.6
Endrin	17.888	17.816	17.956	43259406	51748775	19.6
Endosulfan II	18.293	18.223	18.363	215271154	200405125	-6.9
4,4´-DDD	18.036	17.965	18.105	118574048	115112250	-2.9
Endosulfan sulfate	19.460	19.390	19.530	172678400	145246050	-15.9
4,4´-DDT	18.639	18.567	18.707	132814911	129095075	-2.8
Methoxychlor	19.911	19.838	19.978	49644295	53289660	7.3
Endrin ketone	20.504	20.431	20.571	57785980	56929775	-1.5
Endrin aldehyde	18.933	18.860	19.000	42281271	42804600	1.2
alpha-Chlordane	16.622	16.549	16.689	285301383	245685150	-13.9
gamma-Chlordane	16.333	16.260	16.400	294130108	258489550	-12.1
TCX	10.728	10.673	10.773	84797790	80090350	-5.6
DCB	23.191	23.089	23.289	247192935	214467575	-13.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKEB Date Analyzed: 11/07/2014

Lab Sample ID (PIBLK): PIBLKEB Time Analyzed: 1:15

EPA Sample No. (INDC3##): INDC3EB Date Analyzed: 11/07/2014

Lab Sample ID (INDC3): INDC3EB Time Analyzed: 2:10

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.768	10.714	10.814	107181845	110201550	2.8
beta-BHC	11.747	11.687	11.787	156983048	168087200	7.1
delta-BHC	12.154	12.089	12.189	213424450	225802400	5.8
gamma-BHC (Lindane)	11.506	11.452	11.552	336583663	345203400	2.6
Heptachlor	12.552	12.499	12.599	276178823	291394250	5.5
Aldrin	13.191	13.138	13.238	321634415	328040050	2.0
Heptachlor epoxide	14.436	14.364	14.504	302598290	311238550	2.9
Endosulfan I	15.212	15.139	15.279	95804633	101366100	5.8
Dieldrin	15.681	15.607	15.747	273735033	271380900	-0.9
4,4´-DDE	15.130	15.050	15.190	243937978	219799725	-9.9
Endrin	16.132	16.058	16.198	65311704	66210075	1.4
Endosulfan II	16.575	16.500	16.640	246189048	249874750	1.5
4,4´-DDD	16.278	16.197	16.337	169244718	165367275	-2.3
Endosulfan sulfate	18.160	18.085	18.225	202228630	180867400	-10.6
4,4´-DDT	16.801	16.722	16.862	194277373	186573325	-4.0
Methoxychlor	17.729	17.651	17.791	78861258	70678330	-10.4
Endrin ketone	18.699	18.623	18.763	78520903	70838350	-9.8
Endrin aldehyde	17.353	17.278	17.418	58126595	50529750	-13.1
alpha-Chlordane	14.957	14.883	15.023	308887888	310987850	0.7
gamma-Chlordane	14.697	14.623	14.763	97286468	96562200	-0.7
TCX	9.399	9.347	9.447	323812280	329147150	1.6
DCB	20.565	20.458	20.658	260879191	238953100	-8.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKEB Date Analyzed: 11/07/2014

Lab Sample ID (PIBLK): PIBLKEB Time Analyzed: 1:15

EPA Sample No. (INDC3##): INDC3EB Date Analyzed: 11/07/2014

Lab Sample ID (INDC3): INDC3EB Time Analyzed: 2:10

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.267	12.210	12.310	331828083	334779250	0.9
beta-BHC	13.292	13.230	13.330	141202910	121255650	-14.1
delta-BHC	13.956	13.891	13.991	180358480	168444850	-6.6
gamma-BHC (Lindane)	13.100	13.043	13.143	302500273	311210450	2.9
Heptachlor	14.082	14.024	14.124	204824453	233985650	14.2
Aldrin	14.784	14.728	14.828	313688518	322914000	2.9
Heptachlor epoxide	15.962	15.886	16.026	267605773	271217550	1.3
Endosulfan I	16.757	16.681	16.821	75723415	76555850	1.1
Dieldrin	17.291	17.214	17.354	208274001	204157325	-2.0
4,4´-DDE	16.931	16.848	16.988	233443713	219515075	-6.0
Endrin	17.892	17.816	17.956	43259406	45139900	4.3
Endosulfan II	18.300	18.223	18.363	215271154	209286425	-2.8
4,4´-DDD	18.047	17.965	18.105	118574048	100342050	-15.4
Endosulfan sulfate	19.467	19.390	19.530	172678400	147043450	-14.8
4,4´-DDT	18.647	18.567	18.707	132814911	127298900	-4.2
Methoxychlor	19.918	19.838	19.978	49644295	43921610	-11.5
Endrin ketone	20.510	20.431	20.571	57785980	52397350	-9.3
Endrin aldehyde	18.938	18.860	19.000	42281271	37462825	-11.4
alpha-Chlordane	16.627	16.549	16.689	285301383	287902450	0.9
gamma-Chlordane	16.337	16.260	16.400	294130108	296773950	0.9
TCX	10.729	10.673	10.773	84797790	76039000	-10.3
DCB	23.202	23.089	23.289	247192935	218024475	-11.8

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKEC Date Analyzed: 11/07/2014

Lab Sample ID (PIBLK): PIBLKEC Time Analyzed: 8:07

EPA Sample No. (INDC3##): INDC3EC Date Analyzed: 11/07/2014

Lab Sample ID (INDC3): INDC3EC Time Analyzed: 8:34

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	10.762	10.714	10.814	107181845	111722300	4.2
beta-BHC	11.742	11.687	11.787	156983048	164586450	4.8
delta-BHC	12.149	12.089	12.189	213424450	227004350	6.4
gamma-BHC (Lindane)	11.499	11.452	11.552	336583663	348947150	3.7
Heptachlor	12.547	12.499	12.599	276178823	300931950	9.0
Aldrin	13.185	13.138	13.238	321634415	332010100	3.2
Heptachlor epoxide	14.432	14.364	14.504	302598290	317693300	5.0
Endosulfan I	15.206	15.139	15.279	95804633	103544000	8.1
Dieldrin	15.676	15.607	15.747	273735033	281179050	2.7
4,4´-DDE	15.124	15.050	15.190	243937978	222711375	-8.7
Endrin	16.127	16.058	16.198	65311704	66725400	2.2
Endosulfan II	16.569	16.500	16.640	246189048	254430850	3.3
4,4´-DDD	16.273	16.197	16.337	169244718	171515925	1.3
Endosulfan sulfate	18.156	18.085	18.225	202228630	189940775	-6.1
4,4´-DDT	16.797	16.722	16.862	194277373	191586750	-1.4
Methoxychlor	17.725	17.651	17.791	78861258	74578850	-5.4
Endrin ketone	18.694	18.623	18.763	78520903	72252750	-8.0
Endrin aldehyde	17.349	17.278	17.418	58126595	52309175	-10.0
alpha-Chlordane	14.952	14.883	15.023	308887888	313045450	1.3
gamma-Chlordane	14.692	14.623	14.763	97286468	97686250	0.4
TCX	9.394	9.347	9.447	323812280	335035300	3.5
DCB	20.561	20.458	20.658	260879191	302600600	16.0

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 10/27/2014 10/27/2014

EPA Sample No. (PIBLK##): PIBLKEC Date Analyzed: 11/07/2014

Lab Sample ID (PIBLK): PIBLKEC Time Analyzed: 8:07

EPA Sample No. (INDC3##): INDC3EC Date Analyzed: 11/07/2014

Lab Sample ID (INDC3): INDC3EC Time Analyzed: 8:34

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	12.262	12.210	12.310	331828083	339192300	2.2
beta-BHC	13.287	13.230	13.330	141202910	121433200	-14.0
delta-BHC	13.951	13.891	13.991	180358480	165920550	-8.0
gamma-BHC (Lindane)	13.095	13.043	13.143	302500273	318633650	5.3
Heptachlor	14.076	14.024	14.124	204824453	239654050	17.0
Aldrin	14.778	14.728	14.828	313688518	327990650	4.6
Heptachlor epoxide	15.956	15.886	16.026	267605773	278474950	4.1
Endosulfan I	16.752	16.681	16.821	75723415	76952850	1.6
Dieldrin	17.287	17.214	17.354	208274001	212030625	1.8
4,4´-DDE	16.927	16.848	16.988	233443713	219823475	-5.8
Endrin	17.887	17.816	17.956	43259406	45871075	6.0
Endosulfan II	18.296	18.223	18.363	215271154	215280325	0.0
4,4´-DDD	18.044	17.965	18.105	118574048	100109750	-15.6
Endosulfan sulfate	19.463	19.390	19.530	172678400	151283150	-12.4
4,4´-DDT	18.642	18.567	18.707	132814911	129515350	-2.5
Methoxychlor	19.913	19.838	19.978	49644295	45197535	-9.0
Endrin ketone	20.504	20.431	20.571	57785980	54581775	-5.5
Endrin aldehyde	18.934	18.860	19.000	42281271	38676125	-8.5
alpha-Chlordane	16.622	16.549	16.689	285301383	290711650	1.9
gamma-Chlordane	16.332	16.260	16.400	294130108	301480050	2.5
TCX	10.723	10.673	10.773	84797790	75977750	-10.4
DCB	23.196	23.089	23.289	247192935	216213850	-12.5

TCX = Tetrachloro-m-xylene

DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): PIBLKGD Date Analyzed: 11/14/2014

Lab Sample ID (PIBLK): PIBLKGD Time Analyzed: 23:39

EPA Sample No. (INDC3##): INDC3GD Date Analyzed: 11/15/2014

Lab Sample ID (INDC3): INDC3GD Time Analyzed: 0:07

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	3.691	3.641	3.741	121520568	121572150	0.0
beta-BHC	4.048	4.000	4.100	128559955	123180900	-4.2
delta-BHC	4.213	4.164	4.264	219023368	220371350	0.6
gamma-BHC (Lindane)	3.962	3.913	4.013	272318420	265296950	-2.6
Heptachlor	4.383	4.334	4.434	265832003	251236550	-5.5
Aldrin	4.664	4.615	4.715	257797175	246518300	-4.4
Heptachlor epoxide	5.253	5.184	5.324	239112823	229835750	-3.9
Endosulfan I	5.660	5.592	5.732	123060948	115252800	-6.3
Dieldrin	5.918	5.850	5.990	231454993	230091075	-0.6
4,4´-DDE	5.603	5.536	5.676	177925248	205726900	15.6
Endrin	6.176	6.109	6.249	80579851	88407850	9.7
Endosulfan II	6.438	6.371	6.511	192634201	198655950	3.1
4,4´-DDD	6.262	6.196	6.336	151457069	180451100	19.1
Endosulfan sulfate	7.285	7.217	7.357	173816263	158390000	-8.9
4,4´-DDT	6.568	6.502	6.642	177359184	146794250	-17.2
Methoxychlor	7.082	7.015	7.155	81014657	74414880	-8.1
Endrin ketone	7.543	7.475	7.615	94296770	93459450	-0.9
Endrin aldehyde	6.868	6.800	6.940	55845959	58225650	4.3
alpha-Chlordane	5.520	5.452	5.592	248703598	233698850	-6.0
gamma-Chlordane	5.384	5.317	5.457	114104665	110964500	-2.8
TCX	3.228	3.178	3.278	183320070	177271550	-3.3
DCB	8.412	8.314	8.514	235542083	210189125	-10.8

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): PIBLKGD Date Analyzed: 11/14/2014

Lab Sample ID (PIBLK): PIBLKGD Time Analyzed: 23:39

EPA Sample No. (INDC3##): INDC3GD Date Analyzed: 11/15/2014

Lab Sample ID (INDC3): INDC3GD Time Analyzed: 0:07

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	4.260	4.210	4.310	388378700	383433950	-1.3
beta-BHC	4.692	4.643	4.743	198983848	194153950	-2.4
delta-BHC	5.008	4.958	5.058	288282448	300403050	4.2
gamma-BHC (Lindane)	4.617	4.567	4.667	368901633	361329750	-2.1
Heptachlor	5.083	5.033	5.133	316997930	295673800	-6.7
Aldrin	5.442	5.392	5.492	354428228	333092750	-6.0
Heptachlor epoxide	6.081	6.012	6.152	326365355	301720000	-7.6
Endosulfan I	6.537	6.469	6.609	134090948	127753050	-4.7
Dieldrin	6.832	6.762	6.902	272956950	248909850	-8.8
4,4´-DDE	6.636	6.569	6.709	272779601	255390025	-6.4
Endrin	7.144	7.075	7.215	102662443	99466775	-3.1
Endosulfan II	7.350	7.281	7.421	250205560	220408350	-11.9
4,4´-DDD	7.231	7.164	7.304	149133631	144289350	-3.2
Endosulfan sulfate	7.895	7.826	7.966	199958801	177625525	-11.2
4,4´-DDT	7.525	7.456	7.596	175019854	133604725	-23.7
Methoxychlor	8.106	8.037	8.177	71289425	60686115	-14.9
Endrin ketone	8.363	8.294	8.434	116015966	108535275	-6.4
Endrin aldehyde	7.655	7.585	7.725	82435800	77940125	-5.5
alpha-Chlordane	6.464	6.395	6.535	320082118	281489800	-12.1
gamma-Chlordane	6.298	6.229	6.369	343189370	309124450	-9.9
TCX	3.680	3.631	3.731	153396173	154046300	0.4
DCB	9.625	9.527	9.727	279507814	234971925	-15.9

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): PIBLKGE Date Analyzed: 11/15/2014

Lab Sample ID (PIBLK): PIBLKGE Time Analyzed: 1:45

EPA Sample No. (INDC3##): INDC3GE Date Analyzed: 11/15/2014

Lab Sample ID (INDC3): INDC3GE Time Analyzed: 1:59

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	3.692	3.641	3.741	121520568	124544050	2.5
beta-BHC	4.050	4.000	4.100	128559955	126428900	-1.7
delta-BHC	4.214	4.164	4.264	219023368	221389750	1.1
gamma-BHC (Lindane)	3.964	3.913	4.013	272318420	271362750	-0.4
Heptachlor	4.385	4.334	4.434	265832003	260119750	-2.1
Aldrin	4.665	4.615	4.715	257797175	253715350	-1.6
Heptachlor epoxide	5.254	5.184	5.324	239112823	238117700	-0.4
Endosulfan I	5.662	5.592	5.732	123060948	121341300	-1.4
Dieldrin	5.920	5.850	5.990	231454993	238560300	3.1
4,4´-DDE	5.604	5.536	5.676	177925248	210368425	18.2
Endrin	6.178	6.109	6.249	80579851	90467175	12.3
Endosulfan II	6.440	6.371	6.511	192634201	202691650	5.2
4,4´-DDD	6.264	6.196	6.336	151457069	178740225	18.0
Endosulfan sulfate	7.286	7.217	7.357	173816263	166731825	-4.1
4,4´-DDT	6.570	6.502	6.642	177359184	166262525	-6.3
Methoxychlor	7.084	7.015	7.155	81014657	81495195	0.6
Endrin ketone	7.544	7.475	7.615	94296770	98546025	4.5
Endrin aldehyde	6.870	6.800	6.940	55845959	60654900	8.6
alpha-Chlordane	5.522	5.452	5.592	248703598	243722950	-2.0
gamma-Chlordane	5.387	5.317	5.457	114104665	115601550	1.3
TCX	3.229	3.178	3.278	183320070	182864800	-0.2
DCB	8.414	8.314	8.514	235542083	224196100	-4.8

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7L - FORM VII PEST-3

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/14/2014 11/14/2014

EPA Sample No. (PIBLK##): PIBLKGE Date Analyzed: 11/15/2014

Lab Sample ID (PIBLK): PIBLKGE Time Analyzed: 1:45

EPA Sample No. (INDC3##): INDC3GE Date Analyzed: 11/15/2014

Lab Sample ID (INDC3): INDC3GE Time Analyzed: 1:59

INDIVIDUAL MIX C COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
alpha-BHC	4.262	4.210	4.310	388378700	393322700	1.3
beta-BHC	4.694	4.643	4.743	198983848	199861000	0.4
delta-BHC	5.009	4.958	5.058	288282448	309403750	7.3
gamma-BHC (Lindane)	4.618	4.567	4.667	368901633	373343150	1.2
Heptachlor	5.084	5.033	5.133	316997930	317418450	0.1
Aldrin	5.444	5.392	5.492	354428228	354547700	0.0
Heptachlor epoxide	6.083	6.012	6.152	326365355	323887600	-0.8
Endosulfan I	6.539	6.469	6.609	134090948	137740500	2.7
Dieldrin	6.833	6.762	6.902	272956950	270223100	-1.0
4,4´-DDE	6.637	6.569	6.709	272779601	277711550	1.8
Endrin	7.145	7.075	7.215	102662443	104637275	1.9
Endosulfan II	7.351	7.281	7.421	250205560	245176875	-2.0
4,4´-DDD	7.233	7.164	7.304	149133631	163085800	9.4
Endosulfan sulfate	7.896	7.826	7.966	199958801	198555450	-0.7
4,4´-DDT	7.526	7.456	7.596	175019854	160351450	-8.4
Methoxychlor	8.107	8.037	8.177	71289425	69031080	-3.2
Endrin ketone	8.364	8.294	8.434	116015966	114243250	-1.5
Endrin aldehyde	7.656	7.585	7.725	82435800	82110900	-0.4
alpha-Chlordane	6.466	6.395	6.535	320082118	311962000	-2.5
gamma-Chlordane	6.299	6.229	6.369	343189370	331557350	-3.4
TCX	3.682	3.631	3.731	153396173	156249200	1.9
DCB	9.627	9.527	9.727	279507814	256601075	-8.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

4E - FORM IV PEST

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: E6B4103F.D / E6B4103R.D Lab Sample ID: MB-79843

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 11/04/2014

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

Date Analyzed (1): 11/07/2014 Date Analyzed (2): 11/07/2014

Time Analyzed (1): 5:50 Time Analyzed (2): 5:50

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-79843	LCS-79843	11/07/2014	11/07/2014
02	LCSD-79843	LCSD-79843	11/07/2014	11/07/2014
03	MW03-16I-NWG-102814	N2027-04C	11/07/2014	11/07/2014
04	FD03-102814	N2027-06A	11/07/2014	11/07/2014

COMMENTS:

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79843

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B4103F.D/E6B4103R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 11/04/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/07/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

4E - FORM IV PEST

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: E6B4559F.D / E6B4559R.D Lab Sample ID: MB-79912

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 11/06/2014

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

Date Analyzed (1): 11/15/2014 Date Analyzed (2): 11/15/2014

Time Analyzed (1): 0:49 Time Analyzed (2): 0:49

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-79912	LCS-79912	11/15/2014	11/15/2014
02	LCSD-79912	LCSD-79912	11/15/2014	11/15/2014
03	FB03-103014	N2027-17B	11/15/2014	11/15/2014

COMMENTS:

1G - FORM I PEST

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79912

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6B4559F.D/E6B4559R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 11/06/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/15/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	0.013	U	0.0018	0.013	0.050
319-85-7	beta-BHC	0.013	U	0.0020	0.013	0.050
319-86-8	delta-BHC	0.013	U	0.0027	0.013	0.050
58-89-9	gamma-BHC (Lindane)	0.013	U	0.0019	0.013	0.050
76-44-8	Heptachlor	0.013	U	0.0039	0.013	0.050
309-00-2	Aldrin	0.013	U	0.0043	0.013	0.050
1024-57-3	Heptachlor epoxide	0.013	U	0.0028	0.013	0.050
959-98-8	Endosulfan I	0.013	U	0.0029	0.013	0.050
60-57-1	Dieldrin	0.025	U	0.0056	0.025	0.10
72-55-9	4,4´-DDE	0.025	U	0.0056	0.025	0.10
72-20-8	Endrin	0.025	U	0.0035	0.025	0.10
33213-65-9	Endosulfan II	0.025	U	0.0031	0.025	0.10
72-54-8	4,4´-DDD	0.025	U	0.0064	0.025	0.10
1031-07-8	Endosulfan sulfate	0.025	U	0.0045	0.025	0.10
50-29-3	4,4´-DDT	0.025	U	0.0070	0.025	0.10
72-43-5	Methoxychlor	0.13	U	0.031	0.13	0.50
53494-70-5	Endrin ketone	0.025	U	0.0046	0.025	0.10
7421-93-4	Endrin aldehyde	0.025	U	0.015	0.025	0.10
5103-71-9	alpha-Chlordane	0.013	U	0.0024	0.013	0.050
5103-74-2	gamma-Chlordane	0.013	U	0.0026	0.013	0.050
8001-35-2	Toxaphene	0.50	U	0.14	0.50	5.0

2N - FORM II PEST-1

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC	#	TCX 2 %REC	#	DCB 1 %REC	#	DCB 2 %REC	#	OTHER (1)	OTHER (2)	TOT OUT
01	MB-79843	73		68		72		62				0
02	LCS-79843	71		65		80		60				0
03	LCSD-79843	68		63		69		59				0
04	MW03-16I-NWG-102814	64		58		38		30				0
05	FD03-102814	66		62		43		35				0
06	MB-79912	70		71		67		63				0
07	LCS-79912	69		70		67		67				0
08	LCSD-79912	69		69		66		66				0
09	FB03-103014	67		67		49		46				0

	QC LIMITS
TCX = Tetrachloro-m-xylene	(25-140)
DCB = Decachlorobiphenyl	(30-135)

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

som14.10.02.1616

SW846

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79843 LCS Lot No.: A092276

Date Extracted: 11/04/2014 Date Analyzed (1): 11/07/2014

Instrument ID (1): E6 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
alpha-BHC	0.2000	0.1602	80		60-130
beta-BHC	0.2000	0.1723	86		65-125
delta-BHC	0.2000	0.2206	110		45-135
gamma-BHC (Lindane)	0.2000	0.1601	80		25-135
Heptachlor	0.2000	0.1693	85		40-130
Aldrin	0.2000	0.1653	83		25-140
Heptachlor epoxide	0.2000	0.1549	77		60-130
Endosulfan I	0.2000	0.1515	76		50-110
Dieldrin	0.4000	0.3395	85		60-130
4,4´-DDE	0.4000	0.3096	77		35-140
Endrin	0.4000	0.3291	82		55-135
Endosulfan II	0.4000	0.3124	78		30-130
4,4´-DDD	0.4000	0.3208	80		25-150
Endosulfan sulfate	0.4000	0.3451	86		55-135
4,4´-DDT	0.4000	0.3039	76		45-140
Methoxychlor	2.0000	1.5268	76		55-150
Endrin ketone	0.4000	0.3012	75		75-125
Endrin aldehyde	0.4000	0.3213	80		55-135
alpha-Chlordane	0.2000	0.1559	78		65-125
gamma-Chlordane	0.2000	0.1551	78		60-125

Instrument ID (2): E6 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/07/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
alpha-BHC	0.2000	0.1593	80		60-130
beta-BHC	0.2000	0.1477	74		65-125
delta-BHC	0.2000	0.1916	96		45-135
gamma-BHC (Lindane)	0.2000	0.1649	82		25-135

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79843 LCS Lot No.: A092276

Date Extracted: 11/04/2014 Date Analyzed (1): 11/07/2014

Heptachlor	0.2000	0.1714	86	40-130
Aldrin	0.2000	0.1461	73	25-140
Heptachlor epoxide	0.2000	0.1570	79	60-130
Endosulfan I	0.2000	0.1590	79	50-110
Dieldrin	0.4000	0.3173	79	60-130
4,4´-DDE	0.4000	0.2989	75	35-140
Endrin	0.4000	0.3506	88	55-135
Endosulfan II	0.4000	0.3063	77	30-130
4,4´-DDD	0.4000	0.2917	73	25-150
Endosulfan sulfate	0.4000	0.3031	76	55-135
4,4´-DDT	0.4000	0.3049	76	45-140
Methoxychlor	2.0000	1.4650	73	55-150
Endrin ketone	0.4000	0.3062	77	75-125
Endrin aldehyde	0.4000	0.3275	82	55-135
alpha-Chlordane	0.2000	0.1541	77	65-125
gamma-Chlordane	0.2000	0.1525	76	60-125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 40 outside limits.

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3
WATER PESTICIDE LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79912 LCS Lot No.: A092276

Date Extracted: 11/06/2014 Date Analyzed (1): 11/15/2014

Instrument ID (1): E6 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
alpha-BHC	0.2000	0.1561	78		60-130
beta-BHC	0.2000	0.1551	78		65-125
delta-BHC	0.2000	0.1625	81		45-135
gamma-BHC (Lindane)	0.2000	0.1506	75		25-135
Heptachlor	0.2000	0.1428	71		40-130
Aldrin	0.2000	0.1511	76		25-140
Heptachlor epoxide	0.2000	0.1572	79		60-130
Endosulfan I	0.2000	0.1541	77		50-110
Dieldrin	0.4000	0.3211	80		60-130
4,4´-DDE	0.4000	0.3739	93		35-140
Endrin	0.4000	0.3519	88		55-135
Endosulfan II	0.4000	0.3428	86		30-130
4,4´-DDD	0.4000	0.4173	104		25-150
Endosulfan sulfate	0.4000	0.2946	74		55-135
4,4´-DDT	0.4000	0.2055	51		45-140
Methoxychlor	2.0000	1.3119	66		55-150
Endrin ketone	0.4000	0.3092	77		75-125
Endrin aldehyde	0.4000	0.3611	90		55-135
alpha-Chlordane	0.2000	0.1521	76		65-125
gamma-Chlordane	0.2000	0.1576	79		60-125

Instrument ID (2): E6 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/15/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
alpha-BHC	0.2000	0.1583	79		60-130
beta-BHC	0.2000	0.1543	77		65-125
delta-BHC	0.2000	0.1750	88		45-135
gamma-BHC (Lindane)	0.2000	0.1555	78		25-135

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79912 LCS Lot No.: A092276

Date Extracted: 11/06/2014 Date Analyzed (1): 11/15/2014

Heptachlor	0.2000	0.1434	72	40-130
Aldrin	0.2000	0.1551	78	25-140
Heptachlor epoxide	0.2000	0.1572	79	60-130
Endosulfan I	0.2000	0.1569	78	50-110
Dieldrin	0.4000	0.3055	76	60-130
4,4´-DDE	0.4000	0.3086	77	35-140
Endrin	0.4000	0.3157	79	55-135
Endosulfan II	0.4000	0.3222	81	30-130
4,4´-DDD	0.4000	0.3772	94	25-150
Endosulfan sulfate	0.4000	0.3516	88	55-135
4,4´-DDT	0.4000	0.2095	52	45-140
Methoxychlor	2.0000	1.3665	68	55-150
Endrin ketone	0.4000	0.3010	75	75-125
Endrin aldehyde	0.4000	0.3419	85	55-135
alpha-Chlordane	0.2000	0.1467	73	65-125
gamma-Chlordane	0.2000	0.1528	76	60-125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 40 outside limits.

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79843 LCS Lot No.: A092276

Date Extracted: 11/04/2014 Date Analyzed (1): 11/07/2014

Instrument ID (1): E6 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
alpha-BHC	0.2000	0.1599	80		60-130	0		30
beta-BHC	0.2000	0.1650	82		65-125	5.0		30
delta-BHC	0.2000	0.2181	109		45-135	1.0		30
gamma-BHC (Lindane)	0.2000	0.1578	79		25-135	1.0		30
Heptachlor	0.2000	0.1648	82		40-130	4.0		30
Aldrin	0.2000	0.1642	82		25-140	1.0		30
Heptachlor epoxide	0.2000	0.1556	78		60-130	1.0		30
Endosulfan I	0.2000	0.1520	76		50-110	0		30
Dieldrin	0.4000	0.3275	82		60-130	4.0		30
4,4´-DDE	0.4000	0.3062	77		35-140	0		30
Endrin	0.4000	0.3305	83		55-135	1.0		30
Endosulfan II	0.4000	0.3090	77		30-130	1.0		30
4,4´-DDD	0.4000	0.3134	78		25-150	3.0		30
Endosulfan sulfate	0.4000	0.3122	78		55-135	10		30
4,4´-DDT	0.4000	0.2910	73		45-140	4.0		30
Methoxychlor	2.0000	1.4714	74		55-150	3.0		30
Endrin ketone	0.4000	0.3012	75		75-125	0		30
Endrin aldehyde	0.4000	0.3211	80		55-135	0		30
alpha-Chlordane	0.2000	0.1539	77		65-125	1.0		30
gamma-Chlordane	0.2000	0.1552	78		60-125	0		30

Instrument ID (2): E6 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/07/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
alpha-BHC	0.2000	0.1583	79		60-130	1.0		30
beta-BHC	0.2000	0.1451	73		65-125	1.0		30
delta-BHC	0.2000	0.1915	96		45-135	0		30
gamma-BHC (Lindane)	0.2000	0.1646	82		25-135	0		30

COMMENTS:

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79843 LCS Lot No.: A092276

Date Extracted: 11/04/2014 Date Analyzed (1): 11/07/2014

Heptachlor	0.2000	0.1708	85	40-130	1.0	30
Aldrin	0.2000	0.1501	75	25-140	3.0	30
Heptachlor epoxide	0.2000	0.1576	79	60-130	0	30
Endosulfan I	0.2000	0.1567	78	50-110	1.0	30
Dieldrin	0.4000	0.3191	80	60-130	1.0	30
4,4´-DDE	0.4000	0.2962	74	35-140	1.0	30
Endrin	0.4000	0.3505	88	55-135	0	30
Endosulfan II	0.4000	0.3069	77	30-130	0	30
4,4´-DDD	0.4000	0.2855	71	25-150	3.0	30
Endosulfan sulfate	0.4000	0.2978	74	55-135	3.0	30
4,4´-DDT	0.4000	0.2976	74	45-140	3.0	30
Methoxychlor	2.0000	1.4470	72	55-150	1.0	30
Endrin ketone	0.4000	0.3062	77	75-125	0	30
Endrin aldehyde	0.4000	0.3289	82	55-135	0	30
alpha-Chlordane	0.2000	0.1544	77	65-125	0	30
gamma-Chlordane	0.2000	0.1532	77	60-125	1.0	30

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 40 outside limits.

RPD: 0 out of 40 outside limits.

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79912 LCS Lot No.: A092276

Date Extracted: 11/06/2014 Date Analyzed (1): 11/15/2014

Instrument ID (1): E6 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
alpha-BHC	0.2000	0.1589	79		60-130	1.0		30
beta-BHC	0.2000	0.1568	78		65-125	0		30
delta-BHC	0.2000	0.1638	82		45-135	1.0		30
gamma-BHC (Lindane)	0.2000	0.1521	76		25-135	1.0		30
Heptachlor	0.2000	0.1456	73		40-130	3.0		30
Aldrin	0.2000	0.1522	76		25-140	0		30
Heptachlor epoxide	0.2000	0.1581	79		60-130	0		30
Endosulfan I	0.2000	0.1556	78		50-110	1.0		30
Dieldrin	0.4000	0.3228	81		60-130	1.0		30
4,4´-DDE	0.4000	0.3781	95		35-140	2.0		30
Endrin	0.4000	0.3536	88		55-135	0		30
Endosulfan II	0.4000	0.3544	89		30-130	3.0		30
4,4´-DDD	0.4000	0.4163	104		25-150	0		30
Endosulfan sulfate	0.4000	0.2989	75		55-135	1.0		30
4,4´-DDT	0.4000	0.2288	57		45-140	11		30
Methoxychlor	2.0000	1.3712	69		55-150	4.0		30
Endrin ketone	0.4000	0.3148	79		75-125	3.0		30
Endrin aldehyde	0.4000	0.3652	91		55-135	1.0		30
alpha-Chlordane	0.2000	0.1548	77		65-125	1.0		30
gamma-Chlordane	0.2000	0.1581	79		60-125	0		30

Instrument ID (2): E6 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/15/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
alpha-BHC	0.2000	0.1611	81		60-130	3.0		30
beta-BHC	0.2000	0.1561	78		65-125	1.0		30
delta-BHC	0.2000	0.1758	88		45-135	0		30
gamma-BHC (Lindane)	0.2000	0.1577	79		25-135	1.0		30

COMMENTS:

som14.10.02.1616

3L - FORM III PEST-3

WATER PESTICIDE LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79912 LCS Lot No.: A092276

Date Extracted: 11/06/2014 Date Analyzed (1): 11/15/2014

Heptachlor	0.2000	0.1463	73	40-130	1.0	30
Aldrin	0.2000	0.1570	79	25-140	1.0	30
Heptachlor epoxide	0.2000	0.1572	79	60-130	0	30
Endosulfan I	0.2000	0.1594	80	50-110	3.0	30
Dieldrin	0.4000	0.3080	77	60-130	1.0	30
4,4´-DDE	0.4000	0.3120	78	35-140	1.0	30
Endrin	0.4000	0.3206	80	55-135	1.0	30
Endosulfan II	0.4000	0.3246	81	30-130	0	30
4,4´-DDD	0.4000	0.3775	94	25-150	0	30
Endosulfan sulfate	0.4000	0.3523	88	55-135	0	30
4,4´-DDT	0.4000	0.2229	56	45-140	7.0	30
Methoxychlor	2.0000	1.4277	71	55-150	4.0	30
Endrin ketone	0.4000	0.3055	76	75-125	1.0	30
Endrin aldehyde	0.4000	0.3464	87	55-135	2.0	30
alpha-Chlordane	0.2000	0.1491	75	65-125	3.0	30
gamma-Chlordane	0.2000	0.1541	77	60-125	1.0	30

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 40 outside limits.

RPD: 0 out of 40 outside limits.

COMMENTS:

som14.10.02.1616

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCS-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79843 Date(s) Analyzed: 11/07/2014 11/07/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
	1	10.764	10.714	10.814	0.16	
alpha-BHC	2	12.263	12.210	12.310	0.16	0.5
	1	11.742	11.687	11.787	0.17	
beta-BHC	2	13.288	13.230	13.330	0.15	16.7
	1	12.147	12.089	12.189	0.22	
delta-BHC	2	13.948	13.891	13.991	0.19	15.1
	1	11.502	11.452	11.552	0.16	
gamma-BHC (Lindane)	2	13.096	13.043	13.143	0.16	3.0
	1	12.548	12.499	12.599	0.17	
Heptachlor	2	14.078	14.024	14.124	0.17	1.3
	1	13.187	13.138	13.238	0.17	
Aldrin	2	14.781	14.728	14.828	0.15	13.1
	1	14.433	14.364	14.504	0.15	
Heptachlor epoxide	2	15.957	15.886	16.026	0.16	1.4
	1	15.207	15.139	15.279	0.15	
Endosulfan I	2	16.752	16.681	16.821	0.16	4.9
	1	15.677	15.607	15.747	0.34	
Dieldrin	2	17.288	17.214	17.354	0.32	7.0
	1	15.119	15.050	15.190	0.31	
4,4´-DDE	2	16.922	16.848	16.988	0.30	3.6
	1	16.128	16.058	16.198	0.33	
Endrin	2	17.888	17.816	17.956	0.35	6.5
	1	16.568	16.500	16.640	0.31	
Endosulfan II	2	18.296	18.223	18.363	0.31	2.0
	1	16.269	16.197	16.337	0.32	
4,4´-DDD	2	18.039	17.965	18.105	0.29	10
	1	18.155	18.085	18.225	0.35	
Endosulfan sulfate	2	19.463	19.390	19.530	0.30	13.9
	1	16.794	16.722	16.862	0.30	
4,4´-DDT	2	18.642	18.567	18.707	0.30	0.3
	1	17.722	17.651	17.791	1.5	
Methoxychlor	2	19.913	19.838	19.978	1.5	4.2
	1	18.694	18.623	18.763	0.30	
Endrin ketone	2	20.505	20.431	20.571	0.31	1.7

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCS-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79843 Date(s) Analyzed: 11/07/2014 11/07/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

Endrin aldehyde	1	17.349	17.278	17.418	0.32	
	2	18.934	18.860	19.000	0.33	1.9
alpha-Chlordane	1	14.952	14.883	15.023	0.16	
	2	16.622	16.549	16.689	0.15	1.1
gamma-Chlordane	1	14.693	14.623	14.763	0.16	
	2	16.333	16.260	16.400	0.15	1.7

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCS-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79912 Date(s) Analyzed: 11/15/2014 11/15/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
	1	3.691	3.641	3.741	0.16	
alpha-BHC	2	4.260	4.210	4.310	0.16	1.4
	1	4.049	4.000	4.100	0.16	
beta-BHC	2	4.692	4.643	4.743	0.15	0.5
	1	4.213	4.164	4.264	0.16	
delta-BHC	2	5.007	4.958	5.058	0.18	7.7
	1	3.963	3.913	4.013	0.15	
gamma-BHC (Lindane)	2	4.617	4.567	4.667	0.16	3.2
	1	4.384	4.334	4.434	0.14	
Heptachlor	2	5.083	5.033	5.133	0.14	0.4
	1	4.664	4.615	4.715	0.15	
Aldrin	2	5.442	5.392	5.492	0.16	2.6
	1	5.253	5.184	5.324	0.16	
Heptachlor epoxide	2	6.082	6.012	6.152	0.16	0
	1	5.660	5.592	5.732	0.15	
Endosulfan I	2	6.538	6.469	6.609	0.16	1.8
	1	5.919	5.850	5.990	0.32	
Dieldrin	2	6.832	6.762	6.902	0.31	5.1
	1	5.603	5.536	5.676	0.37	
4,4´-DDE	2	6.636	6.569	6.709	0.31	21.2
	1	6.177	6.109	6.249	0.35	
Endrin	2	7.144	7.075	7.215	0.32	11.5
	1	6.439	6.371	6.511	0.34	
Endosulfan II	2	7.350	7.281	7.421	0.32	6.4
	1	6.262	6.196	6.336	0.42	
4,4´-DDD	2	7.231	7.164	7.304	0.38	10.6
	1	7.284	7.217	7.357	0.29	
Endosulfan sulfate	2	7.894	7.826	7.966	0.35	19.4
	1	6.569	6.502	6.642	0.21	
4,4´-DDT	2	7.524	7.456	7.596	0.21	2.0
	1	7.083	7.015	7.155	1.3	
Methoxychlor	2	8.105	8.037	8.177	1.4	4.2
	1	7.543	7.475	7.615	0.31	
Endrin ketone	2	8.363	8.294	8.434	0.30	2.7

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCS-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79912 Date(s) Analyzed: 11/15/2014 11/15/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

Endrin aldehyde	1	6.869	6.800	6.940	0.36	
	2	7.654	7.585	7.725	0.34	5.6
alpha-Chlordane	1	5.520	5.452	5.592	0.15	
	2	6.464	6.395	6.535	0.15	3.7
gamma-Chlordane	1	5.384	5.317	5.457	0.16	
	2	6.298	6.229	6.369	0.15	3.1

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCSD-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79843 Date(s) Analyzed: 11/07/2014 11/07/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
	1	10.762	10.714	10.814	0.16	
alpha-BHC	2	12.261	12.210	12.310	0.16	1.0
	1	11.741	11.687	11.787	0.16	
beta-BHC	2	13.286	13.230	13.330	0.15	13.7
	1	12.147	12.089	12.189	0.22	
delta-BHC	2	13.947	13.891	13.991	0.19	13.8
	1	11.501	11.452	11.552	0.16	
gamma-BHC (Lindane)	2	13.094	13.043	13.143	0.16	4.4
	1	12.546	12.499	12.599	0.16	
Heptachlor	2	14.075	14.024	14.124	0.17	3.7
	1	13.185	13.138	13.238	0.16	
Aldrin	2	14.777	14.728	14.828	0.15	9.4
	1	14.431	14.364	14.504	0.16	
Heptachlor epoxide	2	15.955	15.886	16.026	0.16	1.3
	1	15.206	15.139	15.279	0.15	
Endosulfan I	2	16.751	16.681	16.821	0.16	3.1
	1	15.675	15.607	15.747	0.33	
Dieldrin	2	17.286	17.214	17.354	0.32	2.6
	1	15.118	15.050	15.190	0.31	
4,4´-DDE	2	16.921	16.848	16.988	0.30	3.4
	1	16.126	16.058	16.198	0.33	
Endrin	2	17.887	17.816	17.956	0.35	6.1
	1	16.568	16.500	16.640	0.31	
Endosulfan II	2	18.296	18.223	18.363	0.31	0.7
	1	16.269	16.197	16.337	0.31	
4,4´-DDD	2	18.041	17.965	18.105	0.29	9.8
	1	18.156	18.085	18.225	0.31	
Endosulfan sulfate	2	19.462	19.390	19.530	0.30	4.9
	1	16.793	16.722	16.862	0.29	
4,4´-DDT	2	18.641	18.567	18.707	0.30	2.3
	1	17.722	17.651	17.791	1.5	
Methoxychlor	2	19.912	19.838	19.978	1.4	1.7
	1	18.694	18.623	18.763	0.30	
Endrin ketone	2	20.505	20.431	20.571	0.31	1.7

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCSD-79843

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79843 Date(s) Analyzed: 11/07/2014 11/07/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

Endrin aldehyde	1	17.348	17.278	17.418	0.32	
	2	18.934	18.860	19.000	0.33	2.4
alpha-Chlordane	1	14.951	14.883	15.023	0.15	
	2	16.621	16.549	16.689	0.15	0.3
gamma-Chlordane	1	14.691	14.623	14.763	0.16	
	2	16.332	16.260	16.400	0.15	1.3

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCSD-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79912 Date(s) Analyzed: 11/15/2014 11/15/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
	1	3.691	3.641	3.741	0.16	
alpha-BHC	2	4.260	4.210	4.310	0.16	1.4
	1	4.048	4.000	4.100	0.16	
beta-BHC	2	4.692	4.643	4.743	0.16	0.5
	1	4.213	4.164	4.264	0.16	
delta-BHC	2	5.008	4.958	5.058	0.18	7.3
	1	3.963	3.913	4.013	0.15	
gamma-BHC (Lindane)	2	4.617	4.567	4.667	0.16	3.7
	1	4.383	4.334	4.434	0.15	
Heptachlor	2	5.083	5.033	5.133	0.15	0.5
	1	4.663	4.615	4.715	0.15	
Aldrin	2	5.443	5.392	5.492	0.16	3.2
	1	5.253	5.184	5.324	0.16	
Heptachlor epoxide	2	6.081	6.012	6.152	0.16	0.5
	1	5.661	5.592	5.732	0.16	
Endosulfan I	2	6.538	6.469	6.609	0.16	2.5
	1	5.918	5.850	5.990	0.32	
Dieldrin	2	6.832	6.762	6.902	0.31	4.8
	1	5.603	5.536	5.676	0.38	
4,4´-DDE	2	6.636	6.569	6.709	0.31	21.2
	1	6.177	6.109	6.249	0.35	
Endrin	2	7.144	7.075	7.215	0.32	10.3
	1	6.438	6.371	6.511	0.35	
Endosulfan II	2	7.350	7.281	7.421	0.32	9.2
	1	6.262	6.196	6.336	0.42	
4,4´-DDD	2	7.231	7.164	7.304	0.38	10.3
	1	7.284	7.217	7.357	0.30	
Endosulfan sulfate	2	7.895	7.826	7.966	0.35	17.9
	1	6.568	6.502	6.642	0.23	
4,4´-DDT	2	7.524	7.456	7.596	0.22	2.6
	1	7.082	7.015	7.155	1.4	
Methoxychlor	2	8.105	8.037	8.177	1.4	4.1
	1	7.543	7.475	7.615	0.31	
Endrin ketone	2	8.363	8.294	8.434	0.31	3.0

10A - FORM X PEST-1
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.
LCSD-79912

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79912 Date(s) Analyzed: 11/15/2014 11/15/2014

Instrument ID (1): E6 Instrument ID (2): E6

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

Endrin aldehyde	1	6.868	6.800	6.940	0.37	
	2	7.654	7.585	7.725	0.35	5.4
alpha-Chlordane	1	5.520	5.452	5.592	0.15	
	2	6.464	6.395	6.535	0.15	3.9
gamma-Chlordane	1	5.385	5.317	5.457	0.16	
	2	6.298	6.229	6.369	0.15	2.6

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 8082A, PCB by GC-ECD

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times with the following exceptions:

FB03-103014 (N2027-17BRE) exceed by 7 Days

Please note this sample was initially extracted within method hold time. It was re-extracted due to batch QC failures. Both sets of data are included in this report.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8082A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: E2
Instrument Type: GC-ECD
Description: HP5890 II +
Manufacturer: Hewlett-Packard
Model: 5890
GC Column used: 30 m X 0.53 mm ID [0.50 um thickness] CLPPest capillary column.
GC Column used: 30 m X 0.53 mm ID [0.42 um thickness] CLPPestII capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits with the following exceptions. Please note that the acceptance criteria allow one surrogate recovery outside of the QC limits per fraction.

(LCS-79913), recovery is below criteria for Decachlorobiphenyl on rear column at 16% with criteria of (40-135), Decachlorobiphenyl on front column at 16% with criteria of (40-135), Tetrachloro-m-xylene on rear column at 24% with criteria of (34-137) and Tetrachloro-m-xylene on front column at 23% with criteria of (34-137).

MW03-16I-NWG-102814 (N2027-04C), recovery is below criteria for Decachlorobiphenyl on rear column at 34% with criteria of (40-135) and Decachlorobiphenyl on front column at 34% with criteria of (40-135).

FD03-102814 (N2027-06A), recovery is below criteria for Decachlorobiphenyl on rear column at 39% with criteria of (40-135) and Decachlorobiphenyl on front column at 40% with criteria of (40-135).

FB03-103014 (N2027-17B), recovery is below criteria for Decachlorobiphenyl on rear column at 23% with criteria of (40-135) and Decachlorobiphenyl on front column at 23% with criteria of (40-135).

FB03-103014 (N2027-17BRE), recovery is below criteria for Decachlorobiphenyl on rear column at 38% with criteria of (40-135) and Decachlorobiphenyl on front column at 39% with criteria of (40-135).

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits with the following exceptions. Please note that most test procedures allow for several compounds outside of the QC limits for the LCS, although this may indicate a bias for this specific compound.

LCS-79913 in batch 79913, recovery is below criteria for Aroclor-1260 on rear column at 25% with criteria of (30-145) and Aroclor-1260 on front column at 26% with criteria of (30-145).

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

E. Dilutions:

No sample in this SDG required analysis at dilution.

F. Samples:

The lower concentration between the primary and confirmatory GC column concentrations is reported due to the presence of interferences unless otherwise indicated. P flags are assigned to compounds when D% between the two columns are greater than 40%.

No other unusual occurrences were noted during sample analysis.

G. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

· M1 peak tailing or fronting

· M2 peak co-elution
· M3 rising or falling baseline
· M4 retention time shift
· M5 miscellaneous - under this category, the justification is explained
· M6 software did not integrate peak
· M7 partial peak integration

The following samples were manually integrated:

AR12211L2 Decachlorobiphenyl on front column due to M3

AR12326L2 Decachlorobiphenyl on front column due to M3

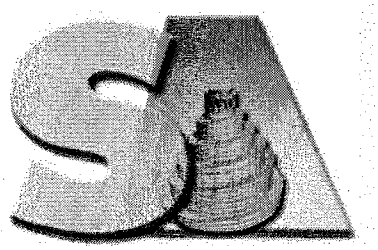
AR12485L2 Decachlorobiphenyl on front column , Tetrachloro-m-xylene on front column due to M3

AR12486L2 Decachlorobiphenyl on front column due to M3

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____11/20/2014_____



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

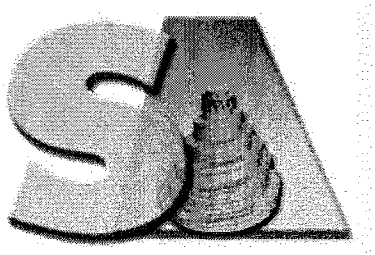
B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

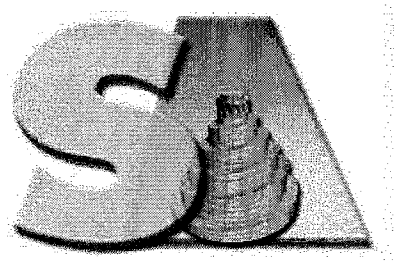


Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 11/06/2014 11/07/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.083 DCB: 9.379

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR12211L2	E2N4158F.D	11/6/2014	13:10	3.085	9.378
02	AR12216L2	E2N4159F.D	11/6/2014	13:25	3.085	9.379
03	AR12212L2	E2N4160F.D	11/6/2014	13:40	3.084	9.378
04	AR12213L2	E2N4161F.D	11/6/2014	13:54	3.084	9.377
05	AR12214L2	E2N4162F.D	11/6/2014	14:09	3.083	9.377
06	AR12215L2	E2N4163F.D	11/6/2014	14:24	3.083	9.378
07	AR12321L2	E2N4166F.D	11/6/2014	15:08	3.084	9.380
08	AR12326L2	E2N4167F.D	11/6/2014	15:22	3.084	9.378
09	AR12322L2	E2N4168F.D	11/6/2014	15:37	3.084	9.379
10	AR12323L2	E2N4169F.D	11/6/2014	15:52	3.084	9.379
11	AR12324L2	E2N4170F.D	11/6/2014	16:07	3.084	9.379
12	AR12325L2	E2N4171F.D	11/6/2014	16:21	3.083	9.378
13	AR12421L2	E2N4174F.D	11/6/2014	17:06	3.085	9.380
14	AR12426L2	E2N4175F.D	11/6/2014	17:20	3.085	9.381
15	AR12422L2	E2N4176F.D	11/6/2014	17:35	3.084	9.380
16	AR12423L2	E2N4177F.D	11/6/2014	17:50	3.085	9.380
17	AR12424L2	E2N4178F.D	11/6/2014	18:04	3.084	9.380
18	AR12425L2	E2N4179F.D	11/6/2014	18:19	3.084	9.379
19	AR12481L2	E2N4182F.D	11/6/2014	19:04	3.085	9.381
20	AR12486L2	E2N4183F.D	11/6/2014	19:18	3.085	9.380
21	AR12482L2	E2N4184F.D	11/6/2014	19:33	3.084	9.380
22	AR12483L2	E2N4185F.D	11/6/2014	19:48	3.085	9.380
23	AR12484L2	E2N4186F.D	11/6/2014	20:03	3.085	9.380
24	AR12485L2	E2N4187F.D	11/6/2014	20:17	3.055	9.380
25	AR12541L2	E2N4190F.D	11/6/2014	21:01	3.085	9.380
26	AR12546L2	E2N4191F.D	11/6/2014	21:16	3.085	9.380
27	AR12542L2	E2N4192F.D	11/6/2014	21:31	3.084	9.379

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 11/06/2014 11/07/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.083 DCB: 9.379

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
28	AR12543L2	E2N4193F.D	11/6/2014	21:46	3.084	9.380
29	AR12544L2	E2N4194F.D	11/6/2014	22:00	3.083	9.378
30	AR12545L2	E2N4195F.D	11/6/2014	22:15	3.082	9.378
31	AR12623L2	E2N4198F.D	11/6/2014	22:59	3.084	9.379
32	AR12681L2	E2N4200F.D	11/6/2014	23:29	3.084	9.379
33	AR12686L2	E2N4201F.D	11/6/2014	23:44	3.084	9.379
34	AR12682L2	E2N4202F.D	11/6/2014	23:58	3.084	9.378
35	AR12683L2	E2N4203F.D	11/7/2014	0:13	3.084	9.379
36	AR12684L2	E2N4204F.D	11/7/2014	0:28	3.084	9.377
37	AR12685L2	E2N4205F.D	11/7/2014	0:43	3.083	9.377
38	AR16601L2	E2N4208F.D	11/7/2014	1:27	3.083	9.380
39	AR16606L2	E2N4209F.D	11/7/2014	1:42	3.084	9.381
40	AR16602L2	E2N4210F.D	11/7/2014	1:56	3.084	9.380
41	AR16603L2	E2N4211F.D	11/7/2014	2:11	3.084	9.380
42	AR16604L2	E2N4212F.D	11/7/2014	2:26	3.083	9.379
43	AR16605L2	E2N4213F.D	11/7/2014	2:40	3.083	9.377
44	AR16603JICV	E2N4217F.D	11/7/2014	3:39	3.084	9.380
45	AR16603LO	E2N4612F.D	11/11/2014	20:03	3.092	9.383
46	MB-79845	E2N4616F.D	11/11/2014	21:02	3.092	9.383
47	LCS-79845	E2N4617F.D	11/11/2014	21:16	3.093	9.384
48	LCSD-79845	E2N4618F.D	11/11/2014	21:31	3.092	9.383
49	MW03-16I-NWG-102814	E2N4619F.D	11/11/2014	21:45	3.092	9.384
50	FD03-102814	E2N4620F.D	11/11/2014	22:00	3.092	9.384
51	AR16603LP	E2N4634F.D	11/12/2014	1:25	3.093	9.385
52	AR16603LS	E2N4686F.D	11/12/2014	16:40	3.093	9.387
53	MB-79913	E2N4692F.D	11/12/2014	18:08	3.092	9.385

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

som14.10.02.1616

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Init. Calib. Date(s): 11/06/2014 11/07/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.083 DCB: 9.379

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
54	LCS-79913	E2N4693F.D	11/12/2014	18:22	3.092	9.387
55	FB03-103014	E2N4695F.D	11/12/2014	18:52	3.092	9.386
56	AR16603LT	E2N4698F.D	11/12/2014	19:36	3.093	9.387
57	AR16603LX	E2N4760F.D	11/13/2014	13:50	3.093	9.387
58	MB-80013	E2N4762F.D	11/13/2014	14:27	3.100	9.390
59	LCS-80013	E2N4763F.D	11/13/2014	14:42	3.093	9.387
60	LCSD-80013	E2N4764F.D	11/13/2014	14:56	3.092	9.385
61	FB03-103014RX	E2N4765F.D	11/13/2014	15:11	3.093	9.386
62	AR16603LY	E2N4768F.D	11/13/2014	15:55	3.093	9.387

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 11/06/2014 11/07/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX: 3.791 DCB: 10.401					
	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR12211L2	E2N4158R.D	11/6/2014	13:10	3.793	10.401
02	AR12216L2	E2N4159R.D	11/6/2014	13:25	3.793	10.401
03	AR12212L2	E2N4160R.D	11/6/2014	13:40	3.792	10.400
04	AR12213L2	E2N4161R.D	11/6/2014	13:54	3.791	10.399
05	AR12214L2	E2N4162R.D	11/6/2014	14:09	3.792	10.400
06	AR12215L2	E2N4163R.D	11/6/2014	14:24	3.791	10.399
07	AR12321L2	E2N4166R.D	11/6/2014	15:08	3.792	10.401
08	AR12326L2	E2N4167R.D	11/6/2014	15:22	3.793	10.402
09	AR12322L2	E2N4168R.D	11/6/2014	15:37	3.792	10.401
10	AR12323L2	E2N4169R.D	11/6/2014	15:52	3.792	10.400
11	AR12324L2	E2N4170R.D	11/6/2014	16:07	3.792	10.401
12	AR12325L2	E2N4171R.D	11/6/2014	16:21	3.791	10.399
13	AR12421L2	E2N4174R.D	11/6/2014	17:06	3.793	10.402
14	AR12426L2	E2N4175R.D	11/6/2014	17:20	3.793	10.403
15	AR12422L2	E2N4176R.D	11/6/2014	17:35	3.792	10.402
16	AR12423L2	E2N4177R.D	11/6/2014	17:50	3.793	10.401
17	AR12424L2	E2N4178R.D	11/6/2014	18:04	3.792	10.401
18	AR12425L2	E2N4179R.D	11/6/2014	18:19	3.791	10.400
19	AR12481L2	E2N4182R.D	11/6/2014	19:04	3.793	10.403
20	AR12486L2	E2N4183R.D	11/6/2014	19:18	3.793	10.402
21	AR12482L2	E2N4184R.D	11/6/2014	19:33	3.793	10.402
22	AR12483L2	E2N4185R.D	11/6/2014	19:48	3.793	10.402
23	AR12484L2	E2N4186R.D	11/6/2014	20:03	3.792	10.400
24	AR12485L2	E2N4187R.D	11/6/2014	20:17	3.792	10.404
25	AR12541L2	E2N4190R.D	11/6/2014	21:01	3.793	10.403
26	AR12546L2	E2N4191R.D	11/6/2014	21:16	3.793	10.403
27	AR12542L2	E2N4192R.D	11/6/2014	21:31	3.793	10.403

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 11/06/2014 11/07/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.791 DCB: 10.401

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
28	AR12543L2	E2N4193R.D	11/6/2014	21:46	3.792	10.402
29	AR12544L2	E2N4194R.D	11/6/2014	22:00	3.792	10.401
30	AR12545L2	E2N4195R.D	11/6/2014	22:15	3.791	10.401
31	AR12623L2	E2N4198R.D	11/6/2014	22:59	3.792	10.401
32	AR12681L2	E2N4200R.D	11/6/2014	23:29	3.792	10.402
33	AR12686L2	E2N4201R.D	11/6/2014	23:44	3.793	10.402
34	AR12682L2	E2N4202R.D	11/6/2014	23:58	3.792	10.401
35	AR12683L2	E2N4203R.D	11/7/2014	0:13	3.792	10.401
36	AR12684L2	E2N4204R.D	11/7/2014	0:28	3.792	10.399
37	AR12685L2	E2N4205R.D	11/7/2014	0:43	3.792	10.399
38	AR16601L2	E2N4208R.D	11/7/2014	1:27	3.791	10.402
39	AR16606L2	E2N4209R.D	11/7/2014	1:42	3.792	10.403
40	AR16602L2	E2N4210R.D	11/7/2014	1:56	3.792	10.402
41	AR16603L2	E2N4211R.D	11/7/2014	2:11	3.791	10.401
42	AR16604L2	E2N4212R.D	11/7/2014	2:26	3.792	10.400
43	AR16605L2	E2N4213R.D	11/7/2014	2:40	3.791	10.400
44	AR16603JICV	E2N4217R.D	11/7/2014	3:39	3.793	10.401
45	AR16603LO	E2N4612R.D	11/11/2014	20:03	3.802	10.405
46	MB-79845	E2N4616R.D	11/11/2014	21:02	3.800	10.405
47	LCS-79845	E2N4617R.D	11/11/2014	21:16	3.800	10.404
48	LCSD-79845	E2N4618R.D	11/11/2014	21:31	3.801	10.404
49	MW03-16I-NWG-102814	E2N4619R.D	11/11/2014	21:45	3.800	10.404
50	FD03-102814	E2N4620R.D	11/11/2014	22:00	3.800	10.405
51	AR16603LP	E2N4634R.D	11/12/2014	1:25	3.800	10.404
52	AR16603LS	E2N4686R.D	11/12/2014	16:40	3.800	10.406
53	MB-79913	E2N4692R.D	11/12/2014	18:08	3.801	10.406

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

8H - FORM VIII ARO

AROCLOR ANALYTICAL SEQUENCE

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Init. Calib. Date(s): 11/06/2014 11/07/2014

Instrument ID: E2

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs, AND LCSs IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION

TCX: 3.791 DCB: 10.401

	EPA SAMPLE NO.	LAB File ID	DATE ANALYZED	TIME ANALYZED	TCX RT	#	DCB RT	#
54	LCS-79913	E2N4693R.D	11/12/2014	18:22	3.801		10.407	
55	FB03-103014	E2N4695R.D	11/12/2014	18:52	3.800		10.406	
56	AR16603LT	E2N4698R.D	11/12/2014	19:36	3.800		10.406	
57	AR16603LX	E2N4760R.D	11/13/2014	13:50	3.801		10.408	
58	MB-80013	E2N4762R.D	11/13/2014	14:27	3.797		10.409	
59	LCS-80013	E2N4763R.D	11/13/2014	14:42	3.800		10.407	
60	LCSD-80013	E2N4764R.D	11/13/2014	14:56	3.800		10.406	
61	FB03-103014RX	E2N4765R.D	11/13/2014	15:11	3.801		10.408	
62	AR16603LY	E2N4768R.D	11/13/2014	15:55	3.800		10.407	

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)

DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag RT values with an asterisk.

6N - FORM VI ARO-1

AROCLORS INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9

GC Column: CLPPest ID: 0.53 (mm) Date(s) Analyzed (1): 11/06/2014 11/07/2014

COMPOUND	PEAK*	RT OF STANDARDS										RT WINDOW **	
		CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	RT	FROM	TO
AR1016	1	4.041	4.041	4.041	4.040	4.038	4.042				4.041	3.971	4.111
	2	4.747	4.747	4.746	4.746	4.743	4.748				4.746	4.676	4.816
	3	5.301	5.301	5.300	5.300	5.299	5.301				5.300	5.230	5.370
AR1260	1	7.169	7.168	7.167	7.165	7.162	7.170				7.167	7.097	7.237
	2	7.725	7.724	7.723	7.720	7.717	7.726				7.722	7.652	7.792
	3	8.041	8.041	8.040	8.038	8.035	8.042				8.039	7.969	8.109
AR1221	1	2.937	2.935	2.935	2.934	2.934	2.936				2.935	2.865	3.005
	2	3.497	3.496	3.495	3.495	3.494	3.498				3.496	3.426	3.566
	3	4.143	4.139	4.138	4.139	4.138	4.139				4.139	4.069	4.209
AR1232	1	3.306	3.306	3.306	3.305	3.305	3.306				3.306	3.236	3.376
	2	4.042	4.042	4.042	4.041	4.040	4.043				4.042	3.972	4.112
	3	4.332	4.333	4.332	4.332	4.331	4.333				4.332	4.262	4.402
AR1242	1	4.969	4.967	4.966	4.963	4.962	4.969				4.966	4.896	5.036
	2	5.775	5.774	5.773	5.771	5.767	5.775				5.772	5.702	5.842
	3	6.152	6.151	6.143	6.138	6.133	6.152				6.145	6.075	6.215
AR1248	1	5.061	5.062	5.062	5.061	5.059	5.061				5.061	4.991	5.131
	2	5.635	5.635	5.634	5.632	5.629	5.635				5.633	5.563	5.703
	3	5.770	5.769	5.768	5.766	5.762	5.769				5.768	5.698	5.838
AR1254	1	6.178	6.177	6.177	6.175	6.173	6.178				6.176	6.106	6.246
	2	6.522	6.521	6.520	6.517	6.513	6.523				6.519	6.449	6.589
	3	6.839	6.838	6.837	6.835	6.832	6.840				6.837	6.767	6.907
TCX (A)		3.083	3.084	3.084	3.083	3.083					3.083	3.033	3.133
DCB (A)		9.380	9.380	9.380	9.379	9.377					9.379	9.279	9.479

(1) At least three peaks for each column are required for identification of Aroclors.

**Retention Time windows are ± 0.07 minutes for each Aroclor peak; 0.05 minutes

6N - FORM VI ARO-1

AROCLORS INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9

GC Column: CLPPest ID: 0.53 (mm) Date(s) Analyzed (1): 11/06/2014 11/07/2014

for tetrachloro-m-xylene; ± 0.10 minutes for decachlorobiphenyl.

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

6N - FORM VI ARO-1

AROCLORS INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9

GC Column: CLPPestII ID: 0.53 (mm) Date(s) Analyzed (1): 11/06/2014 11/07/2014

COMPOUND	PEAK*	RT OF STANDARDS										RT WINDOW **	
		CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	RT	FROM	TO
AR1016	1	4.598	4.598	4.598	4.597	4.596	4.598				4.597	4.527	4.667
	2	5.315	5.315	5.314	5.314	5.313	5.316				5.315	5.245	5.385
	3	5.725	5.726	5.726	5.725	5.724	5.726				5.725	5.655	5.795
AR1260	1	8.117	8.116	8.115	8.114	8.112	8.118				8.115	8.045	8.185
	2	8.594	8.593	8.592	8.592	8.590	8.595				8.593	8.523	8.663
	3	8.903	8.902	8.902	8.900	8.900	8.904				8.902	8.832	8.972
AR1221	1	3.660	3.659	3.659	3.659	3.658	3.660				3.659	3.589	3.729
	2	4.497	4.496	4.496	4.496	4.495	4.496				4.496	4.426	4.566
	3	5.312	5.311	5.310	5.310	5.309	5.311				5.310	5.240	5.380
AR1232	1	3.982	3.982	3.982	3.982	3.981	3.982				3.982	3.912	4.052
	2	4.260	4.261	4.261	4.261	4.260	4.261				4.261	4.191	4.331
	3	4.496	4.496	4.496	4.496	4.495	4.496				4.496	4.426	4.566
AR1242	1	6.062	6.062	6.061	6.061	6.060	6.063				6.062	5.992	6.132
	2	6.527	6.527	6.526	6.525	6.524	6.527				6.526	6.456	6.596
	3	6.578	6.578	6.577	6.577	6.575	6.578				6.577	6.507	6.647
AR1248	1	6.578	6.577	6.577	6.576	6.573	6.578				6.577	6.507	6.647
	2	6.852	6.851	6.850	6.849	6.847	6.852				6.850	6.780	6.920
	3	7.210	7.209	7.207	7.206	7.203	7.210				7.207	7.137	7.277
AR1254	1	7.838	7.837	7.836	7.834	7.833	7.838				7.836	7.766	7.906
	2	8.148	8.147	8.146	8.144	8.143	8.148				8.146	8.076	8.216
	3	8.441	8.440	8.440	8.439	8.438	8.441				8.440	8.370	8.510
TCX (A)		3.791	3.792	3.791	3.792	3.791					3.791	3.741	3.841
DCB (A)		10.402	10.402	10.401	10.400	10.400					10.401	10.301	10.501

(1) At least three peaks for each column are required for identification of Aroclors.

**Retention Time windows are ± 0.07 minutes for each Aroclor peak; 0.05 minutes

6N - FORM VI ARO-1

AROCLORS INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9

GC Column: CLPPestII ID: 0.53 (mm) Date(s) Analyzed (1): 11/06/2014 11/07/2014

for tetrachloro-m-xylene; ± 0.10 minutes for decachlorobiphenyl.

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

6P - FORM VI ARO-2

AROCLOR INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2 Date(s) Analyzed: 11/06/2014 11/07/2014

GC Column: CLPPest ID: 0.53 (mm)

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9 16.0

COMPOUND	PEAK [1]	CALIBRATION FACTORS (CFs)									% RSD
		CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	
AR1016	1	17690	17660	17030	16143	15396	18520				6.7
	2	20150	21030	21565	21741	21959	20080				3.9
	3	10410	11330	10748	10070	9616	10100				5.8
AR1260	1	27290	27605	26303	24805	23559	29220				7.7
	2	36630	37425	36698	35190	33295	38180				4.8
	3	25800	26390	25923	25085	23989	26700				3.8
AR1221	1	1470	1430	1458	1441	1449	1520				2.2
	2	3770	3720	3710	3625	3538	3940				3.7
	3	560	635	648	640	724	660				8.2
AR1232	1	3780	3775	3865	3889	3874	3900				1.4
	2	7970	7730	7610	7375	7048	8160				5.3
	3	3980	4060	4048	4154	4001	4020				1.5
AR1242	1	8760	8820	8903	9270	9208	8780				2.5
	2	5130	5405	5443	6241	6142	5160				8.7
	3	4040	3835	3818	4969	4852	4180				11.8
AR1248	1	3680	2985	3060	3151	3271	2020				18.2
	2	15400	13755	13798	13744	13270	13720				5.3
	3	10160	8425	8580	8868	8919	8180				7.9
AR1254	1	17500	17120	16763	16553	15851	17820				4.2
	2	25360	24250	23923	23128	22182	25060				5.0
	3	18670	18145	18218	18120	17894	16740				3.6
TCB (A)	1	15773400	15418300	14597950	14085463	13449400					6.5
TCX (A)	e	548600	563500	566400	571325	566488					1.5

Avg = 10.5

[1] At least three peaks for each column are required for identification of Aroclors.

6P - FORM VI ARO-2

AROCLOR INITIAL CALIBRATION (MULTIPOINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2 Date(s) Analyzed: 11/06/2014 11/07/2014

GC Column: CLPPestII ID: 0.53 (mm)

Level (x CS1): CS1 1.0 CS2 2.0 CS3 4.0 CS4 8.0 CS5 16.0 CS6 0.5 CS7 CS8 CS9 16.0

COMPOUND	PEAK [1]	CALIBRATION FACTORS (CFs)									% RSD
		CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	
AR1016	1	8070	8295	8303	8184	8038	8140				1.4
	2	15580	15510	15050	14295	13543	16560				7.0
	3	7820	7805	7695	7534	7399	8660				5.7
AR1260	1	30260	30410	29803	28246	26706	31460				5.8
	2	39670	41020	41160	39716	38055	40420				2.9
	3	27100	27655	27708	27090	26000	27960				2.6
AR1221	1	1430	1435	1493	1478	1451	1400				2.3
	2	3210	3210	3248	3238	3222	3180				0.7
	3	1400	1410	1390	1385	1349	1300				3.0
AR1232	1	1180	1255	1270	1250	1224	1080				5.9
	2	3180	3165	3233	3274	3356	3220				2.1
	3	2470	2525	2505	2523	2538	2540				1.0
AR1242	1	18990	19825	20730	21528	21728	18500				6.6
	2	8140	8385	8113	7908	7583	8160				3.4
	3	9200	9555	9348	9194	8956	9300				2.1
AR1248	1	14430	14590	14298	13928	13179	13680				3.8
	2	17490	17775	17700	17459	16652	16840				2.7
	3	8220	8450	8685	8898	9041	7660				5.9
AR1254	1	17280	17845	18780	19396	19509	15660				8.1
	2	27790	28300	29150	29129	28450	25840				4.4
	3	19450	20935	22220	22930	23063	19360				7.8
DCB (A)	1	503400	497000	470050	446513	424675					7.1
TCX (A)	e	403200	431500	452500	479150	491675					7.9

[1] At least three peaks for each column are required for identification of Aroclors.

6Q - FORM VI ARO-3

AROCLOR INITIAL CALIBRATION (SINGLE POINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2 Date(s) Analyzed: 11/06/2014 11/06/2014

GC Column: CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT (ng)	PEAK [1]	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1262	0.4	1	8.60	8.53	8.67	38708
		2	8.82	8.75	8.89	11288
		3	9.03	8.96	9.10	25515
		4				
		5				

[1] At least three peaks for each column are required for identification of multicomponent analytes.

6Q - FORM VI ARO-3

AROCLOR INITIAL CALIBRATION (SINGLE POINT)

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Instrument ID: E2 Date(s) Analyzed: 11/06/2014 11/06/2014

GC Column: CLPPestII ID: 0.53 (mm)

COMPOUND	AMOUNT (ng)	PEAK [1]	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Aroclor-1262	0.4	1	9.37	9.30	9.44	47238
		2	9.71	9.64	9.78	9263
		3	9.84	9.77	9.91	22705
		4				
		5				

[1] At least three peaks for each column are required for identification of multicomponent analytes.

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603JICV Date Analyzed: 11/07/2014

Lab Sample ID: AR16603JICV Time Analyzed: 3:39

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.040	3.971	4.111	17073.125	17345	1.6
	2	4.746	4.676	4.816	21087.60417	22110	4.8
	3	5.300	5.230	5.370	10378.85417	11145	7.4
AR1260	1	7.167	7.097	7.237	26463.64583	26627.5	0.6
	2	7.723	7.652	7.792	36236.25	37112.5	2.4
	3	8.040	7.969	8.109	25647.8125	26282.5	2.5
TCX		3.084	3.033	3.133	563262.5	572400	1.6
DCB		9.380	9.279	9.479	14664902.5	14933525	1.8

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603JICV Date Analyzed: 11/07/2014

Lab Sample ID: AR16603JICV Time Analyzed: 3:39

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.599	4.527	4.667	8171.458333	8405	2.9
	2	5.315	5.245	5.385	15089.58333	15222.5	0.9
	3	5.727	5.655	5.795	7818.854167	7752.5	-0.8
AR1260	1	8.115	8.045	8.185	29480.83333	30082.5	2.0
	2	8.592	8.523	8.663	40006.875	41357.5	3.4
	3	8.901	8.832	8.972	27252.08333	27990	2.7
TCX		3.793	3.741	3.841	451605	459100	1.7
DCB		10.401	10.301	10.501	468327.5	477550	2.0

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LO Date Analyzed: 11/11/2014

Lab Sample ID: AR16603LO Time Analyzed: 20:03

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.048	3.971	4.111	17073.125	16352.5	-4.2
	2	4.757	4.676	4.816	21087.60417	20437.5	-3.1
	3	5.309	5.230	5.370	10378.85417	10115	-2.5
AR1260	1	7.171	7.097	7.237	26463.64583	25115	-5.1
	2	7.726	7.652	7.792	36236.25	34927.5	-3.6
	3	8.042	7.969	8.109	25647.8125	24092.5	-6.1
TCX		3.092	3.033	3.133	563262.5	514500	-8.7
DCB		9.383	9.279	9.479	14664902.5	13051600	-11.0

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LO Date Analyzed: 11/11/2014

Lab Sample ID: AR16603LO Time Analyzed: 20:03

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.607	4.527	4.667	8171.458333	7952.5	-2.7
	2	5.323	5.245	5.385	15089.58333	14617.5	-3.1
	3	5.732	5.655	5.795	7818.854167	7310	-6.5
AR1260	1	8.118	8.045	8.185	29480.83333	27745	-5.9
	2	8.596	8.523	8.663	40006.875	37857.5	-5.4
	3	8.904	8.832	8.972	27252.08333	24897.5	-8.6
TCX		3.802	3.741	3.841	451605	428000	-5.2
DCB		10.405	10.301	10.501	468327.5	407075	-13.1

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LP Date Analyzed: 11/12/2014

Lab Sample ID: AR16603LP Time Analyzed: 1:25

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.049	3.971	4.111	17073.125	16370	-4.1
	2	4.758	4.676	4.816	21087.60417	20030	-5.0
	3	5.310	5.230	5.370	10378.85417	10130	-2.4
AR1260	1	7.172	7.097	7.237	26463.64583	25525	-3.5
	2	7.728	7.652	7.792	36236.25	35497.5	-2.0
	3	8.044	7.969	8.109	25647.8125	24947.5	-2.7
TCX		3.093	3.033	3.133	563262.5	515000	-8.6
DCB		9.385	9.279	9.479	14664902.5	13870925	-5.4

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LP Date Analyzed: 11/12/2014

Lab Sample ID: AR16603LP Time Analyzed: 1:25

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.605	4.527	4.667	8171.458333	7912.5	-3.2
	2	5.321	5.245	5.385	15089.58333	14700	-2.6
	3	5.731	5.655	5.795	7818.854167	7397.5	-5.4
AR1260	1	8.118	8.045	8.185	29480.83333	28982.5	-1.7
	2	8.595	8.523	8.663	40006.875	39405	-1.5
	3	8.904	8.832	8.972	27252.08333	26210	-3.8
TCX		3.800	3.741	3.841	451605	427000	-5.4
DCB		10.404	10.301	10.501	468327.5	423250	-9.6

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LS Date Analyzed: 11/12/2014

Lab Sample ID: AR16603LS Time Analyzed: 16:40

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.050	3.971	4.111	17073.125	16027.5	-6.1
	2	4.760	4.676	4.816	21087.60417	18825	-10.7
	3	5.313	5.230	5.370	10378.85417	9975	-3.9
AR1260	1	7.175	7.097	7.237	26463.64583	24947.5	-5.7
	2	7.731	7.652	7.792	36236.25	34462.5	-4.9
	3	8.046	7.969	8.109	25647.8125	24450	-4.7
TCX		3.093	3.033	3.133	563262.5	504800	-10.4
DCB		9.387	9.279	9.479	14664902.5	13950925	-4.9

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LS Date Analyzed: 11/12/2014

Lab Sample ID: AR16603LS Time Analyzed: 16:40

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.606	4.527	4.667	8171.458333	7722.5	-5.5
	2	5.322	5.245	5.385	15089.58333	14445	-4.3
	3	5.731	5.655	5.795	7818.854167	7287.5	-6.8
AR1260	1	8.119	8.045	8.185	29480.83333	28767.5	-2.4
	2	8.596	8.523	8.663	40006.875	39092.5	-2.3
	3	8.905	8.832	8.972	27252.08333	26250	-3.7
TCX		3.800	3.741	3.841	451605	419350	-7.1
DCB		10.406	10.301	10.501	468327.5	429850	-8.2

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LT Date Analyzed: 11/12/2014

Lab Sample ID: AR16603LT Time Analyzed: 19:36

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.051	3.971	4.111	17073.125	15375	-9.9
	2	4.760	4.676	4.816	21087.60417	17980	-14.7
	3	5.313	5.230	5.370	10378.85417	9647.5	-7.0
AR1260	1	7.176	7.097	7.237	26463.64583	24315	-8.1
	2	7.731	7.652	7.792	36236.25	33100	-8.7
	3	8.046	7.969	8.109	25647.8125	23582.5	-8.1
TCX		3.093	3.033	3.133	563262.5	483450	-14.2
DCB		9.387	9.279	9.479	14664902.5	13239800	-9.7

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LT Date Analyzed: 11/12/2014

Lab Sample ID: AR16603LT Time Analyzed: 19:36

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.606	4.527	4.667	8171.458333	7365	-9.9
	2	5.323	5.245	5.385	15089.58333	13937.5	-7.6
	3	5.732	5.655	5.795	7818.854167	7072.5	-9.5
AR1260	1	8.120	8.045	8.185	29480.83333	27597.5	-6.4
	2	8.597	8.523	8.663	40006.875	37770	-5.6
	3	8.905	8.832	8.972	27252.08333	25537.5	-6.3
TCX		3.800	3.741	3.841	451605	401300	-11.1
DCB		10.406	10.301	10.501	468327.5	417150	-10.9

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LX Date Analyzed: 11/13/2014

Lab Sample ID: AR16603LX Time Analyzed: 13:50

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.051	3.971	4.111	17073.125	15817.5	-7.4
	2	4.760	4.676	4.816	21087.60417	19225	-8.8
	3	5.313	5.230	5.370	10378.85417	9952.5	-4.1
AR1260	1	7.176	7.097	7.237	26463.64583	24700	-6.7
	2	7.731	7.652	7.792	36236.25	33975	-6.2
	3	8.047	7.969	8.109	25647.8125	24077.5	-6.1
TCX		3.093	3.033	3.133	563262.5	500850	-11.1
DCB		9.387	9.279	9.479	14664902.5	13617225	-7.1

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LX Date Analyzed: 11/13/2014

Lab Sample ID: AR16603LX Time Analyzed: 13:50

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.607	4.527	4.667	8171.458333	7715	-5.6
	2	5.323	5.245	5.385	15089.58333	14375	-4.7
	3	5.733	5.655	5.795	7818.854167	7250	-7.3
AR1260	1	8.121	8.045	8.185	29480.83333	28197.5	-4.4
	2	8.598	8.523	8.663	40006.875	38530	-3.7
	3	8.906	8.832	8.972	27252.08333	25680	-5.8
TCX		3.801	3.741	3.841	451605	413900	-8.3
DCB		10.408	10.301	10.501	468327.5	427225	-8.8

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPest ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LY Date Analyzed: 11/13/2014

Lab Sample ID: AR16603LY Time Analyzed: 15:55

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.050	3.971	4.111	17073.125	15922.5	-6.7
	2	4.760	4.676	4.816	21087.60417	19010	-9.9
	3	5.312	5.230	5.370	10378.85417	9955	-4.1
AR1260	1	7.175	7.097	7.237	26463.64583	24937.5	-5.8
	2	7.730	7.652	7.792	36236.25	34470	-4.9
	3	8.046	7.969	8.109	25647.8125	24475	-4.6
TCX		3.093	3.033	3.133	563262.5	499200	-11.4
DCB		9.387	9.279	9.479	14664902.5	13688875	-6.7

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

7N - FORM VII ARO

AROCLOR CALIBRATION VERIFICATION SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column: CLPPestII ID: 0.53 (mm) Calibration Date(s): 11/06/2014 11/07/2014

EPA Sample No. (AR####3##): AR16603LY Date Analyzed: 11/13/2014

Lab Sample ID: AR16603LY Time Analyzed: 15:55

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

EPA Sample No. (AR####3##): Date Analyzed:

Lab Sample ID: Time Analyzed:

AROCLOR COMPOUND	PEAK	RETENTION RT	RT WINDOW FROM	RT WINDOW TO	$\overline{CF}$	CF	%D
AR1016	1	4.605	4.527	4.667	8171.458333	7682.5	-6.0
	2	5.322	5.245	5.385	15089.58333	14460	-4.2
	3	5.731	5.655	5.795	7818.854167	7270	-7.0
AR1260	1	8.119	8.045	8.185	29480.83333	28457.5	-3.5
	2	8.597	8.523	8.663	40006.875	38897.5	-2.8
	3	8.905	8.832	8.972	27252.08333	26197.5	-3.9
TCX		3.800	3.741	3.841	451605	417350	-7.6
DCB		10.407	10.301	10.501	468327.5	433975	-7.3

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

4F - FORM IV ARO

AROCLOR METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79845

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: E2N4616F.D / E2N4616R.D Lab Sample ID: MB-79845

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 11/04/2014

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

Acid Cleanup: (Y/N Y

Date Analyzed (1): 11/11/2014 Date Analyzed (2): 11/11/2014

Time Analyzed (1): 21:02 Time Analyzed (2): 21:02

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-79845	LCS-79845	11/11/2014	11/11/2014
02	LCSD-79845	LCSD-79845	11/11/2014	11/11/2014
03	MW03-16I-NWG-102814	N2027-04C	11/11/2014	11/11/2014
04	FD03-102814	N2027-06A	11/11/2014	11/11/2014

COMMENTS:

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79845

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79845

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N4616F.D/E2N4616R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 11/04/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/11/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

4F - FORM IV ARO

AROCLOR METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-79913

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: E2N4692F.D / E2N4692R.D Lab Sample ID: MB-79913

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 11/06/2014

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

Acid Cleanup: (Y/N Y

Date Analyzed (1): 11/12/2014 Date Analyzed (2): 11/12/2014

Time Analyzed (1): 18:08 Time Analyzed (2): 18:08

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-79913	LCS-79913	11/12/2014	11/12/2014
02	FB03-103014	N2027-17B	11/12/2014	11/12/2014

COMMENTS:

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-79913

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-79913

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N4692F.D/E2N4692R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 11/06/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/12/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

4F - FORM IV ARO

AROCLOR METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-80013

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab File ID: E2N4762F.D / E2N4762R.D Lab Sample ID: MB-80013

Matrix: (SOIL/SED/WATER) WATER Extraction: (Type) SEPF Date Extracted: 11/13/2014

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

Acid Cleanup: (Y/N Y

Date Analyzed (1): 11/13/2014 Date Analyzed (2): 11/13/2014

Time Analyzed (1): 14:27 Time Analyzed (2): 14:27

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED (1)	DATE ANALYZED (2)
01	LCS-80013	LCS-80013	11/13/2014	11/13/2014
02	LCSD-80013	LCSD-80013	11/13/2014	11/13/2014
03	FB03-103014RX	N2027-17BRE	11/13/2014	11/13/2014

COMMENTS:

1H - FORM I ARO

AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB-80013

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-80013

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2N4762F.D/E2N4762R.D

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (Type) SEPF Date Extracted: 11/13/2014

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/13/2014

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

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

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
12674-11-2	Aroclor-1016	0.25	U	0.12	0.25	1.0
11104-28-2	Aroclor-1221	0.50	U	0.095	0.50	1.0
11141-16-5	Aroclor-1232	0.25	U	0.19	0.25	1.0
53469-21-9	Aroclor-1242	0.25	U	0.030	0.25	1.0
12672-29-6	Aroclor-1248	0.25	U	0.063	0.25	1.0
11097-69-1	Aroclor-1254	0.25	U	0.20	0.25	1.0
11096-82-5	Aroclor-1260	0.25	U	0.11	0.25	1.0

2Q - FORM II ARO-1

WATER AROCLOR SURROGATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC	#	TCX 2 %REC	#	DCB 1 %REC	#	DCB 2 %REC	#	OTHER (1)	OTHER (2)	TOT OUT
01	MB-79845	75		84		71		68				0
02	LCS-79845	72		80		69		66				0
03	LCSD-79845	63		69		60		59				0
04	MW03-16I-NWG-102814	64		70		34	*	34	*			2
05	FD03-102814	68		75		40	*	39	*			2
06	MB-79913	65		72		41		40				0
07	LCS-79913	23	*	24	*	16	*	16	*			4
08	FB03-103014	54		59		23	*	23	*			2
09	MB-80013	65		72		63		62				0
10	LCS-80013	67		74		66		65				0
11	LCSD-80013	66		72		62		62				0
12	FB03-103014RX	52		57		39	*	38	*			2

	QC LIMITS
TCX = Tetrachloro-m-xylene	(34-137)
DCB = Decachlorobiphenyl	(40-135)

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

som14.10.02.1616

SW846

3N - FORM III ARO-3
WATER AROCLOR LABORATORY CONTROL
SAMPLE RECOVERY

EPA SAMPLE NO.
LCS-79845

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79845 LCS Lot No.: a094177

Date Extracted: 11/04/2014 Date Analyzed (1): 11/11/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	3.2894	82		25-145
Aroclor-1260	4.0000	3.0193	75		30-145

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/11/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	3.0056	75		25-145
Aroclor-1260	4.0000	2.9375	73		30-145

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

3N - FORM III ARO-3

WATER AROCLOR LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-79913

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79913 LCS Lot No.: a094177

Date Extracted: 11/06/2014 Date Analyzed (1): 11/12/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	1.1271	28		25-145
Aroclor-1260	4.0000	1.0352	26	*	30-145

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/12/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	1.1202	28		25-145
Aroclor-1260	4.0000	1.0054	25	*	30-145

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 2 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

3N - FORM III ARO-3

WATER AROCLOR LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

LCS-80013

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-80013 LCS Lot No.: a094177

Date Extracted: 11/13/2014 Date Analyzed (1): 11/13/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	2.8148	70		25-145
Aroclor-1260	4.0000	2.8749	72		30-145

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/13/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS
Aroclor-1016	4.0000	2.8172	70		25-145
Aroclor-1260	4.0000	2.8525	71		30-145

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

3N - FORM III ARO-3

WATER AROCLOR LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

LCSD-79845

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79845 LCS Lot No.: a094177

Date Extracted: 11/04/2014 Date Analyzed (1): 11/11/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
Aroclor-1016	4.0000	2.9243	73		25-145	12		30
Aroclor-1260	4.0000	2.7027	68		30-145	10		30

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/11/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
Aroclor-1016	4.0000	2.6511	66		25-145	13		30
Aroclor-1260	4.0000	2.5918	65		30-145	12		30

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

RPD: 0 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

3N - FORM III ARO-3
WATER AROCLOR LABORATORY CONTROL
SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.
LCSD-80013

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-80013 LCS Lot No.: a094177

Date Extracted: 11/13/2014 Date Analyzed (1): 11/13/2014

Instrument ID (1): E2 GC Column(1): CLPPest ID: 0.53 (mm)

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
Aroclor-1016	4.0000	3.4382	86		25-145	21		30
Aroclor-1260	4.0000	2.7210	68		30-145	6.0		30

Instrument ID (2): E2 GC Column(2): CLPPestII ID: 0.53 (mm)

Date Analyzed (2): 11/13/2014

COMPOUND	AMOUNT ADDED (UG/L)	AMOUNT RECOVERED (UG/L)	%REC	#	QC LIMITS	%RPD	#	RPD LIMIT
Aroclor-1016	4.0000	2.5669	64		25-145	9.0		30
Aroclor-1260	4.0000	2.5006	63		30-145	12		30

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

LCS Recovery: 0 out of 4 outside limits.

RPD: 0 out of 4 outside limits.

COMMENTS:

som14.10.02.1616

10C - FORM X ARO
IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.
LCS-79845

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79845 Date(s) Analyzed: 11/11/2014 11/11/2014

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (MM)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION PEAK	CONCENTRATION MEAN	%D
Aroclor-1016	1	4.047	3.971	4.111	3.7667		
	2	4.757	4.676	4.816	3.0241		
COLUMN 1	3	5.310	5.230	5.370	3.0774		
	4						
	5					3.289400	
	1	4.605	4.527	4.667	3.1549		
	2	5.322	5.245	5.385	3.0087		
COLUMN 2	3	5.732	5.655	5.795	2.8534		
	4						
	5					3.005647	9.4
Aroclor-1260	1	7.172	7.097	7.237	3.0423		
	2	7.727	7.652	7.792	2.8590		
COLUMN 1	3	8.043	7.969	8.109	3.1566		
	4						
	5					3.019302	
	1	8.118	8.045	8.185	2.9904		
	2	8.595	8.523	8.663	2.8318		
COLUMN 2	3	8.904	8.832	8.972	2.9902		
	4						
	5					2.937470	2.8

At least 3 peaks for each column are required for identification of multicomponent analytes

10C - FORM X ARO
IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.
LCS-79913

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-79913 Date(s) Analyzed: 11/12/2014 11/12/2014

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (MM)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION PEAK	CONCENTRATION MEAN	%D
Aroclor-1016	1	4.051	3.971	4.111	1.1351		
	2	4.761	4.676	4.816	0.9774		
COLUMN 1	3	5.320	5.230	5.370	1.2689		
	4						
	5					1.127132	
	1	4.606	4.527	4.667	1.1051		
	2	5.324	5.245	5.385	1.1478		
COLUMN 2	3	5.733	5.655	5.795	1.1076		
	4						
	5					1.120152	0.6
Aroclor-1260	1	7.176	7.097	7.237	1.1215		
	2	7.731	7.652	7.792	0.9899		
COLUMN 1	3	8.046	7.969	8.109	0.9942		
	4						
	5					1.035223	
	1	8.122	8.045	8.185	1.0922		
	2	8.598	8.523	8.663	0.9586		
COLUMN 2	3	8.907	8.832	8.972	0.9654		
	4						
	5					1.005417	3.0

At least 3 peaks for each column are required for identification of multicomponent analytes

10C - FORM X ARO
IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.
LCS-80013

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCS-80013 Date(s) Analyzed: 11/13/2014 11/13/2014

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (MM)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION PEAK	CONCENTRATION MEAN	%D
Aroclor-1016	1	4.051	3.971	4.111	2.8917		
	2	4.760	4.676	4.816	2.6641		
COLUMN 1	3	5.315	5.230	5.370	2.8886		
	4						
	5					2.814790	
	1	4.607	4.527	4.667	2.8489		
	2	5.323	5.245	5.385	2.8708		
COLUMN 2	3	5.732	5.655	5.795	2.7319		
	4						
	5					2.817218	0
Aroclor-1260	1	7.175	7.097	7.237	2.8741		
	2	7.731	7.652	7.792	2.6934		
COLUMN 1	3	8.046	7.969	8.109	3.0572		
	4						
	5					2.874916	
	1	8.120	8.045	8.185	2.8853		
	2	8.597	8.523	8.663	2.7368		
COLUMN 2	3	8.906	8.832	8.972	2.9356		
	4						
	5					2.852533	0.8

At least 3 peaks for each column are required for identification of multicomponent analytes

10C - FORM X ARO
IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.
LCSD-79845

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-79845 Date(s) Analyzed: 11/11/2014 11/11/2014

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (MM)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION PEAK	CONCENTRATION MEAN	%D
Aroclor-1016	1	4.046	3.971	4.111	3.3796		
	2	4.756	4.676	4.816	2.6637		
COLUMN 1	3	5.309	5.230	5.370	2.7296		
	4						
	5					2.924273	
	1	4.606	4.527	4.667	2.7963		
	2	5.322	5.245	5.385	2.6542		
COLUMN 2	3	5.731	5.655	5.795	2.5029		
	4						
	5					2.651131	10.3
Aroclor-1260	1	7.171	7.097	7.237	2.7128		
	2	7.726	7.652	7.792	2.5444		
COLUMN 1	3	8.041	7.969	8.109	2.8509		
	4						
	5					2.702706	
	1	8.118	8.045	8.185	2.6478		
	2	8.595	8.523	8.663	2.4871		
COLUMN 2	3	8.904	8.832	8.972	2.6405		
	4						
	5					2.591809	4.3

At least 3 peaks for each column are required for identification of multicomponent analytes

10C - FORM X ARO
IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.
LCSD-80013

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2027 Mod. Ref No.: SDG No.: SN2027

Lab Sample ID: LCSD-80013 Date(s) Analyzed: 11/13/2014 11/13/2014

Instrument ID (1): E2 Instrument ID (2): E2

GC Column(1): CLPPest ID: 0.53 (mm) GC Column(2): CLPPestII ID: 0.53 (MM)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION PEAK	CONCENTRATION MEAN	%D
Aroclor-1016	1	4.049	3.971	4.111	2.9544		
	2	4.755	4.676	4.816	2.7594		
COLUMN 1	3	5.321	5.230	5.370	4.6007		
	4						
	5					3.438164	
	1	4.605	4.527	4.667	2.5895		
	2	5.322	5.245	5.385	2.6416		
COLUMN 2	3	5.731	5.655	5.795	2.4697		
	4						
	5					2.566910	33.9
Aroclor-1260	1	7.170	7.097	7.237	2.7237		
	2	7.725	7.652	7.792	2.5356		
COLUMN 1	3	8.041	7.969	8.109	2.9036		
	4						
	5					2.720960	
	1	8.119	8.045	8.185	2.6241		
	2	8.595	8.523	8.663	2.4231		
COLUMN 2	3	8.905	8.832	8.972	2.4545		
	4						
	5					2.500551	8.8

At least 3 peaks for each column are required for identification of multicomponent analytes

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E2

Spectrum Analytical, Inc. RI Division E2 Injection Log
GC Semivolatiles Laboratory

METHOD: 8082 ANALYST: JW/GMA
ICAL DATE: 11/6/14

START BATCH: 141106BF.B Start: 06-NOV-14 13:10
END BATCH: 141106BF.B End: 07-NOV-14 03:39

Internal Standard:
Comments: 8082 ICAL

Inlet Maintenance By:
Liner :
Column :
Inlet Seal:
Septum :

Reviewed By: 11/12/14 Manual Integration: JW 11/7/14 MI Review: 11/12/14 ICV: _____

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E2N4158F/R	13:10	AR12211L2	AR12211L2		AQ					1			✓		MI_F11 PW141016A
E2N4159F/R	13:25	AR12216L2	AR12216L2		AQ					1			✓		F
E2N4160F/R	13:40	AR12212L2	AR12212L2		AQ					1			✓		B
E2N4161F/R	13:54	AR12213L2	AR12213L2		AQ					1			✓		C
E2N4162F/R	14:09	AR12214L2	AR12214L2		AQ					1			✓		D
E2N4163F/R	14:24	AR12215L2	AR12215L2		AQ					1			✓		E
E2N4166F/R	15:08	AR12321L2	AR12321L2		AQ					1			✓		G
E2N4167F/R	15:22	AR12326L2	AR12326L2		AQ					1			✓		MI_F11 L
E2N4168F/R	15:37	AR12322L2	AR12322L2		AQ					1			✓		H
E2N4169F/R	15:52	AR12323L2	AR12323L2		AQ					1			✓		I
E2N4170F/R	16:07	AR12324L2	AR12324L2		AQ					1			✓		J
E2N4171F/R	16:21	AR12325L2	AR12325L2		AQ					1			✓		PW141016 K
E2N4174F/R	17:06	AR12421L2	AR12421L2		AQ					1			✓		PW141029A
E2N4175F/R	17:20	AR12426L2	AR12426L2		AQ					1			✓		F
E2N4176F/R	17:35	AR12422L2	AR12422L2		AQ					1			✓		B
E2N4177F/R	17:50	AR12423L2	AR12423L2		AQ					1			✓		C
E2N4178F/R	18:04	AR12424L2	AR12424L2		AQ					1			✓		D
E2N4179F/R	18:19	AR12425L2	AR12425L2		AQ					1			✓		E
E2N4182F/R	19:04	AR12481L2	AR12481L2		AQ					1			✓		G
E2N4183F/R	19:18	AR12486L2	AR12486L2		AQ					1			✓		L
E2N4184F/R	19:33	AR12482L2	AR12482L2		AQ					1			✓		H
E2N4185F/R	19:48	AR12483L2	AR12483L2		AQ					1			✓		I
E2N4186F/R	20:03	AR12484L2	AR12484L2		AQ					1			✓		J
E2N4187F/R	20:17	AR12485L2	AR12485L2		AQ					1			✓		PW141029 K
E2N4190F/R	21:01	AR12541L2	AR12541L2		AQ					1			✓		PW141028A
E2N4191F/R	21:16	AR12546L2	AR12546L2		AQ					1			✓		F
E2N4192F/R	21:31	AR12542L2	AR12542L2		AQ					1			✓		PW141028 B

- One or more target compounds are above the calibration range
- One or more spike compounds are outside of control limits
- Surrogate is outside of control limits
- Surrogate is diluted

JW 11/11/14

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E2

Spectrum Analytical, Inc. RI Division E2 Injection Log
GC Semivolatiles Laboratory

METHOD: 8082
ICAL DATE: 11/6/14

ANALYST: JW/GMA

START BATCH: 141106BF.B Start: 06-NOV-14 13:10
END BATCH: 141106BF.B End: 07-NOV-14 03:39

Internal Standard:
Comments: 8082 ICAL

Inlet Maintenance By:
Liner :
Column :
Inlet Seal:
Septum :

Reviewed By: 11/12/14 Manual Integration: NA MI Review: NA ICV: _____

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E2N4193F/R	21:46	AR12543L2	AR12543L2		AQ					1			✓		PW141028C
E2N4194F/R	22:00	AR12544L2	AR12544L2		AQ					1			✓		D
E2N4195F/R	22:15	AR12545L2	AR12545L2		AQ					1			✓		PW141028E
E2N4198F/R	22:59	AR12623L2	AR12623L2		AQ					1			✓		PW141029C
E2N4200F/R	23:29	AR12681L2	AR12681L2		AQ					1			✓		PW141028G
E2N4201F/R	23:44	AR12686L2	AR12686L2		AQ					1			✓		L
E2N4202F/R	23:58	AR12682L2	AR12682L2		AQ					1			✓		H
E2N4203F/R	00:13	AR12683L2	AR12683L2		AQ					1			✓		I
E2N4204F/R	00:28	AR12684L2	AR12684L2		AQ					1			✓		J
E2N4205F/R	00:43	AR12685L2	AR12685L2		AQ					1			✓		K
E2N4208F/R	01:27	AR16601L2	AR16601L2		AQ					1			✓		M
E2N4209F/R	01:42	AR16606L2	AR16606L2		AQ					1			✓		R
E2N4210F/R	01:56	AR16602L2	AR16602L2		AQ					1			✓		N
E2N4211F/R	02:11	AR16603L2	AR16603L2		AQ					1			✓		O
E2N4212F/R	02:26	AR16604L2	AR16604L2		AQ					1			✓		P
E2N4213F/R	02:40	AR16605L2	AR16605L2		AQ					1			✓		PW141028Q
E2N4216F/R	03:25	AIBLKLA	AIBLKLA		AQ	178*	114	187*	114	1			✓		
E2N4217F/R	03:39	AR16603JICV	AR16603JICV		AQ					1			✓		PW141028O

E - One or more target compounds are above the calibration range
R - One or more spike compounds are outside of control limits
* - Surrogate is outside of control limits
D - Surrogate is diluted

JW 11/11/14

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E2

N2027

Spectrum Analytical, Inc. RI Division E2 Injection Log — METHOD: 8082 — ANALYST: JW/GMA — START BATCH: 141111F.B — Start: 11-NOV-14 11:25

GC Semivolatiles Laboratory — ICAL DATE: 11/6/14 — END BATCH: 141111F.B — End: 12-NOV-14 02:09

Internal Standard:

Comments: STDs on Pg 61

Inlet Maintenance By:
Liner : —
Column : ↓
Inlet Seal:
Septum : —

Reviewed By: 11/12/14 — Manual Integration: NA — MI Review: MA — ICV: _____

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E2N4579F/R	11:25	AIBLKLN	AIBLKLN		AQ	160*	101	174*	97	1			✓		
E2N4580F/R	11:40	AR16603LN	AR16603LN		AQ					1			✓		
E2N4581F/R	11:55	AR12543LN	AR12543LN		AQ					1			✓		
E2N4582F/R	12:09	AR12423LN	AR12423LN		AQ					1			—		
E2N4583F/R	12:24	AR12483LN	AR12483LN		AQ					1			✓		
E2N4584F/R	13:12	MB-79940	MB-79940	79940	SL	78	70	87	69	1			✓		
E2N4585F/R	13:27	LCS-79940	LCS-79940	79940	SL	82	78	91	75	1			✓		
E2N4586F/R	13:42	LCSD-79940	LCSD-79940	79940	SL	75	77	82	74	1			✓		
E2N4587F/R	13:56	N2060-01A	SWTPSS-01-10301	79940	SL	74	63	82	64	1			✓		
E2N4588F/R	14:11	N2114-01A	SS-2C	79940	SL	70	66	76	62	1			✓		
E2N4589F/R	14:26	N2114-02A	SS-2B	79940	SL	68	70	75	61	1			✓		
E2N4590F/R	14:40	N2114-03A	SS-1B	79940	SL	70	73	78	67	1			✓		
E2N4591F/R	14:55	N2114-04A	SS-1A	79940	SL	72	67	78	62	1			✓		
E2N4592F/R	15:10	N2114-05A	SS-2E	79940	SL	66	59*	71	58*	1			✓		48
E2N4593F/R	15:24	N2114-06A	SS-1E	79940	SL	74	63	80	63	1			✓		
E2N4594F/R	15:39	N2114-07A	SS-2A	79940	SL	58	57*	63	54*	1			✓		JC
E2N4595F/R	15:54	N2114-08A	SS-1C	79940	SL	80	71	88	69	1			✓		
E2N4596F/R	16:09	MB-79923	MB-79923	79923	SL	35	34*	37	33*	1			—		BR
E2N4597F/R	16:23	LCS-79923	LCS-79923	79923	SL	74	72	81	70	1			✓		
E2N4598F/R	16:38	N2074-01A	SS-BG1	79923	SL	77	75	85	69	1			✓		48
E2N4599F/R	16:53	N2074-02A	SS-BG2	79923	SL	76	75	84	68	1			✓		
E2N4600F/R	17:07	N2074-03A	SS-BG3	79923	SL	70	67	77	64	1			✓		
E2N4601F/R	17:22	N2074-03AMS	SS-BG3MS	79923	SL	76	74	83	67	1	R	R	✓		
E2N4602F/R	17:37	N2074-03AMSD	SS-BG3MSD	79923	SL	76	69	85	67	1			✓		
E2N4603F/R	17:51	N2074-04A	SS-BG4	79923	SL	103	104	117	95	1			✓		54
E2N4604F/R	18:06	N2074-05A	SS-BG5	79923	SL	79	72	87	69	1			✓		48
E2N4605F/R	18:20	N2074-06A	SS-BG6	79923	SL	67	64	72	58*	1	E	E	—		BR 20XDL 54

\+ One or more target compounds are above the calibration range
* One or more spike compounds are outside of control limits
R Surrogate is outside of control limits
E Surrogate is diluted

JW 11/12/14

N2024

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E2

Spectrum Analytical, Inc. RI Division E2 Injection Log
GC Semivolatiles Laboratory

METHOD: 8082
ICAL DATE: 11/6/14
ANALYST: JW/GMA
START BATCH: 141111F.B
END BATCH: 141111F.B
Start: 11-NOV-14 11:25
End: 12-NOV-14 02:09

Internal Standard:
Comments: STDs on Pg 61

Inlet Maintenance By:
Liner :
Column :
Inlet Seal: ↓
Septum :

Reviewed By: 11/12/14
Manual Integration: NA
MI Review: NA
ICV:

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	FRONT DCB	REAR TCMX	REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E2N4606F/R	18:35	N2074-07A	SS-1F	79923	SL	75	69	83	66	1			✓		
E2N4607F/R	18:50	N2074-08A	SS-2F	79923	SL	97	102	108	84	1			✓		
E2N4608F/R	19:04	N2074-09A	SS-3F	79923	SL	80	75	88	68	1			✓		
E2N4609F/R	19:19	N2074-10A	SS-2D	79923	SL	77	78	86	70	1			✓		
E2N4610F/R	19:34	N2074-11A	SS-1D	79923	SL	69	69	76	63	1			✓		54
E2N4611F/R	19:48	AIBLKLO	AIBLKLO		AQ	162*	101	177*	99	1			✓		
E2N4612F/R	20:03	AR16603LO	AR16603LO		AQ					1			✓		
E2N4613F/R	20:18	AR12543LO	AR12543LO		AQ					1			✓		
E2N4614F/R	20:32	AR12423LO	AR12423LO		AQ					1			—		
E2N4615F/R	20:47	AR12483LO	AR12483LO		AQ					1			✓		
E2N4616F/R	21:02	MB-79845	MB-79845	79845	AQ	75	71	84	68	1			✓		
E2N4617F/R	21:16	LCS-79845	LCS-79845	79845	AQ	72	69	80	66	1			✓		
E2N4618F/R	21:31	LCSD-79845	LCSD-79845	79845	AQ	63	60	69	59	1			✓		
E2N4619F/R	21:45	N2027-04C	MW03-16I-NWG-10	79845	AQ	64	34*	70	34*	1			✓		
E2N4620F/R	22:00	N2027-06A	FD03-102814	79845	AQ	68	40*	75	39*	1			✓		
E2N4621F/R	22:15	MB-79876	MB-79876	79876	AQ	69	65	77	64	1			✓		
E2N4622F/R	22:29	LCS-79876	LCS-79876	79876	AQ	69	63	76	62	1			✓		
E2N4623F/R	22:44	N2059-01E	DRUM SAMPLE	79876	AQ	70	38*	76	37*	1			✓		
E2N4624F/R	22:59	N2066-09C	HR-1	79876	AQ	62	34*	68	33*	1			✓		
E2N4625F/R	23:13	N2066-09CMS	HR-1MS	79876	AQ	55	31*	59	30*	1			✓		
E2N4626F/R	23:28	N2066-09CMSD	HR-1MSD	79876	AQ	49	26*	53	26*	1			✓		
E2N4627F/R	23:42	N2066-10C	HR-2	79876	AQ	51	29*	55	29*	1			✓		
E2N4628F/R	23:57	MB-79913	MB-79913	79913	AQ	68	40	74	40*	1			—		
E2N4629F/R	00:12	LCS-79913	LCS-79913	79913	AQ	24*	16*	25*	15*	1	R	R	—		
E2N4630F/R	00:26	LCSD-79913	LCSD-79913	79913	AQ	67	42	74	40	1	ER	R	—		BR
E2N4631F/R	00:41	N2027-17B	FB03-103014	79913	AQ	48	40*	51	30*	1			✓		
E2N4632F/R	00:56	N2124-01A	WC01-20141020	79913	AQ	56	22*	60	23*	1			✓		

- One or more target compounds are above the calibration range
- One or more spike compounds are outside of control limits
- Surrogate is outside of control limits
- Surrogate is diluted

JW 11/12/14

Logbook ID 60.0176-09/14

N2027

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E2

Spectrum Analytical, Inc. RI Division E2 Injection Log
GC Semivolatiles Laboratory

METHOD: 8082 ANALYST: JW/GMA
ICAL DATE: 11/6/14

START BATCH: 141111F.B Start: 11-NOV-14 11:25
END BATCH: 141111F.B End: 12-NOV-14 02:09

Internal Standard:
Comments: STD's on Pg 61

Inlet Maintenance By:
Liner :
Column :
Inlet Seal:
Septum :

Reviewed By: 11/12/14 Manual Integration: NA MI Review: 11/12/14 ICV: _____

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	FRONT DCB	REAR TCMX	REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E2N4633F/R	01:11	AIBLKLP	AIBLKLP		AQ	162*	107	177*	103	1			✓		
E2N4634F/R	01:25	AR16603LP	AR16603LP		AQ					1			✓		
E2N4635F/R	01:40	AR12543LP	AR12543LP		AQ					1			✓		
E2N4636F/R	01:54	AR12423LP	AR12423LP		AQ					1			✓		
E2N4637F/R	02:09	AR12483LP	AR12483LP		AQ					1			✓		

E - One or more target compounds are above the calibration range
R - One or more spike compounds are outside of control limits
* - Surrogate is outside of control limits
D - Surrogate is diluted

Comments

JW 11/12/14

Reviewed_____

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E2

Spectrum Analytical, Inc. RI Division E2 Injection Log
GC Semivolatiles Laboratory

METHOD: 8082
ICAL DATE: 11/6/14
ANALYST: JW/GMA
START BATCH: 141112F.B
END BATCH: 141112F.B
Start: 12-NOV-14 16:25
End: 12-NOV-14 20:20

Internal Standard:
Comments: STDs on Pg 61

Inlet Maintenance By:
Liner :
Column :
Inlet Seal:
Septum :

Reviewed By: 11/13/14
Manual Integration: NA
MI Review: NA
ICV:

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	FRONT DCB	REAR TCMX	REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E2N4685F/R	16:25	AIBLKLS	AIBLKLS		AQ	165*	112	180*	108	1			✓		
E2N4686F/R	16:40	AR16603LS	AR16603LS		AQ					1			✓		
E2N4687F/R	16:54	AR12543LS	AR12543LS		AQ					1			✓		
E2N4688F/R	17:09	AR12423LS	AR12423LS		AQ					1			—		
E2N4689F/R	17:24	AR12483LS	AR12483LS		AQ					1			—		
E2N4690F/R	17:38	MB-79923	MB-79923	79923	SL	77	78	86	76	1			✓		
E2N4691F/R	17:53	N2074-06A	SS-BG6	79923	SL	82	98	76	97	20			✓		54
E2N4692F/R	18:08	MB-79913	MB-79913	79913	AQ	65	41	72	40	1					
E2N4693F/R	18:22	LCS-79913	LCS-79913	79913	AQ	23*	16*	24*	16*	1	R	R			LCSL
E2N4694F/R	18:37	LCSD-79913	LCSD-79913	79913	AQ	66	42	73	42	1	R	R			Dnt RPT
E2N4695F/R	18:52	N2027-17B	FB03-103014	79913	AQ	54	23*	58	23*	1					Rpt / RV
E2N4696F/R	19:06	N2124-01A	WC01-20141020	79913	AQ	46	29*	50	30*	1					RV
E2N4697F/R	19:21	AIBLKLT	AIBLKLT		AQ	168*	112	185*	110	1			✓		
E2N4698F/R	19:36	AR16603LT	AR16603LT		AQ					1			✓		
E2N4699F/R	19:51	AR12543LT	AR12543LT		AQ					1			✓		
E2N4700F/R	20:05	AR12423LT	AR12423LT		AQ					1			—		
E2N4701F/R	20:20	AR12483LT	AR12483LT		AQ					1			—		

E - One or more target compounds are above the calibration range
R - One or more spike compounds are outside of control limits
- Surrogate is outside of control limits
- Surrogate is diluted

Reviewed

JW 11/13/14

N2027

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E2

Spectrum Analytical, Inc. RI Division E2 Injection Log
GC Semivolatiles Laboratory

METHOD: 8082
ICAL DATE: 11/6/14
ANALYST: JW/GMA
START BATCH: 141113AF.B Start: 13-NOV-14 13:35
END BATCH: 141113AF.B End: 13-NOV-14 15:55

Internal Standard:
Comments: STDs on pg 61

Inlet Maintenance By:
Liner :
Column :
Inlet Seal:
Septum :

Reviewed By GMA 11/14/14 Manual Integration: NA MI Review: MA ICV: _____

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E2N4759F/R	13:35	AIBLKLX	AIBLKLX		AQ	179*	118	196*	116	1			✓		
E2N4760F/R	13:50	AR16603LX	AR16603LX		AQ					1			✓		
E2N4761F/R	14:04	AR12543LX	AR12543LX		AQ					1			—		
E2N4762F/R	14:27	MB-80013	MB-80013	80013	AQ	65	63	72	62	1			✓		
E2N4763F/R	14:42	LCS-80013	LCS-80013	80013	AQ	67	66	74	65	1			✓		
E2N4764F/R	14:56	LCSD-80013	LCSD-80013	80013	AQ	66	62	72	62	1			✓		
E2N4765F/R	15:11	N2027-17BRE	FB03-103014RE	80013	AQ	52	38*	57	38*	1			✓		
E2N4766F/R	15:26	N2124-01ARE	WC01-20141020RE	80013	AQ	44	37*	48	35*	1			✓		
E2N4767F/R	15:40	AIBLKLX ✓	AIBLKLX		AQ	180*	120	199*	119	1			✓		
E2N4768F/R	15:55	AR16603LX ✓	AR16603LX		AQ					1			✓		

E - One or more target compounds are above the calibration range
R - One or more spike compounds are outside of control limits
* - Surrogate is outside of control limits
D - Surrogate is diluted

Reviewed _____

JW 11/13/14

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E6

N202

Spectrum Analytical, Inc. RI Division E6 Injection Log
GC Semivolatiles Laboratory

METHOD: 8081
ICAL DATE: 10/29/14
ANALYST: [illegible]

START BATCH: 141027BF.B Start: 27-OCT-14 16:05
END BATCH: 141027BF.B End: 27-OCT-14 21:34

Inlet Maintenance By:
Liner :
Column : b
Inlet Seal:
Septum :

Internal Standard:
Comments: 8081 ICAL

Reviewed By: [illegible] 10/29/14 Manual Integration: [illegible] 10/29/14 MI Review: [illegible] 10/29/14 ICV: _____

FILE	TIME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
E6B3843F/R	16:05	PEMF6	PEMF6		AQ					1					PW140521 D
E6B3844F/R	16:33	TOXAPH1F6	TOXAPH1F6		AQ					1					MI_F28__R28
E6B3845F/R	17:00	TOXAPH2F6	TOXAPH2F6		AQ					1					MI_F28__R28
E6B3846F/R	17:28	TOXAPH3F6	TOXAPH3F6		AQ					1					MI_F28__R28
E6B3847F/R	17:55	TOXAPH4F6	TOXAPH4F6		AQ					1					MI_F28
E6B3848F/R	18:23	TOXAPH5F6	TOXAPH5F6		AQ					1					MI_F28__R28_2
E6B3849F/R	18:50	INDC1F6	INDC1F6		AQ					1					
E6B3850F/R	19:17	INDC2F6	INDC2F6		AQ					1					
E6B3851F/R	19:45	INDC3F6	INDC3F6		AQ					1					
E6B3852F/R	20:12	INDC4F6	INDC4F6		AQ					1					
E6B3853F/R	20:40	INDC5F6	INDC5F6		AQ					1					PW140521
E6B3854F/R	21:07	PIBLKFA	PIBLKFA		AQ	49	51	50	56	1					
E6B3855F/R	21:34	PEMFA	PEMFA		AQ					1					

D BANDBAG

E - One or more target compounds are above the calibration range
R - One or more spike compounds are outside of control limits
* - Surrogate is outside of control limits
D - Surrogate is diluted

Reviewed [illegible] 10/29/14

ctrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E6

al, Inc. RI Division E6 Injection Log
Laboratory

METHOD: 8081
ICAL DATE: 10/27/14
ANALYST: [illegible]
START BATCH: 141029F.B
END BATCH: 141029F.B
Start: 29-OCT-14 13:39
End: 29-OCT-14 23:15

Inlet Maintenance By:
Liner :
Column :
Inlet Seal: ↓
Septum :

STDs Page 93

Manual Integration: WM MI Review: MA ICV: _____

LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
PIBLKFF	PIBLKFF		AQ	47	45	55	48	1			✓		
PEMFF	PEMFF		AQ					1			✓		
TOXAPH3FF	TOXAPH3FF		AQ					1			✓		
INDC3FICV	INDC3FICV		AQ					1			✓		
INDC3FF	INDC3FF		AQ					1			✓		Aroclor endrin Grest
TC3FF	TC3FF		AQ					1			✓		
MB-79646	MB-79646	79647	AQ	63	63	70	64	1			✓		
LCS-79647	LCS-79647	79647	AQ	71	70	76	70	1			✓		
LCSD-79647	LCSD-79647	79647	AQ	68	66	73	70	1			✓		
N1925-02B	IDW SOLID	79647	AQ	62	56	66	54	1			✓		
N1953-03D	BED03-SO-IDW-10	79647	AQ	68	61	70	61	1			✓		
N1953-03DMS	BED03-SO-IDW-10	79647	AQ	69	59	71	57	1			✓		
MB-79644	MB-79644	79644	AQ	81	82	86	80	1			✓		
LCS-79644	LCS-79644	79644	AQ	79	79	85	79	1			✓		
LCSD-79644	LCSD-79644	79644	AQ	75	77	77	70	1			✓		
N1953-01C	BED03-AQ-IDW-10	79644	AQ	7.1*	3.1*	1.5*	1.7*	1			✓		
PIBLKFG	PIBLKFG		AQ	48	50	52	49	1			✓		
PEMFG	PEMFG		AQ					1			✓		
INDC3FG	INDC3FG		AQ					1			✓		
TOXAPH3FG	TOXAPH3FG		AQ					1			✓		
TC3FG	TC3FG		AQ					1			✓		

rget compounds are above the calibration range
ike compounds are outside of control limits
utside of control limits
iluted

Reviewed _____ 10/30/14

rum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E6

Inc. RI Division E6 Injection Log
oratory

METHOD: 8081 ANALYST: [illegible]
ICAL DATE: 11/10/14

START BATCH: 141106AF.B Start: 07-NOV-14 00:47
END BATCH: 141106AF.B End: 07-NOV-14 09:29

STDs Page 93

Inlet Maintenance By:
Liner :
Column :
Inlet Seal: 5
Septum :

14

Manual Integration: [illegible] MI Review: 11/10/14 ICV: _____

LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
BLKEB	PIBLKEB		AQ	114	102	105	91	1					
BLKEB	PIBLKEB		AQ	112	104	105	94	1					
MEB	PEMEB		AQ					1					
DC3EB	INDC3EB		AQ					1					
CAPH3EB	TOXAPH3EB		AQ					1					
EB	TC3EB		AQ					1					
79853	MB-79853	79854	AQ	56	48	52	46	1					
-79854	LCS-79854	79854	AQ	60	52	58	50	1					
D-79854	LCSD-79854	79854	AQ	62	52	57	52	1					
60-01A	SWTPSS-01-10301	79854	AQ	72	57	69	55	1					
60-01AMS	SWTPSS-01-10301	79854	AQ	72	53	69	53	1	R				
79843	MB-79843	79843	AQ	73	72	68	62	1					
-79843	LCS-79843	79843	AQ	70	80	65	60	1					
D-79843	LCSD-79843	79843	AQ	68	69	63	59	1					
27-04C	MW03-16I-NWG-10	79843	AQ	64	38	58	30	1					
27-06A	FD03-102814	79843	AQ	66	43	62	35	1					
LKEC	PIBLKEC		AQ	118	110	108	97	1					
C3EC	INDC3EC		AQ					1					
APH3EC	TOXAPH3EC		AQ					1					
EC	TC3EC		AQ					1					

: compounds are above the calibration range
compounds are outside of control limits
de of control limits

Reviewed_____

Cerp 11/10/14

Spectrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E6

tical, Inc. RI Division E6. Injection Log
es Laboratory

METHOD: 8081
ICAL DATE: 11/14/14
ANALYST: CWP

START BATCH: 141114F.B
END BATCH: 141114F.B

Start: 14-NOV-14 14:30
End: 15-NOV-14 02:27

ard:

8081 ICAL

Inlet Maintenance By:
Liner :
Column :
Inlet Seal:
Septum :

11/18/14

Manual Integration: CWA MI Review: NK ICV: PW140521C

ME	LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
:30	PEMG6	PEMG6		AQ					1			✓		PW140521 DC BRACKETING I
:44	TOXAPH1G6	TOXAPH1G6		AQ					1			✓		
:58	TOXAPH2G6	TOXAPH2G6		AQ					1			✓		
:12	TOXAPH3G6	TOXAPH3G6		AQ					1			✓		
:26	TOXAPH4G6	TOXAPH4G6		AQ					1			✓		
:40	TOXAPH5G6	TOXAPH5G6		AQ					1			✓		
:54	TC3G6	TC3G6		AQ					1			✓		
:08	INDC1G6	INDC1G6		AQ					1			✓		
:22	INDC2G6	INDC2G6		AQ					1			✓		
:37	INDC3G6	INDC3G6		AQ					1			✓		
:51	INDC4G6	INDC4G6		AQ					1			✓		
:05	INDC5G6	INDC5G6		AQ					1			✓		
:19	INDC5ICVGA	INDCICVGA		AQ					1			✓		PW140521 I
:33	PIBLKGA	PIBLKGA		AQ	57	57	56	55	1			✓		
:47	PEMGA	PEMGA		AQ					1			✓		
:01	INDC3GA	INDC3GA		AQ					1			✓		
:15	TOXAPH3GA	TOXAPH3GA		AQ					1			✓		
:30	TC3GA	TC3GA		AQ					1			✓		
:44	MB-79985	MB-79985	79985	AQ	56	59	55	57	1			✓		
:58	LCS-79985	LCS-79985	79985	AQ	77	76	76	72	1			✓		
:12	LCSD-79985	LCSD-79985	79985	AQ	58	57	58	55	1	R	R	—		KM
:26	N2137-02B	ET-01-110414-GR	79985	AQ	63	60	62	57	1			✓		
:40	PIBLKGC	PIBLKGC		AQ	57	58	56	56	1			✓		
:54	PEMGC	PEMGC		AQ					1			✓		
:08	INDC3GC	INDC3GC		AQ					1			✓		
:22	TOXAPH3GC	TOXAPH3GC		AQ					1			✓		
:36	TC3GC	TC3GC		AQ					1			✓		

* = target compounds are above the calibration range

ctrum Analytical, Inc. RI Division - PEST/PCB RUN LOGBOOK: INSTRUMENT E6

cal, Inc. RI Division E6 Injection Log
Laboratory

METHOD: 8081
ICAL DATE: 11/14/14
ANALYST: DMD

START BATCH: 141114F.B Start: 14-NOV-14 14:30
END BATCH: 141114F.B End: 15-NOV-14 02:27

i: STDs Page 7

Inlet Maintenance By:
Liner :
Column :
Inlet Seal: b
Septum :

11/15/14

Manual Integration: DMD MI Review: MB ICV: AW140521 I

LAB ID	CLIENT ID	PREP BATCH	MT	SURROGATES FRONT TCMX	SURROGATES FRONT DCB	SURROGATES REAR TCMX	SURROGATES REAR DCB	DILN	FLAGS F	FLAGS R	ANALYST CHECK F	ANALYST CHECK R	COMMENTS
0 MB-79939	MB-79939	79939	SL	71	71	68	69	1			✓		
4 LCS-79939	LCS-79939	79939	SL	84	85	80	80	1			✓		
9 LCSD-79939	LCSD-79939	79939	SL	79	79	75	76	1			✓		
3 N2114-01A	SS-2C	79939	SL	60	64	60	63	1			✓		
7 N2114-02A	SS-2B	79939	SL	56	69	59	62	1			✓		
1 N2114-03A	SS-1B	79939	SL	59	68	59	60	1			✓		
5 N2114-04A	SS-1A	79939	SL	59	70	60	68	1			✓		
9 N2114-05A	SS-2E	79939	SL	49	60	53	53*	1			✓		
3 N2114-06A	SS-1E	79939	SL	57	69	56	66	1			✓		
7 N2114-07A	SS-2A	79939	SL	49	73	48	62	1	E	E	—		
1 N2114-08A	SS-1C	79939	SL	63	73	64	68	1			✓		
5 N2114-07A	SS-2A	79939	SL	54	71	57	49D	(5)			✓		TC
9 PIBLKGD	PIBLKGD		AQ	56	55	57	47	1			✓		
3 PEMGD	PEMGD		AQ					1			✓		
7 INDC3GD	INDC3GD		AQ					1			✓		DDT ↓ R
1 TOXAPH3GD	TOXAPH3GD		AQ					1			✓		
5 TC3GD	TC3GD		AQ					1			✓		
9 MB-79912	MB-79912	79912	AQ	70	67	71	63	1			✓		
3 LCS-79912	LCS-79912	79912	AQ	69	67	70	66	1			✓		
7 LCSD-79912	LCSD-79912	79912	AQ	69	66	69	66	1			✓		
1 N2027-17B	FB03-103014	79912	AQ	67	49	67	46	1			✓		
5 PIBLKGE	PIBLKGE		AQ	58	56	59	52	1			✓		
9 INDC3GE	INDC3GE		AQ					1			✓		
3 TOXAPH3GE	TOXAPH3GE		AQ					1			✓		
7 TC3GE	TC3GE		AQ					1			✓		

target compounds are above the calibration range
spike compounds are outside of control limits
outside of control limits

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 8015D GRO, Gasoline Range Organic (GRO) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D GRO

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: V4
Instrument Type: GC-FID/PID

Description: HP5890 A
Manufacturer: Hewlett-Packard
Model: 5890
GC Column used: 30 m X 0.53 mm ID [um thickness] RTX-502.2 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW03-03SA-NWG-103014 (N2027-15AMS) and MW03-03SA-NWG-103014 (N2027-15AMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

NA.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

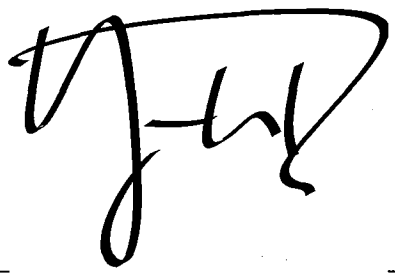
No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

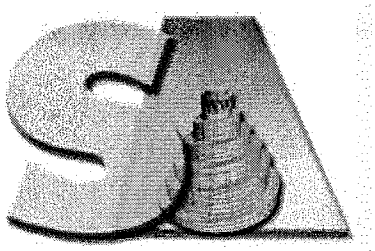
- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____11/20/2014_____



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

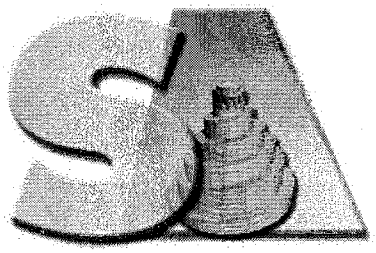
A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

Data File: \\avogadro\organics\V4.i\141030.B\V4D08170.D
Report Date: 06-Nov-2014 15:17

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 30-OCT-2014 10:08
Lab File ID: V4D08170.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504D Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141030.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	88131	0.010	2.30744	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	31690	0.010	6.97686	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141030.B\V4D08183.D
Report Date: 06-Nov-2014 15:17

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 30-OCT-2014 15:34
Lab File ID: V4D08183.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504E Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141030.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	82377	0.010	8.68509	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	30232	0.010	11.25597	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141106.B\V4D08190.D
Report Date: 06-Nov-2014 15:17

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 06-NOV-2014 10:54
Lab File ID: V4D08190.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504F Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141106.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	95477	0.010	-5.83577	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	33214	0.010	2.50342	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141106.B\V4D08200.D
Report Date: 06-Nov-2014 15:17

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 06-NOV-2014 14:41
Lab File ID: V4D08200.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504G Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141106.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	92654	0.010	-2.70701	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	33471	0.010	1.74989	20.00000	Averaged

N2027

CLIENT: Tetra Tech, Inc.
Work Order: N2027
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **MB-79767**	SampType: **MBLK**	TestCode: **GRO_W**			Prep Date: **10/30/14 8:05**			Run ID: **V4_141030A**				
Client ID: **MB-79767**	Batch ID: **79767**	Units: **ug/L**			Analysis Date: **10/30/14 11:19**			SeqNo: **2176211**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	17.96		5.0	20.00	0	89.8	87	112	0			

Sample ID: **MB-79894**	SampType: **MBLK**	TestCode: **GRO_W**			Prep Date: **11/06/14 7:38**			Run ID: **V4_141106A**				
Client ID: **MB-79894**	Batch ID: **79894**	Units: **ug/L**			Analysis Date: **11/06/14 12:26**			SeqNo: **2182416**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	19.56		5.0	20.00	0	97.8	87	112	0			

Sample ID: **LCS-79767**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **10/30/14 8:05**			Run ID: **V4_141030A**				
Client ID: **LCS-79767**	Batch ID: **79767**	Units: **ug/L**			Analysis Date: **10/30/14 10:54**			SeqNo: **2176210**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	557.1	100 ^	100	500.0	0	111	80	120	0			
Surrogate: Bromofluorobenzene	17.61		5.0	20.00	0	88.0	87	112	0			

Sample ID: **LCS-79894**	SampType: **LCS**	TestCode: **GRO_W**			Prep Date: **11/06/14 7:38**			Run ID: **V4_141106A**				
Client ID: **LCS-79894**	Batch ID: **79894**	Units: **ug/L**			Analysis Date: **11/06/14 11:15**			SeqNo: **2182413**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	557.1	100 ^	100	500.0	0	111	80	120	0			
Surrogate: Bromofluorobenzene	21.10		5.0	20.00	0	106	87	112	0			

Sample ID: **N2027-15AMS**	SampType: **MS**	TestCode: **GRO_W**			Prep Date: **11/06/14 7:38**			Run ID: **V4_141106A**				
Client ID: **MW03-03SA-NWG-10**	Batch ID: **79894**	Units: **ug/L**			Analysis Date: **11/06/14 13:57**			SeqNo: **2182420**				
Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	556.9	100 ^	100	500.0	0	111	60	140	0			
Surrogate: Bromofluorobenzene	18.10		5.0	20.00	0	90.5	87	112	0			

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
LOD - Limit of Detection
LOQ - Limit of Quantitation
B - Analyte detected in the associated Method Blank
^ Qualified to the Limit of Detection (LOD)

CLIENT: Tetra Tech, Inc.
Work Order: N2027
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: **N2027-15AMSD**	SampType: **MSD**	TestCode: **GRO_W**	Prep Date: **11/06/14 7:38**	Run ID: **V4_141106A**			
Client ID: **MW03-03SA-NWG-10**	Batch ID: **79894**	Units: **ug/L**	Analysis Date: **11/06/14 14:18**	SeqNo: **2182421**			

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	551.6	100 ^	100	500.0	0	110	60	140	556.9	0.957	20	
Surrogate: Bromofluorobenzene	18.51		5.0	20.00	0	92.5	87	112	0			

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
LOD - Limit of Detection
LOQ - Limit of Quantitation
B - Analyte detected in the associated Method Blank
^ Qualified to the Limit of Detection (LOD)

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO
CAL ID: SS-VW141006A
ANALYST: WL
INITIAL CAL: 10/6/14
IS/SS ID: STD-VW141006B
LCS-VW141006C
DATE: 10/8/14
COMMENTS:
Reviewed by: 10-9-14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141006.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	V4d07830.d	1.	5ML,VSTD2.54A,VSTD2.54A	OK	06 Oct 2014 10:27
2	4	V4d07831.d	1.	5ML,VSTD0054A,VSTD0054A	OK	06 Oct 2014 10:58
3	5	V4d07832.d	1.	5ML,VSTD0204A,VSTD0204A	OK	06 Oct 2014 11:25
4	6	V4d07833.d	1.	5ML,VSTD0504A,VSTD0504A	OK	06 Oct 2014 11:50
5	7	V4d07834.d	1.	5ML,VSTD1004A,VSTD1004A	OK	06 Oct 2014 12:13
6	8	V4d07835.d	1.	5ML,VSTD2004A,VSTD2004A	OK	06 Oct 2014 12:52
7	9	V4d07836.d	1.	5ML,VICV0504A,VICV0504A	OK	06 Oct 2014 13:19

WL 10/8/14

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO-S CAL ID: SS-VW141006A ANALYST: WL

INITIAL CAL: 10/6/14 IS/SS ID: STD-VW141006B DATE: 10/30/14
LCS-VW141006C

COMMENTS: Reviewed by: 10/31/14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.i\141030.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	V4d08170.d	1.	5ML,VSTD0504D,VSTD0504D	OK	30 Oct 2014 10:08
2	2	V4d08171.d	1.	5ML,LCS-79712,LCS-79712,79712	OK	30 Oct 2014 10:31
3	3	V4d08172.d	1.	5ML,LCS-79767,LCS-79767,79767	OK	30 Oct 2014 10:54
4	4	V4d08173.d	1.	5ML,MB-79767,MB-79767,79767	OK	30 Oct 2014 11:19
5	5	V4d08174.d	1.	5ML,MB-79712,MB-79712,79712	OK	30 Oct 2014 11:44
6	6	V4d08175.d	1.	5ML,N2031-01B,,79712	OK	30 Oct 2014 12:06
7	7	V4d08176.d	1.	5ML,N2027-02B,,79767	OK	30 Oct 2014 12:36
8	8	V4d08177.d	1.	5ML,N2027-04B,,79767	OK	30 Oct 2014 13:01
9	9	V4d08178.d	1.	5ML,N1823-02A,,79712	OK	30 Oct 2014 13:22
10	255	V4d08179.d	1.	5ML,N1823-04A,,79712	OK	30 Oct 2014 13:44
11	255	V4d08180.d	1.	5ML,N2027-08B,,79767	OK	30 Oct 2014 14:05
12	255	V4d08181.d	1.	5ML,N2027-10B,,79767	OK	30 Oct 2014 14:36
13	255	V4d08182.d	1.	5ML,N2027-12B,,79767	OK	30 Oct 2014 15:10
14	255	V4d08183.d	1.	5ML,VSTD0504E,VSTD0504E	OK	30 Oct 2014 15:34

WL 10/31/14

Logbook ID 90.0065-10/14

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO_S(W) CAL ID: SS-VW141006A ANALYST: WL

INITIAL CAL: 10/6/14 IS/SS ID: STD-VW141006B
LCS-VW141006C DATE: 11/6/14

COMMENTS: Reviewed by: WLS 11/6/14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141106.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	V4d08190.d	1.	5ML,VSTD0504F,VSTD0504F	OK	06 Nov 2014 10:54
2	2	V4d08191.d	1.	5ML,LCS-79894,LCS-79894,79894	OK	06 Nov 2014 11:15
3	3	V4d08192.d	1.	5ML,LCS-79895,LCS-79895,79895	OK	06 Nov 2014 11:38
4	4	V4d08193.d	1.	5ML,MB-79895,MB-79895,79895	OK	06 Nov 2014 12:05
5	5	V4d08194.d	1.	5ML,MB-79894,MB-79894,79894	OK	06 Nov 2014 12:26
6	6	V4d08195.d	1.	5ML,N2117-01B,,79895	OK	06 Nov 2014 12:48
7	7	V4d08196.d	1.	5ML,N2027-15A,,79894	OK	06 Nov 2014 13:11
8	1	V4d08197.d	1.	5ML,N2027-17A,,79894	OK	06 Nov 2014 13:34
9	2	V4d08198.d	1.	5ML,N2027-15AMS,,79894	OK	06 Nov 2014 13:57
10	3	V4d08199.d	1.	5ML,N2027-15AMSD,,79894	OK	06 Nov 2014 14:18
11	4	V4d08200.d	1.	5ML,VSTD0504G,VSTD0504G	OK	06 Nov 2014 14:41

WL 11/6/14

Logbook ID 90.0065-10/14

Sample Calculation

Data File: \\avogadro\organics\V4.i\141030.B\V4D08177.D
Report Date: 06-Nov-2014 15:17

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\avogadro\organics\V4.i\141030.B\V4D08177.D
Lab Smp Id: N2027-04B Client Smp ID: MW03-16I-NWG-102814
Inj Date : 30-OCT-2014 13:01
Operator : WL SRC: LIMS Inst ID: V4.i
Smp Info : 5ML,N2027-04B,,79767
Misc Info :
Comment :
Method : \\avogadro\organics\V4.i\141030.B\v4GRO.m
Meth Date : 31-Oct-2014 11:24 wluo Quant Type: ESTD
Cal Date : 06-OCT-2014 12:52 Cal File: V4D07835.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14
Processing Host: TARGET103

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (PPM)	CONCENTRATIONS FINAL (ug/L)
1	Gasoline Range Organics	6.619	9.112	-2.493	11408663	126.465 ✓	130 (M) ✓
$ 2	Bromofluorobenzene	10.140	10.135	0.005	605919	17.7863	18 (M)

QC Flag Legend

M - Compound response manually integrated.

Sample Concentration = $\frac{11408663}{90212} = 126.465$ ✓

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville

Laboratory Workorder / SDG #: N2027

SW846 8015D TPH, Total Petroleum Hydrocarbons (TPH) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D TPH

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510C

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: F1
Instrument Type: GC-FID
Description: HP6890
Manufacturer: Hewlett-Packard

Model: 6890
GC Column used: 30 m X 0.32 mm ID [0.25 um thickness] Rtx-5MS capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW03-03SA-NWG-103014 (N2027-15BMS) and MW03-03SA-NWG-103014 (N2027-15BMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Dilutions:

No sample in this SDG required analysis at dilution.

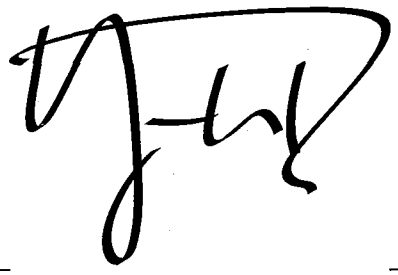
F. Samples:

No other unusual occurrences were noted during sample analysis.

G. Manual Integration

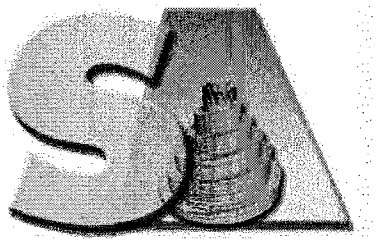
No sample in this SDG were performed with manual integration.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____11/13/2014_____



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

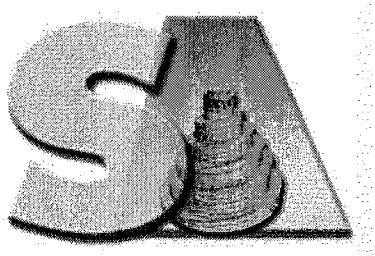
B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

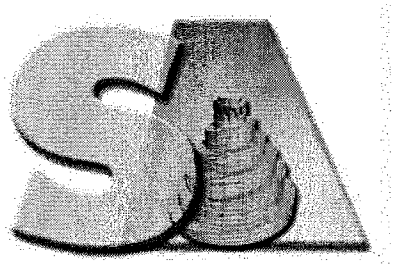


Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

N2027

CLIENT: Tetra Tech, Inc.
Work Order: N2027
Project: CED Area, WE01-Davisville

ANALYTICAL QC SUMMARY REPORT

TPH_W

SW846 8015D TPH -- Total Petroleum Hydrocarbons (TPH) by GC-FID

Sample ID: **MB-79797** SampType: **MBLK** TestCode: **TPH_W** Prep Date: **11/03/14 8:59** Run ID: **F1_141107A**
Client ID: **MB-79797** Batch ID: **79797** Units: **mg/L** Analysis Date: **11/07/14 12:56** SeqNo: **2185375**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	ND	0.20 ^	0.20									
Surrogate: ortho-Terphenyl	0.1030		0.025	0.1000	0	103	50	150	0			

Sample ID: **LCS-79797** SampType: **LCS** TestCode: **TPH_W** Prep Date: **11/03/14 8:59** Run ID: **F1_141107A**
Client ID: **LCS-79797** Batch ID: **79797** Units: **mg/L** Analysis Date: **11/07/14 13:16** SeqNo: **2185377**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.348	0.20 ^	0.20	5.000	0	87.0	60	140	0			
Surrogate: ortho-Terphenyl	0.08262		0.025	0.1000	0	82.6	50	150	0			

Sample ID: **N2027-15BMS** SampType: **MS** TestCode: **TPH_W** Prep Date: **11/03/14 8:59** Run ID: **F1_141107A**
Client ID: **MW03-03SA-NWG-10** Batch ID: **79797** Units: **mg/L** Analysis Date: **11/07/14 16:19** SeqNo: **2185387**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	3.270	0.20 ^	0.20	5.000	0	65.4	50	150	0			
Surrogate: ortho-Terphenyl	0.05617		0.025	0.1000	0	56.2	50	150	0			

Sample ID: **N2027-15BMSD** SampType: **MSD** TestCode: **TPH_W** Prep Date: **11/03/14 8:59** Run ID: **F1_141107A**
Client ID: **MW03-03SA-NWG-10** Batch ID: **79797** Units: **mg/L** Analysis Date: **11/07/14 16:39** SeqNo: **2185389**

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Total Petroleum Hydrocarbon	4.188	0.20 ^	0.20	5.000	0	83.8	50	150	3.270	24.6	30	
Surrogate: ortho-Terphenyl	0.07491		0.025	0.1000	0	74.9	50	150	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
m14.10.24.0936 J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

Response Factor Report FID1

Method Path : O:\F1.I\QMETHODS\
Method File : TPH0717.M
Title : TPH, ETPH, DRO, Fuel ID, ORO
Last Update : Thu Jul 17 14:13:45 2014
Response Via : Initial Calibration

Calibration Files
5 =F1J3033.D 20 =F1J3034.D 50 =F1J3035.D
80 =F1J3036.D 100 =F1J3037.D 120 =F1J3038.D

		Compound	5	20	50	80	100	120	Avg		%RSD
1)	S	1-Chlorooctadeca							0.000		-1.00
2)	S	ortho-Terphenyl	2.830	3.103	2.910	3.255	3.307	3.086	3.084	E5	5.33
3)	H	DRO C10 to C28	2.842	2.831	2.599	3.089	3.059	2.824	2.875	E5	5.59
4)	H	TPH C9 to C36	2.898	2.856	2.622	3.123	3.088	2.856	2.907	E5	5.59
5)	H	Gasoline							0.000		-1.00
6)	H	Jet Fuel							0.000		-1.00
7)	H	Motor Oil/Other							0.000		-1.00
8)	H	Number 2 Fuel							0.000		-1.00
9)	H	Number 4 Fuel							0.000		-1.00
10)	H	Number 6 Fuel							0.000		-1.00
11)	I	5a-Androstane	----------ISTD----------								
12)	S	1-Chlorooctadeca							0.000		-1.00
13)	S	ortho-Terphenyl	0.939	1.011	1.065	1.097	1.063	1.071	1.050		4.86
14)	T	C9 Nonane	0.797	0.784	0.809	0.898	0.822	0.834	0.834		4.68
15)	TD	C10 Decane	0.815	0.807	0.837	0.927	0.853	0.863	0.861		4.85
16)	TD	C12 Dodecane	0.854	0.843	0.879	0.963	0.893	0.902	0.899		4.56
17)	TD	C14 Tetradecane	0.890	0.873	0.913	0.992	0.928	0.932	0.931		4.21
18)	TD	C16 Hexadecane	0.951	0.914	0.946	1.027	0.967	0.966	0.968		3.55
19)	TD	C18 Octadecane	0.940	0.919	0.950	1.033	0.979	0.970	0.972		3.69
20)	TD	C20 Eicosane	0.971	0.945	0.978	1.066	1.015	1.002	1.002		3.77
21)	TD	C22 Docosane	0.977	0.968	0.987	1.081	1.031	1.019	1.016		3.72
22)	TD	C24 Tetracosane	0.997	0.974	0.995	1.092	1.042	1.033	1.028		3.68
23)	TD	C26 Hexacosane	1.011	0.987	1.010	1.110	1.060	1.053	1.045		3.81
24)	TD	C28 Octacosane	1.024	0.993	1.016	1.119	1.067	1.062	1.054		3.85
25)	T	C30 Triacontane	1.017	1.006	1.033	1.138	1.083	1.080	1.069		4.26
26)	T	C32 Dotriaconta	0.986	0.987	1.021	1.123	1.066	1.065	1.051		4.63
27)	T	C36 Hexatriacon	1.229	1.028	1.057	1.162	1.095	1.096	1.113		5.57
28)	H	DRO C10 to C28	0.943	0.922	0.951	1.041	0.984	0.980	0.978		3.91
29)	H	TPH C8 to C40 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
30)	H	TPH C9 to C36 I	0.961	0.930	0.959	1.052	0.993	0.991	0.989		3.86
31)		----------							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data File: \\Avogadro\Organics\F1.I\141107A.B\F1J4085.D
Lab Smp Id: FSTD1001V Client Smp ID: FSTD1001V
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 07 Nov 2014 9:23 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 10 10:23:28 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	304.329 E3	1.3	100	0.00
3	H	DRO C10 to C28	287.452	285.279 E3	0.8	100	0.00
4	H	TPH C9 to C40	290.717	293.542 E3	-1.0	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.069	-1.8	100	0.00
14		C9 Nonane	0.834	0.825	1.1	100	0.00
15		C10 Decane	0.861	0.846	1.7	100	0.00
16		C12 Dodecane	0.899	0.910	-1.2	100	0.00
17		C14 Tetradecane	0.931	0.955	-2.6	100	0.00
18		C16 Hexadecane	0.968	0.985	-1.8	100	0.00
19		C18 Octadecane	0.972	0.987	-1.5	100	0.00
20		C20 Eicosane	1.002	1.026	-2.4	100	0.00
21		C22 Docosane	1.016	1.031	-1.5	100	0.00
22		C24 Tetracosane	1.028	1.028	0.0	100	0.00
23		C26 Hexacosane	1.045	1.106	-5.8	100	0.00
24		C28 Octacosane	1.054	1.144	-8.5	100	0.00
25		C30 Triacontane	1.069	1.169	-9.4	100	0.00
26		C32 Dotriacontane	1.051	1.163	-10.7	100	0.00
27		C36 Hexatriacontane	1.113	1.257	-12.9	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	1.002	-2.5	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.031	-4.2	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.031	-4.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141107A.B\F1J4097.D
Lab Smp Id: FSTD1001W Client Smp ID: FSTD1001W
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 07 Nov 2014 13:37 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 10 10:25:30 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	297.158 E3	3.7	98	0.00
3	H	DRO C10 to C28	287.452	276.751 E3	3.7	97	0.00
4	H	TPH C9 to C40	290.717	285.251 E3	1.9	97	0.00
11	I	5a-Androstane	1.000	1.000	0.0	97	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.070	-1.9	98	0.00
14		C9 Nonane	0.834	0.830	0.5	98	0.00
15		C10 Decane	0.861	0.847	1.6	98	0.00
16		C12 Dodecane	0.899	0.913	-1.6	98	0.00
17		C14 Tetradecane	0.931	0.956	-2.7	98	0.00
18		C16 Hexadecane	0.968	0.986	-1.9	98	0.00
19		C18 Octadecane	0.972	0.987	-1.5	97	0.00
20		C20 Eicosane	1.002	1.026	-2.4	98	0.00
21		C22 Docosane	1.016	0.997	1.9	94	0.00
22		C24 Tetracosane	1.028	1.028	0.0	97	0.00
23		C26 Hexacosane	1.045	1.106	-5.8	97	0.00
24		C28 Octacosane	1.054	1.122	-6.5	96	0.00
25		C30 Triacontane	1.069	1.164	-8.9	97	0.00
26		C32 Dotriacontane	1.051	1.158	-10.2	97	0.00
27		C36 Hexatriacontane	1.113	1.265	-13.7	98	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.997	-1.9	97	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.027	-3.8	97	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.027	-3.8	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141107A.B\F1J4109.D
Lab Smp Id: FSTD1001X Client Smp ID: FSTD1001X
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 07 Nov 2014 17:41 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 10 10:29:02 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	308.104	E3	0.1	101	0.00
3	H	DRO C10 to C28	287.452	286.739	E3	0.2	101	0.00
4	H	TPH C9 to C40	290.717	293.220	E3	-0.9	100	0.00
11	I	5a-Androstane	1.000	1.000		0.0	101	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.073		-2.2	101	0.00
14		C9 Nonane	0.834	0.834		0.0	102	0.00
15		C10 Decane	0.861	0.852		1.0	102	0.00
16		C12 Dodecane	0.899	0.924		-2.8	102	0.00
17		C14 Tetradecane	0.931	0.962		-3.3	102	0.00
18		C16 Hexadecane	0.968	0.997		-3.0	102	0.00
19		C18 Octadecane	0.972	0.997		-2.6	102	0.00
20		C20 Eicosane	1.002	1.032		-3.0	101	0.00
21		C22 Docosane	1.016	1.031		-1.5	101	0.00
22		C24 Tetracosane	1.028	1.022		0.6	100	0.00
23		C26 Hexacosane	1.045	1.083		-3.6	99	0.00
24		C28 Octacosane	1.054	1.082		-2.7	95	0.00
25		C30 Triacontane	1.069	1.123		-5.1	97	0.00
26		C32 Dotriacontane	1.051	1.122		-6.8	97	0.00
27		C36 Hexatriacontane	1.113	1.230		-10.5	99	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.998		-2.0	101	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.021		-3.2	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.021		-3.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141110A.B\F1J4124.D
Lab Smp Id: FSTD1001Y Client Smp ID: FSTD1001Y
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 10 Nov 2014 10:21 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 10 10:39:58 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	282.960 E3	8.3	100	0.00
3	H	DRO C10 to C28	287.452	263.434 E3	8.4	100	0.00
4	H	TPH C9 to C40	290.717	268.533 E3	7.6	100	0.00
11	I	5a-Androstane	1.000	1.000	0.0	100	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.073	-2.2	100	0.00
14		C9 Nonane	0.834	0.837	-0.4	100	0.00
15		C10 Decane	0.861	0.853	0.9	100	0.00
16		C12 Dodecane	0.899	0.915	-1.8	100	0.00
17		C14 Tetradecane	0.931	0.961	-3.2	100	0.00
18		C16 Hexadecane	0.968	0.991	-2.4	100	0.00
19		C18 Octadecane	0.972	0.990	-1.9	100	0.00
20		C20 Eicosane	1.002	1.032	-3.0	100	0.00
21		C22 Docosane	1.016	1.012	0.4	100	0.00
22		C24 Tetracosane	1.028	1.024	0.4	100	0.00
23		C26 Hexacosane	1.045	1.103	-5.6	100	0.00
24		C28 Octacosane	1.054	1.104	-4.7	100	0.00
25		C30 Triacontane	1.069	1.159	-8.4	100	0.00
26		C32 Dotriacontane	1.051	1.161	-10.5	100	0.00
27		C36 Hexatriacontane	1.113	1.108	0.4	100	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.999	-2.1	100	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.018	-2.9	100	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.018	-2.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: \\Avogadro\Organics\F1.I\141110A.B\F1J4127.D
Lab Smp Id: FSTD1001Z Client Smp ID: FSTD1001Z
Misc : | TPH CCAL L5 100 PPM Inst ID: F1.I
Signal(s) : FID1A.CH
Inj Date : 10 Nov 2014 11:24 Operator: TM
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 10 11:43:37 2014
Quant Method : O:\F1.I\QMETHODS\TPH0717Z.M
Quant Title : TPH, ETPH, DRO, Fuel ID, ORO
Response via : Initial Calibration
Volume Inj. : 2 uL
Signal Phase : DB-5MS
Signal Info : 0.32

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
2	S	ortho-Terphenyl	308.426	280.001 E3	9.2	99	0.00
3	H	DRO C10 to C28	287.452	259.851 E3	9.6	99	0.00
4	H	TPH C9 to C40	290.717	265.651 E3	8.6	99	0.00
11	I	5a-Androstane	1.000	1.000	0.0	99	0.00
13	S	ortho-Terphenyl ISTD	1.050	1.071	-2.0	99	0.00
14		C9 Nonane	0.834	0.837	-0.4	99	0.00
15		C10 Decane	0.861	0.849	1.4	99	0.00
16		C12 Dodecane	0.899	0.913	-1.6	99	0.00
17		C14 Tetradecane	0.931	0.958	-2.9	99	0.00
18		C16 Hexadecane	0.968	0.985	-1.8	99	0.00
19		C18 Octadecane	0.972	0.989	-1.7	99	0.00
20		C20 Eicosane	1.002	1.028	-2.6	99	0.00
21		C22 Docosane	1.016	1.007	0.9	99	0.00
22		C24 Tetracosane	1.028	1.018	1.0	99	0.00
23		C26 Hexacosane	1.045	1.096	-4.9	99	0.00
24		C28 Octacosane	1.054	1.093	-3.7	98	0.00
25		C30 Triacontane	1.069	1.146	-7.2	98	0.00
26		C32 Dotriacontane	1.051	1.144	-8.8	98	0.00
27		C36 Hexatriacontane	1.113	1.158	-4.0	104	0.00
28	H	DRO C10 to C28 ISTD	0.978	0.993	-1.5	99	0.00
29	H	TPH C8 to C40 ISTD	0.989	1.016	-2.7	99	0.00
30	H	TPH C9 to C36 ISTD	0.989	1.016	-2.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Date	Lab ID	Client	Method	Filename	Dilution	yes/no	Comments	Analyst

Injection Log

AQ : TPH-AGF
GT : TPH0717

Directory: O:\F1.I\140717A.B

INTER MAINT: 4/ES

ICAL 12167

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	98	F1j3030.d	1.			17 Jul 2014 10:17
2	96	F1j3031.d	1.			17 Jul 2014 10:38
3	100	F1j3032.d	1.	IBLK FW140717A	TPH	17 Jul 2014 11:01
4	1	F1j3033.d	1.	FSTD0051A B	TPH ICAL L1 5 PPM	17 Jul 2014 11:22
5	2	F1j3034.d	1.	FSTD0201A C	TPH ICAL L2 20 PPM	17 Jul 2014 11:43
6	3	F1j3035.d	1.	FSTD0501A D	TPH ICAL L3 50 PPM	17 Jul 2014 12:03
7	4	F1j3036.d	1.	FSTD0801A E	TPH ICAL L4 80 PPM	17 Jul 2014 12:24
8	5	F1j3037.d	1.	FSTD1001A F	TPH ICAL L5 100...	17 Jul 2014 12:44
9	6	F1j3038.d	1.	FSTD1201A G	TPH ICAL L6 120...	17 Jul 2014 13:04
10	7	F1j3039.d	1.	FSTD1501A H	TPH ICAL L7 150...	17 Jul 2014 13:24
11	8	F1j3040.d	1.	FSTD2001A I	TPH ICAL L8 200...	17 Jul 2014 13:45
12	9	F1j3041.d	1.	FICV0501A J	TPH ICV 50 PPM	17 Jul 2014 14:06
13	10	F1j3042.d	1.	FICV50001A	TPH DIESEL 5000...	17 Jul 2014 14:26
14	1	F1j3043.d	1.	FSTD1001B	TPH CCAL 100 PPM	17 Jul 2014 14:47
15	100	F1j3044.d	1.	IBLK FW140717A	TPH	17 Jul 2014 15:07
16	10	F1j3045.d	1.	FICV50001A FW140717S	TPH DIESEL 5000...	17 Jul 2014 15:28
17	2	F1j3046.d	1.	MB-78028,,78028	DRO	17 Jul 2014 15:49
18	3	F1j3047.d	1.	N1085-05A,,78028	DRO	17 Jul 2014 16:09
19	4	F1j3048.d	1.	N1085-06A,,78028	DRO	17 Jul 2014 16:30
20	5	F1j3049.d	1.	N1085-07A,,78028	DRO	17 Jul 2014 16:51
21	6	F1j3050.d	1.	N1085-08A,,78028	DRO	17 Jul 2014 17:12
22	1	F1j3051.d	1.	FSTD1001C	TPH CCAL 100 PPM	17 Jul 2014 17:32
23	100	F1j3052.d	1.	IBLK	TPH	17 Jul 2014 17:53

7/23/14

7/18/14

Reviewed by _____

Spectrum Analytical, Inc. RI Division: TPH/EPH Run Logbook

Date	Lab ID	Client	Method	Filename	Dilution	yes/no	Comments	Analyst

Injection Log

AQ : TPH-AGF
GT : TPH0717(2)

Directory: O:\F1.I\141107A.B

INLET MAINT : NONE

ICAL 121107

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	99	F1j4080.d	1.			07 Nov 2014 08:43
2	99	F1j4081.d	1.			07 Nov 2014 08:47
3	99	F1j4082.d	1.			07 Nov 2014 08:51
4	99	F1j4083.d	1.			07 Nov 2014 08:54
5	96	F1j4084.d	1.			07 Nov 2014 09:02
6	1	F1j4085.d	1.	FSTD1001V ✓ FW1407178	TPH CCAL L5 100...	07 Nov 2014 09:23
7	100	F1j4086.d	1.	IBLK ✓	TPH	07 Nov 2014 09:53
8	30	F1j4087.d	1.	MB-79875,,79875 ✓	TPH	07 Nov 2014 10:13
9	31	F1j4088.d	1.	LCS-79875,,79875 ✓	TPH	07 Nov 2014 10:34
10	32	F1j4089.d	1.	N2059-01E,,79875 ✓	TPH	07 Nov 2014 10:54
11	33	F1j4090.d	1.	N2066-09C,,79875 ✓	TPH	07 Nov 2014 11:14
12	34	F1j4091.d	1.	N2066-09CMS,,79875 ✓	TPH	07 Nov 2014 11:35
13	35	F1j4092.d	1.	N2066-09CMSD,,79875 RR	TPH	07 Nov 2014 11:55
14	36	F1j4093.d	1.	N2066-10C,,79875 RR ✓	TPH	07 Nov 2014 12:15
15	35	F1j4094.d	1.	N2066-09CMSD,,79875 ✓	TPH	07 Nov 2014 12:36
16	37	F1j4095.d	1.	MB-79797,,79797 ✓	TPH	07 Nov 2014 12:56
17	38	F1j4096.d	1.	LCS-79797,,79797 ✓	TPH	07 Nov 2014 13:16
18	1	F1j4097.d	1.	FSTD1001W ✓	TPH CCAL L5 100...	07 Nov 2014 13:37
19	100	F1j4098.d	1.	IBLK ✓	TPH	07 Nov 2014 13:57
20	39	F1j4099.d	1.	N2027-02C,,79797 ✓	TPH	07 Nov 2014 14:17
21	40	F1j4100.d	1.	N2027-04C,,79797 ✓	TPH	07 Nov 2014 14:37
22	41	F1j4101.d	1.	N2027-08C,,79797 ✓	TPH	07 Nov 2014 14:58
23	42	F1j4102.d	1.	N2027-10C,,79797 XRR	TPH	07 Nov 2014 15:18
24	43	F1j4103.d	1.	N2027-12C,,79797 ✓	TPH	07 Nov 2014 15:38
25	44	F1j4104.d	1.	N2027-15B,,79797 ✓	TPH	07 Nov 2014 15:59
26	45	F1j4105.d	1.	N2027-15BMS,,79797 ✓	TPH	07 Nov 2014 16:19
27	46	F1j4106.d	1.	N2027-15BMSD,,79797 ✓	TPH	07 Nov 2014 16:39
28	47	F1j4107.d	1.	N2027-17B,,79797 ✓	TPH	07 Nov 2014 17:00
29	48	F1j4108.d	1.	N2024-01C,,79797,,5 ✓	TPH 10X DIL	07 Nov 2014 17:20
30	1	F1j4109.d	1.	FSTD1001X ✓	TPH CCAL L5 100...	07 Nov 2014 17:41
31	100	F1j4110.d	1.	IBLK ✓	TPH	07 Nov 2014 18:01

TPH C9-C36 see 141107B

TPH C9-C40

TPH C9-C36

11/10/14

11/10/14

N2027

Date	Lab ID	Client	Method	Filename	Dilution	yes/no	Comments	Analyst

Injection Log

AQ: ~~TPH0717~~ TPH-ACF 11/10/14

QT: TPH0717Z

Directory: O:\F1.I\141110A.B

INJECT WITHIN: NONE

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	99	F1j4120.d	1.			10 Nov 2014 09:45
2	99	F1j4121.d	1.			10 Nov 2014 09:48
3	99	F1j4122.d	1.	ICAL 12167		10 Nov 2014 09:52
4	96	F1j4123.d	1.			10 Nov 2014 10:00
5	1	F1j4124.d	1.	FSTD1001Y FW140717.E	TPH CCAL L5 100...	10 Nov 2014 10:21
6	100	F1j4125.d	1.	IBLK	TPH	10 Nov 2014 10:42
7	42	F1j4126.d	1.	N2027-10C,,79797	TPH	10 Nov 2014 11:03
8	1	F1j4127.d	1.	FSTD1001Z	TPH CCAL L5 100...	10 Nov 2014 11:24
9	100	F1j4128.d	1.	IBLK	TPH	10 Nov 2014 11:44

TM 11/10/14

11/10/14

Reviewed by _____

TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **S. ANDERSON** **DATE:** **DECEMBER 15, 2014**

FROM: **MICHELLE L. ALLEN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC/GRO**
FORMER NAVAL CONSTRUCTION BATTALION CENTER (NCBC), DAVISVILLE
CTO WE01
SAMPLE DELIVERY GROUP (SDG) N2224

SAMPLES: 3/Aqueous/VOC/GRO

FD05-111914 MW02-03S-NWG-111914 TB13-111914

Overview

The sample set for NCBC Davisville, CTO WE01, SDG N2224 consisted of two (2) aqueous environmental samples and one (1) trip blank. The three (3) aqueous samples were analyzed for Volatile Organic Compounds (VOC) and Gasoline Range Organics (GRO). One field duplicate pair were included in this Sample Delivery Group (SDG): FD05-111914/MW02-03S-NWG-111914.

The samples were collected by Tetra Tech, Inc. on November 19, 2014 and analyzed by Spectrum Analytical Inc. All analyses were conducted in accordance with SW846 Methods 8260C and 8015D analytical and reporting protocols. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times/Sample Preservation
* • GC/MS Instrument Tuning and System Performance
• Initial and Continuing Calibration Results
* • Laboratory Method and Trip Blank Results
* • Surrogate Spike Recoveries
* • Internal Standard Areas
* • Laboratory Control Sample/Laboratory Control Sample Duplicate Results
* • Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. An EPA Region 1 tier II validation was performed on the data in this SDG. The text of this report has been formulated to address only those areas affecting data quality.

INITIAL AND CONTINUING CALIBRATION RESULTS

The VOC initial calibration performed on 11/21/14 had a Percent Relative Standard Deviations (%RSDs) for bromomethane and tetrachloroethene above the 20% quality control limit. All samples were affected. The non-detected results reported for these compounds in the affected samples were qualified as estimated, (UJ).

The VOC continuing calibration performed on 11/24/14 @ 09:04 had a Percent Difference (%D) for acetone above the 20% quality control limit. FD05-111914 and TB13-111914 were affected. The non-detected results reported for acetone in the affected samples were qualified as estimated, (UJ).

The VOC continuing calibration performed on 11/25/14 @ 08:16 had a %D for dichlorodifluoromethane above the 20% quality control limit. The non-detected result reported for this compound in the affected sample, MW02-03S-NWG-111914, was qualified as estimated, (UJ).

NOTES

Detected results reported for trichlorofluoromethane below the Limit of Quantitation (LOQ) but above the Detection Limit (DL) were qualified as estimated, (J). Non-detected results are reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Initial calibration %RSDs exceeded 20% in the VOC fraction. Continuing calibration %Ds were above 20% in the VOC.

Other Factors Affecting Data Quality: Detected results below the LOQ were estimated.

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements Superfund Guidance/Procedures (April 2013), National Functional Guidelines for Organic Data Validation (January 2008), National Functional Guidelines for Inorganic Data Validation (January 2010), and the Department of Defense (DoD) document entitled, "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013). The text of this report has been formulated to address only those areas affecting data quality.

Tetra Tech, Inc.
Michelle L. Allen
Environmental Chemist

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 01813	NSAMPLE	FD05-111914			MW02-03S-NWG-111914			TB13-111914		
SDG: N2224	LAB_ID	N2224-03A			N2224-02A			N2224-01A		
FRACTION: OV	SAMP_DATE	11/19/2014			11/19/2014			11/19/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF	MW02-03S-NWG-111914								

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U		1	U		1	U	
1,1-DICHLOROETHANE	0.5	U		0.5	U		0.5	U	
1,1-DICHLOROETHENE	0.5	U		0.5	U		0.5	U	
1,2,3-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U		1	U		1	U	
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U	
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U	
1,2-DICHLOROETHANE	0.5	U		0.5	U		0.5	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U	
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U	
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U	
2-BUTANONE	2.5	U		2.5	U		2.5	U	
2-HEXANONE	2.5	U		2.5	U		2.5	U	
4-METHYL-2-PENTANONE	1	U		1	U		1	U	
ACETONE	2.5	UJ	C	2.5	U		2.5	UJ	C
BENZENE	0.5	U		0.5	U		0.5	U	
BROMOCHLOROMETHANE	0.5	U		0.5	U		0.5	U	
BROMODICHLOROMETHANE	0.5	U		0.5	U		0.5	U	
BROMOFORM	1	U		1	U		1	U	
BROMOMETHANE	1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE	0.5	U		0.5	U		0.5	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U	
CHLOROBENZENE	0.5	U		0.5	U		0.5	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U	
CHLOROETHANE	0.5	U		0.5	U		0.5	U	
CHLOROFORM	0.5	U		0.5	U		0.5	U	
CHLOROMETHANE	0.5	U		0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U	
CYCLOHEXANE	1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	1	U		1	U		1	U	

PROJ_NO: 01813	NSAMPLE	FD05-111914			MW02-03S-NWG-111914			TB13-111914		
SDG: N2224	LAB_ID	N2224-03A			N2224-02A			N2224-01A		
FRACTION: OV	SAMP_DATE	11/19/2014			11/19/2014			11/19/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF	MW02-03S-NWG-111914								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ETHYLBENZENE		0.5	U		0.5	U		0.5	U	
ISOPROPYLBENZENE		0.5	U		0.5	U		0.5	U	
METHYL ACETATE		1	U		1	U		1	U	
METHYL CYCLOHEXANE		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE		0.5	U		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE		1	UJ	C	1	UJ	C	1	UJ	C
TOLUENE		0.5	U		0.5	U		0.5	U	
TOTAL XYLENES		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE		0.88	J	P	0.67	J	P	1	U	
VINYL CHLORIDE		0.5	U		0.5	U		0.5	U	

PROJ_NO: 01813	NSAMPLE	FD05-111914			MW02-03S-NWG-111914			TB13-111914		
SDG: N2224	LAB_ID	N2224-03A			N2224-02A			N2224-01A		
FRACTION: PET	SAMP_DATE	11/19/2014			11/19/2014			11/19/2014		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF	MW02-03S-NWG-111914								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		20	U		20	U		20	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD05-111914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2224-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8348.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/19/2014

% Moisture: not dec. Date Analyzed: 11/24/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	0.88	J	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD05-111914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2224-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8348.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/19/2014

% Moisture: not dec. Date Analyzed: 11/24/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW02-03S-NWG-111914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2224-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8368.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/19/2014

% Moisture: not dec. Date Analyzed: 11/25/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	0.67	J	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW02-03S-NWG-111914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2224-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8368.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/19/2014

% Moisture: not dec. Date Analyzed: 11/25/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB13-111914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2224-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8338.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/19/2014

% Moisture: not dec. Date Analyzed: 11/24/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB13-111914

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: N2224-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8338.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/19/2014

% Moisture: not dec. Date Analyzed: 11/24/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	5.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

Client: Tetra Tech, Inc.
Client Sample ID: FD05-111914
Lab ID: N2224-03
Project: CED Area, WE01-Davisville, resample
Collection Date: 11/19/14 0:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	12/02/2014 14:42	80238
Surrogate: Bromofluorobenzene	92.1			87-112	%REC	1	12/02/2014 14:42	80238

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.11.12.1758

Client: Tetra Tech, Inc.
Client Sample ID: MW02-03S-NWG-111914
Lab ID: N2224-02
Project: CED Area, WE01-Davisville, resample
Collection Date: 11/19/14 12:50

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID							GRO_W	
Gasoline Range Organics	ND		100 ^	100	ug/L	1	12/02/2014 14:19	80238
Surrogate: Bromofluorobenzene	95.0			87-112	%REC	1	12/02/2014 14:19	80238

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

m14.11.12.1758

Client: Tetra Tech, Inc.
Client Sample ID: TB13-111914
Lab ID: N2224-01

Project: CED Area, WE01-Davisville, resample
Collection Date: 11/19/14 11:00

Analyses	Result	Qual	LOD	LOQ	Units	DF	Date Analyzed	Batch ID
SW846 8015D GRO -- GASOLINE RANGE ORGANIC (GRO) BY GC-FID						GRO_W		
Gasoline Range Organics	ND		100 ^	100	ug/L	1	12/02/2014 13:57	80238
Surrogate: Bromofluorobenzene	90.0			87-112	%REC	1	12/02/2014 13:57	80238

Qualifiers:
ND - Not Detected at the Limit of Detection
J - Analyte detected below Limit of Quantitation
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
^ Qualified to Limit of Detection (LOD)
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
LOQ - Limit of Quantitation
LOD - Limit of Detection

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: #01813 SDG: N2224

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: VOC, GRO

Missing Information	Date Lab Contacted	Date Received
N/A		

Validator: Michelle Allen Date: 12/15/14

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: _____ SDG: _____

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code). See DV letter

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: M. Allen Date: 12/14/15

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ see DV letter

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock See DV letter

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-A

See DV letter

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: M. Allen

Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ see DV letter

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: M. Allen Date: 12/15/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria. See DV letter

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-D See DV letter

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria. see DV letter

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

See DV letter

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-IV-A See DV letter

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards. See DV letter

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: M. Allen

Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria. See DV letter

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company:_____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

See DV letter

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

See DV letter

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: M. Allen Date: 12/18/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV letter

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: M. Allen

Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

SV-VI-A (Cont'd) see DV letter

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

SV-VI-B

see DV letter

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,3-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA-VI See DV letter

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene-d_2 DCA= 1,2-Dichloroethane-d_4

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA-VI (Cont'd) See DV Letter

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria. see DV letter

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: M. Allen Date: 12/15/14

Case:_____ SDG:_____

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup. See DV letter

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance. See DV letter

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV letter

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check. see DV letter

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level See DV letter

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

*For Pest/PCB only.

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____ See DV letter

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? see DV letter **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-B See DV letter

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: M. Allen Date: 12/15/14

Case:_____ SDG:_____

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____ see DV letter

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: M. Allen Date: 12/15/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

See DV letter

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: M. Allen Date: 12/5/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-XII

See DV letter

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: M. Allen

Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10). See DV letter

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: M. Allen

Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10). see DV letter

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: M. Allen Date: 12/15/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

See DV letter

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: M. Allen

Date: 12/15/14

APPENDIX D

SUPPORT DOCUMENTATION

FORMER NCBC DAVISVILLE
SDG N2224

SAMPLE IDENTIFICATION	MW02-03S-NWG-111914
COMPOUND	TRICHLOROFLUOROMETHANE
COMPOUND AREA	3228
INTERNAL STANDARD AMOUNT (ng)	250
VOLUME WATER PURGED (ml)	5
DILUTION FACTOR	1
INTERNAL STANDARD AREA	436886
AVERAGE RRF	0.553
ml to µl	1000
ng to µg	1000

0.7 µg/L

3228 x 250ng x 1 x 1000ml X 1µg /436886 x 0.553 x 5ml x 1L x 1000ng

Data File: \\Avogadro\Organics\V10.I\141125.B\V8D8368.d
Report Date: 01-Dec-2014 15:01

Spectrum Analytical, Inc. RI Division

Method 8260 Water and Medium Soil

Data file : \\Avogadro\Organics\V10.I\141125.B\V8D8368.d
Lab Smp Id: N2224-02A Client Smp ID: MW02-03S-NWG-111914
Inj Date : 25-NOV-2014 12:24
Operator : alm SRC: LIMS Inst ID: V10.i
Smp Info : 5ML,N2224-02A,,80174
Misc Info :
Comment :
Method : \\Avogadro\Organics\V10.I\141125.B\v108260Gadd-6lvl.m
Meth Date : 01-Dec-2014 15:00 V10.i Quant Type: ISTD
Cal Date : 21-NOV-2014 09:55 Cal File: V8D8296.d
Als bottle: 100
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: OLM_VOA.sub
Target Version: 4.14
Processing Host: TARGET104

Concentration Formula: Amt * DF * Uf * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	7 Trichlorofluoromethane	101	2.448	2.445	(0.468)	3228	0.66756	0.67
$	36 Dibromofluoromethane	113	4.647	4.647	(0.888)	136121	50.5063	50
$	42 1,2-Dichloroethane-d4	102	4.946	4.943	(0.945)	26118	49.7789	50
*	46 Fluorobenzene	96	5.236	5.239	(1.000)	436886	50.0000	
$	58 Toluene-d8	98	6.721	6.718	(0.817)	448739	47.5365	48
*	68 Chlorobenzene-d5	117	8.223	8.226	(1.000)	383396	50.0000	
$	79 Bromofluorobenzene	95	9.528	9.528	(1.159)	190256	46.7456	47
*	92 1,4-Dichlorobenzene-d4	152	10.727	10.724	(1.000)	200103	50.0000	

FORMER NCBC DAVISVILLE
WATER DATA
N2224

FRACTION	CHEMICAL	MW02-03S-NWG-111914	UNITS	FD05-111914	RPD	D
OV	TRICHLOROFLUOROMETHANE	0.67 J	UG/L	0.88 J	27.10	0.21

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

N2224

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 1

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 646 Camp Avenue, N Kingstown, RI 02852, (401) 732-3400

Special Handling:

TAT- Ind icate Date Needed: Stnd *
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Scott Anderson/Lee Ann Sinagoga
c/o Tetra Tech
661 Andersen Dr
Pittsburgh, PA 15220
Telephone #: 412 921 7090
Project Mgr. S Anderson

Invoice To: Refer to P.O.

P.O. No.: _____ RQN: _____

Project No.: 112G01813 WEO1
Site Name: NCBC Davisville, CED Area
Location: N. Kingstown State: RI
Sampler(s): K. Jaikut P. Seward

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11=_____ 12=_____

List preservative code below: 2 2

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

Containers: # of VOA Vials | # of Amber Glass | # of Clear Glass | # of Plastic
Analyses: VOCs | TPH GRO (MTBE-NAPH.)

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: Refer to lab scope of work

N2224 G=Grab C=Composite

Lab Id:	Sample Id:	Date: 2014	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOCs	TPH GRO (MTBE-NAPH.)
01	TB13-111914	11/19	1100	G	QC	4	-	-	-	2	2
02	MW03-035-NWG-111914	11/19	1250	G	GW	12	-	-	-	6	6
03	FD05-111914	11/19	0000	G	GW	4	-	-	-	2	2

Lab QC volume

K Jaikut 11/19/14

* Note - Preliminary results needed for a Dec 9 meeting; replacement sample

Relinquished by:	Received by:	Date:	Time:	Temp°C
Kayleen Jaikut		11/19/14	1427	2.1

☐ EDD Format _____
☐ E-mail to _____

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☑ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

JR

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: KP	Page 01 of 00
Reviewed By: WJL	Log-in Date 11/19/2014
Work Order: N2224	Client Name: Tetra Tech, Inc.
Project Name/Event: CED Area, WE01-Davisville	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker Present / Absent
5. Airbill No. Drop Off N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	2.1 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	11/19/2014
12. Time Received	14:27

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
N2224-01						H	
N2224-02						H	
N2224-03						H	

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil	A= Air
UA = Unpreserved Aqueous	H = HCl
M = MeOH	E = Encore
N = NaHSO4	F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville, resample

Laboratory Workorder / SDG #: N2224

SW846 8260C, VOC by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V10
Instrument Type: GCMS-VOA

Description: HP7890A
Manufacturer: Agilent
Model: 7890A / 5975C
GC Column used: 30 m X 0.25 mm ID [1.40 um thickness] DB-624 capillary column.

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW02-03S-NWG-111914 (N2224-02AMS) and MW02-03S-NWG-111914 (N2224-02AMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

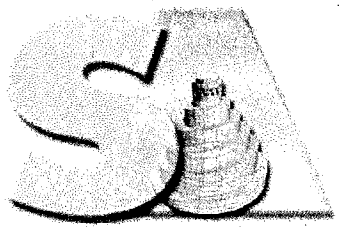
Manual integration was performed on the following:

VSTD05010Q 2-Hexanone due to M6

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____12/8/2014_____



Data Flag/Qualifiers (Page 1 of 2):

U Not Detected. This compound was analyzed-for but not detected. For most analyses the reporting limit (lowest standard concentration) is the value listed. For Department of Defense programs, this is the Limit of Detection (LOD).

J This flag indicates an estimated value due to either
- the compound was detected below the reporting limit, or
- estimated concentration for Tentatively Identified Compound

B This flag indicates the compound was also detected in the associated Method Blank. The B flag has an alternative meaning for Inorganics analyses reported using CLP ILM-type metals forms, indicating a "trace" concentration below the reporting limit and equal to or above the detection limit.

D For Organics analysis, this flag indicates the compound concentration was obtained from a secondary dilution analysis

E This flag indicates the compound concentration exceeded the Calibration Range. The E flag has an alternative meaning for Inorganics analyses reported using CLP metals forms, indicating an estimated concentration due to the presence of interferences, as determined by the serial dilution analysis.

P This flag is used for pesticides/PCB/herbicide compound when there is a greater than 40% difference for detected concentration between the two GC columns used for primary and confirmation analyses. This difference typically indicates interference, causing one value to be unusually high. The **lower** of the two values is generally reported on the Form 1, and both values reported on the Form 10.

A Used to flag semivolatile organic Tentatively Identified Compound library search results for compounds identified as an aldol condensation by-product.

Data Flag/Qualifiers (Page 2 of 2):

N Used to flag results for volatile and semivolatile Organics analysis Tentatively Identified Compounds where an analyte has passed the identification criteria, and is considered to be positively identified. For Inorganics analysis the N flag indicates the matrix spike recovery falls outside of the control limit.

* For Inorganics analysis the * flag indicates Relative Percent Difference for duplicate analyses is outside of the control limit.

L NYSDEC qualifier: Result is biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.

Sample ID Suffixes

DL Diluted analysis. The sample was diluted and reanalyzed. The DL may be followed by a digit if more than one diluted reanalysis is provided. The DL suffix is not attached to an analysis initially performed at dilution, only to reanalyses performed at dilution

RE Reanalysis. Appended to the client sample ID to indicate a reextraction and reanalysis or a reanalysis of the original sample extract.

RA Reanalysis. Appended to the laboratory sample ID indicates a reanalysis of the original sample extract.

RX Reextraction. Appended to the laboratory sample ID indicates a reextraction of the sample.

MS Matrix Spike.

MSD Matrix Spike Duplicate

DUP Duplicate analysis

SD Serial Dilution

PS Post-digestion or Post-distillation spike. For metals or inorganic analyses

Report Date:
08-Dec-14 13:31

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza #7
Pittsburgh, PA 15220

Attn: Amy Thomson

Work Order: N2224
Project : CED Area, WE01-Davisville, resample
Project #:

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
N2224-01	TB13-111914	Aqueous	19-Nov-14 11:00	19-Nov-14 14:27
N2224-02	MW02-03S-NWG-111914	Aqueous	19-Nov-14 12:50	19-Nov-14 14:27
N2224-03	FD05-111914	Aqueous	19-Nov-14 00:00	19-Nov-14 14:27

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

N2224

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: N2224

Client ID: TETRA_NAVY | **Case:** | **HC Due:** 12/08/14 | **Report Level:** LEVEL 4A

Project: CED Area, WE01-Davisville | **SDG:** | **Fax Due:** | **Special Program:** *DoD*

WO Name: CED Area, WE01-Davisville, resample | **Fax Report:** ☐ | **EDD:** ADAPT_TTNUS

Location: WE01_CED_DAVISVILLE, | **PO:** WR--1-CTO WE01, AGMT-110631

Comments: CD and HC to Amy Thomson. Upload EDD and PDF to TT system as well. Recollected sample.

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
N2224-01A	TB13-111914	11/19/2014 11:00	11/19/2014	Aqueous	GRO_W	/					VOA
N2224-01A	TB13-111914	11/19/2014 11:00	11/19/2014	Aqueous	SW8260_W	/ TCL				Y	VOA
N2224-02A	MW02-03S-NWG-111914	11/19/2014 12:50	11/19/2014	Aqueous	GRO_W	/			Y		VOA
N2224-02A	MW02-03S-NWG-111914	11/19/2014 12:50	11/19/2014	Aqueous	SW8260_W	/ TCL			Y	Y	VOA
N2224-03A	FD05-111914	11/19/2014 00:00	11/19/2014	Aqueous	GRO_W	/					VOA
N2224-03A	FD05-111914	11/19/2014 00:00	11/19/2014	Aqueous	SW8260_W	/ TCL				Y	VOA

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

2B - FORM II VOA-2

WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Level: (TRACE or LOW) LOW

	CLIENT SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
01	LCS-80148	101	101	98	98				0
02	MB-80148	101	98	98	96				0
03	TB13-111914	99	106	98	95				0
04	FD05-111914	103	103	97	95				0
05	LCS-80174	102	104	97	97				0
06	MB-80174	100	103	98	92				0
07	MW02-03S-NWG -111914	101	100	95	93				0
08	LCS-80187	101	98	96	97				0
09	MB-80187	101	105	95	94				0
10	MW02-03S-NWG -111914MS	101	113	96	98				0
11	MW02-03S-NWG -111914MSD	103	103	98	98				0

		QC LIMITS
VDMC1	(DBFM) Dibromofluoromethane	(85-115)
VDMC2	(DCE) =1,2-Dichloroethane-d4	(70-120)
VDMC3	(TOL) =Toluene-d8	(85-120)
VDMC4	(BFB) =Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

som14.10.02.1616

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####): VSTD05010S Date Analyzed: 11/24/2014

Lab File ID (Standard): V8D8329.D Time Analyzed: 9:04

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	436585		5.239		385184		8.226		221356		10.728	
	UPPER LIMIT	873170		5.739		770368		8.726		442712		11.228	
	LOWER LIMIT	218293		4.739		192592		7.726		110678		10.228	
	SAMPLE NO.												
01	LCS-80148	440201		5.239		384196		8.223		219318		10.725	
02	MB-80148	435116		5.239		377437		8.227		193591		10.728	
03	TB13-111914	432566		5.239		376815		8.226		202324		10.728	
04	FD05-111914	417511		5.239		367096		8.226		198638		10.728	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####): VSTD05010T Date Analyzed: 11/25/2014

Lab File ID (Standard): V8D8361.D Time Analyzed: 8:16

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	439632		5.239		390773		8.226		223818		10.725	
	UPPER LIMIT	879264		5.739		781546		8.726		447636		11.225	
	LOWER LIMIT	219816		4.739		195387		7.726		111909		10.225	
	SAMPLE NO.												
01	LCS-80174	436634		5.236		389475		8.223		225212		10.725	
02	MB-80174	442365		5.239		378678		8.223		185340		10.728	
03	MW02-03S-NWG -111914	436886		5.236		383396		8.223		200103		10.728	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####): VSTD05010U Date Analyzed: 11/26/2014

Lab File ID (Standard): V8D8393.D Time Analyzed: 9:14

Instrument ID: V10 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	430645		5.239		381699		8.223		222104		10.728	
	UPPER LIMIT	861290		5.739		763398		8.723		444208		11.228	
	LOWER LIMIT	215323		4.739		190850		7.723		111052		10.228	
	SAMPLE NO.												
01	LCS-80187	430566		5.236		384489		8.226		220961		10.728	
02	MB-80187	433057		5.239		391767		8.226		207489		10.728	
03	MW02-03S-NWG-111914MS	430000		5.239		383840		8.226		223542		10.728	
04	MW02-03S-NWG-111914MSD	437338		5.239		387498		8.226		221061		10.728	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

CLIENT SAMPLE NO.
BFB10Q

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab File ID: V8D8293.D BFB Injection Date: 11/21/2014

Instrument ID: V10 BFB Injection Time: 8:22

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	31.2
75	30.0 - 80.0% of mass 95	54.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 -120% of mass 95	89.2
175	5.0 - 9.0% of mass 174	6.7 (7.5)1
176	95.0 - 101% of mass 174	86.2 (96.6)1
177	5.0 - 9.0% of mass 176	5.7 (6.7)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010Q	VSTD05010Q	V8D8294.D	11/21/2014	8:53
02	VSTD02010Q	VSTD02010Q	V8D8295.D	11/21/2014	9:24
03	VSTD00510Q	VSTD00510Q	V8D8296.D	11/21/2014	9:55
04	VSTD00110Q	VSTD00110Q	V8D8298.D	11/21/2014	10:57
05	VSTD20010Q	VSTD20010Q	V8D8299.D	11/21/2014	11:28
06	VSTD10010Q	VSTD10010Q	V8D8300.D	11/21/2014	11:59
07	VICV05010Q	VICV05010Q	V8D8301.D	11/21/2014	12:38

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2224 SAS No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date(s): 11/21/2014 11/21/2014

Heated Purge: (Y/N) N Calibration Times: 8:53 11:59

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D8296.D RRF020 = V8D8295.D RRF050 = V8D8294.D RRF100 = V8D8300.D RRF200 = V8D8299.D

RRF001 = V8D8298.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
Dichlorodifluoromethane	0.305	0.369	0.330	0.320	0.336	0.330					0.332	6.4
Chloromethane	0.504	0.595	0.513	0.530	0.527	0.657					0.554	10.8
Vinyl chloride	0.342	0.421	0.375	0.382	0.389	0.356					0.377	7.3
Bromomethane	0.112	0.112	0.081	0.151	0.134	0.183					0.129	27.5
Chloroethane	0.228	0.248	0.216	0.209	0.210	0.259					0.228	9.2
Trichlorofluoromethane	0.500	0.601	0.534	0.526	0.545	0.615					0.553	8.1
1,1-Dichloroethene	0.277	0.312	0.276	0.275	0.281	0.339					0.293	9.1
Acetone	0.046	0.044	0.041	0.037	0.039						0.041	8.6
Carbon disulfide	0.918	1.030	0.898	0.906	0.927	1.163					0.974	10.7
Methylene chloride	0.286	0.337	0.289	0.288	0.291	0.371					0.310	11.4
trans-1,2-Dichloroethene	0.303	0.340	0.294	0.297	0.302	0.443					0.330	17.5
Methyl tert-butyl ether	1.009	1.195	1.034	1.028	1.041	1.159					1.078	7.3
1,1-Dichloroethane	0.655	0.774	0.686	0.674	0.692	0.773					0.709	7.3
2-Butanone	0.025	0.035	0.034	0.035	0.035						0.033	14.0
cis-1,2-Dichloroethene	0.345	0.380	0.331	0.326	0.330	0.413					0.354	9.9
Bromochloromethane	0.165	0.200	0.177	0.166	0.159	0.189					0.176	9.0
Chloroform	0.608	0.709	0.626	0.617	0.632	0.685					0.646	6.4
1,1,1-Trichloroethane	0.595	0.688	0.613	0.602	0.617	0.681					0.633	6.5
Carbon tetrachloride	0.510	0.620	0.555	0.550	0.560	0.558					0.559	6.3
1,2-Dichloroethane	0.589	0.730	0.641	0.626	0.645	0.623					0.642	7.4
Benzene	1.124	1.291	1.125	1.115	1.133	1.180					1.161	5.8
Trichloroethene	0.362	0.391	0.345	0.344	0.352	0.424					0.370	8.6
1,2-Dichloropropane	0.342	0.402	0.356	0.355	0.361	0.390					0.368	6.3
Bromodichloromethane	0.454	0.562	0.502	0.492	0.507	0.503					0.503	6.9
cis-1,3-Dichloropropene	0.476	0.588	0.527	0.518	0.537	0.504					0.525	7.1
4-Methyl-2-pentanone	0.472	0.570	0.497	0.499	0.493						0.506	7.4
Toluene	1.179	1.386	1.236	1.237	1.269	1.492					1.300	9.0

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2224 SAS No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date(s): 11/21/2014 11/21/2014

Heated Purge: (Y/N) N Calibration Times: 8:53 11:59

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D8296.D RRF020 = V8D8295.D RRF050 = V8D8294.D RRF100 = V8D8300.D RRF200 = V8D8299.D

RRF001 = V8D8298.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
trans-1,3-Dichloropropene	0.466	0.569	0.514	0.510	0.533	0.458					0.508	8.2
1,1,2-Trichloroethane	0.269	0.309	0.278	0.277	0.279	0.306					0.286	5.9
Tetrachloroethene	0.442	0.407	0.348	0.339	0.342	0.712					0.432	33.3
2-Hexanone	0.378	0.494	0.388	0.380	0.385						0.405	12.3
Dibromochloromethane	0.404	0.511	0.454	0.462	0.473	0.435					0.457	7.9
1,2-Dibromoethane	0.332	0.418	0.370	0.363	0.364	0.326					0.362	9.1
Chlorobenzene	0.922	1.104	0.966	0.959	0.976	1.030					0.993	6.5
Ethylbenzene	0.479	0.576	0.511	0.506	0.516	0.529					0.519	6.2
Xylene (Total)	0.590	0.718	0.626	0.626	0.633	0.645					0.640	6.7
Styrene	0.875	1.151	1.026	1.030	1.055	0.927					1.011	9.7
Bromoform	0.252	0.333	0.295	0.298	0.307	0.244					0.288	11.8
Isopropylbenzene	1.540	1.839	1.600	1.588	1.627	1.650					1.641	6.3
1,1,2,2-Tetrachloroethane	0.721	0.909	0.726	0.725	0.702	0.818					0.767	10.5
1,3-Dichlorobenzene	1.304	1.630	1.363	1.358	1.363	1.533					1.425	8.9
1,4-Dichlorobenzene	1.441	1.697	1.428	1.418	1.394	1.710					1.515	9.7
1,2-Dichlorobenzene	1.321	1.588	1.335	1.328	1.313	1.427					1.385	7.8
1,2-Dibromo-3-chloropropane	0.141	0.181	0.156	0.160	0.151	0.150					0.156	8.5
1,2,4-Trichlorobenzene	0.795	1.014	0.844	0.870	0.865	0.770					0.860	9.9
1,2,3-Trichlorobenzene	0.779	0.950	0.779	0.800	0.783	0.807					0.816	8.1
1,1,2-Trichloro-1,2,2-trifluoroe	0.326	0.388	0.345	0.340	0.352	0.360					0.352	6.0
Cyclohexane	0.711	0.823	0.721	0.721	0.739	0.804					0.753	6.3
Methyl acetate	0.419	0.514	0.436	0.442	0.438	0.526					0.463	9.8
Methylcyclohexane	0.454	0.553	0.480	0.484	0.493	0.525					0.498	7.1

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

6C - FORM VI VOA-3

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract:

Lab Code: MITKEM Case No.: N2224 SAS No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date(s): 11/21/2014 11/21/2014

Heated Purge: (Y/N) N Calibration Times: 8:53 11:59

Purge Volume: 5 (mL)

GC Column: DB-624 ID: 0.25 (mm) Length: 30 (mm)

LAB FILE ID: RRF005 = V8D8296.D RRF020 = V8D8295.D RRF050 = V8D8294.D RRF100 = V8D8300.D RRF200 = V8D8299.D
RRF001 = V8D8298.D

COMPOUND	RRF005	RRF020	RRF050	RRF100	RRF200	RRF001					RRF	% RSD
Dibromofluoromethane	0.308	0.312	0.311	0.304	0.307						0.308	1.0
1,2-Dichloroethane-d4	0.062	0.060	0.059	0.059	0.060						0.060	2.5
Toluene-d8	1.233	1.242	1.231	1.216	1.234						1.231	0.8
Bromofluorobenzene	0.528	0.530	0.533	0.530	0.533						0.531	0.4

Report 1,4-Dioxane-d8 for Low-Medium VOA analysis only

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/21/2014 Time: 12:38

Lab File ID: V8D8301.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VICV05010Q Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.332	0.327	0.100	-1.5	20.0
Chloromethane	0.554	0.573	0.100	3.3	20.0
Vinyl chloride	0.377	0.394	0.100	4.5	20.0
Bromomethane	0.129	0.165	0.100	28.0	20.0
Chloroethane	0.228	0.213	0.100	-6.6	20.0
Trichlorofluoromethane	0.553	0.545	0.100	-1.5	20.0
1,1-Dichloroethene	0.293	0.292	0.100	-0.6	20.0
Acetone	0.041	0.042	0.100	2.6	20.0
Carbon disulfide	0.974	0.972	0.100	-0.2	20.0
Methylene chloride	0.310	0.303	0.100	-2.2	20.0
trans-1,2-Dichloroethene	0.330	0.308	0.100	-6.6	20.0
Methyl tert-butyl ether	1.078	1.015	0.100	-5.8	20.0
1,1-Dichloroethane	0.709	0.685	0.200	-3.4	20.0
2-Butanone	0.033	0.032	0.100	-1.7	20.0
cis-1,2-Dichloroethene	0.354	0.336	0.100	-5.1	20.0
Bromochloromethane	0.176	0.182	0.100	3.4	20.0
Chloroform	0.646	0.625	0.200	-3.2	20.0
1,1,1-Trichloroethane	0.633	0.615	0.100	-2.8	20.0
Carbon tetrachloride	0.559	0.553	0.100	-1.0	20.0
1,2-Dichloroethane	0.642	0.628	0.100	-2.3	20.0
Benzene	1.161	1.142	0.500	-1.6	20.0
Trichloroethene	0.370	0.358	0.200	-3.1	20.0
1,2-Dichloropropane	0.368	0.359	0.100	-2.4	20.0
Bromodichloromethane	0.503	0.501	0.200	-0.5	20.0
cis-1,3-Dichloropropene	0.525	0.529	0.200	0.7	20.0
4-Methyl-2-pentanone	0.506	0.464	0.100	-8.3	20.0
Toluene	1.300	1.268	0.400	-2.5	20.0
trans-1,3-Dichloropropene	0.508	0.516	0.100	1.5	20.0
1,1,2-Trichloroethane	0.286	0.278	0.100	-2.8	20.0
Tetrachloroethene	0.432	0.359	0.200	-16.7	20.0
2-Hexanone	0.405	0.402	0.100	-0.7	20.0
Dibromochloromethane	0.457	0.455	0.100	-0.4	20.0
1,2-Dibromoethane	0.362	0.366	0.100	1.1	20.0
Chlorobenzene	0.993	1.006	0.500	1.3	20.0
Ethylbenzene	0.519	0.528	0.100	1.7	20.0
Xylene (Total)	0.640	0.652	0.100	1.9	20.0
Styrene	1.011	1.072	0.300	6.0	20.0
Bromoform	0.288	0.287	0.100	-0.5	20.0
Isopropylbenzene	1.641	1.681	0.100	2.5	20.0
1,1,2,2-Tetrachloroethane	0.767	0.742	0.300	-3.3	20.0

no samples

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/21/2014 Time: 12:38

Lab File ID: V8D8301.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VICV05010Q Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.425	1.438	0.600	0.9	20.0
1,4-Dichlorobenzene	1.515	1.508	0.500	-0.4	20.0
1,2-Dichlorobenzene	1.385	1.393	0.400	0.6	20.0
1,2-Dibromo-3-chloropropane	0.156	0.144	0.050	-7.7	20.0
1,2,4-Trichlorobenzene	0.860	0.924	0.200	7.4	20.0
1,2,3-Trichlorobenzene	0.816	0.840	0.100	2.9	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.352	0.362	0.100	2.9	20.0
Cyclohexane	0.753	0.756	0.100	0.4	20.0
Methyl acetate	0.463	0.417	0.100	-9.9	20.0
Methylcyclohexane	0.498	0.522	0.100	4.7	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/21/2014 Time: 12:38

Lab File ID: V8D8301.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VICV05010Q Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.308	0.304	0.100	-1.5	20.0
1,2-Dichloroethane-d4	0.060	0.059	0.100	-1.6	20.0
Toluene-d8	1.231	1.229	0.100	-0.2	20.0
Bromofluorobenzene	0.531	0.520	0.100	-2.0	20.0

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

CLIENT SAMPLE NO.
BFB10S

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab File ID: V8D8328.D BFB Injection Date: 11/24/2014

Instrument ID: V10 BFB Injection Time: 8:44

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.7
75	30.0 - 80.0% of mass 95	51.6
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 -120% of mass 95	91.0
175	5.0 - 9.0% of mass 174	7.0 (7.7)1
176	95.0 - 101% of mass 174	89.7 (98.6)1
177	5.0 - 9.0% of mass 176	5.9 (6.5)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010S	VSTD05010S	V8D8329.D	11/24/2014	9:04
02	LCS-80148	LCS-80148	V8D8330.D	11/24/2014	9:54
03	MB-80148	MB-80148	V8D8333.D	11/24/2014	11:59
04	TB13-111914	N2224-01A	V8D8338.D	11/24/2014	15:12
05	FD05-111914	N2224-03A	V8D8348.D	11/24/2014	20:24

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/24/2014 Time: 9:04

Lab File ID: V8D8329.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010S Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.332	0.315	0.100	-5.1	20.0
Chloromethane	0.554	0.551	0.100	-0.7	20.0
Vinyl chloride	0.377	0.401	0.100	6.2	20.0
Bromomethane	0.129	0.143	0.100	11.5	20.0
Chloroethane	0.228	0.223	0.100	-2.4	20.0
Trichlorofluoromethane	0.553	0.571	0.100	3.3	20.0
1,1-Dichloroethene	0.293	0.306	0.100	4.2	20.0
Acetone	0.041	0.053	0.100	28.7	20.0
Carbon disulfide	0.974	1.049	0.100	7.7	20.0
Methylene chloride	0.310	0.322	0.100	3.8	20.0
trans-1,2-Dichloroethene	0.330	0.335	0.100	1.7	20.0
Methyl tert-butyl ether	1.078	1.088	0.100	0.9	20.0
1,1-Dichloroethane	0.709	0.736	0.200	3.7	20.0
2-Butanone	0.033	0.038	0.100	17.5	20.0
cis-1,2-Dichloroethene	0.354	0.358	0.100	1.0	20.0
Bromochloromethane	0.176	0.196	0.100	11.4	20.0
Chloroform	0.646	0.673	0.200	4.1	20.0
1,1,1-Trichloroethane	0.633	0.656	0.100	3.7	20.0
Carbon tetrachloride	0.559	0.600	0.100	7.3	20.0
1,2-Dichloroethane	0.642	0.665	0.100	3.5	20.0
Benzene	1.161	1.237	0.500	6.5	20.0
Trichloroethene	0.370	0.390	0.200	5.6	20.0
1,2-Dichloropropane	0.368	0.388	0.100	5.6	20.0
Bromodichloromethane	0.503	0.533	0.200	5.9	20.0
cis-1,3-Dichloropropene	0.525	0.555	0.200	5.7	20.0
4-Methyl-2-pentanone	0.506	0.503	0.100	-0.5	20.0
Toluene	1.300	1.346	0.400	3.6	20.0
trans-1,3-Dichloropropene	0.508	0.532	0.100	4.7	20.0
1,1,2-Trichloroethane	0.286	0.299	0.100	4.5	20.0
Tetrachloroethene	0.432	0.387	0.200	-10.4	20.0
2-Hexanone	0.405	0.419	0.100	3.5	20.0
Dibromochloromethane	0.457	0.482	0.100	5.6	20.0
1,2-Dibromoethane	0.362	0.374	0.100	3.3	20.0
Chlorobenzene	0.993	1.054	0.500	6.2	20.0
Ethylbenzene	0.519	0.567	0.100	9.2	20.0
Xylene (Total)	0.640	0.688	0.100	7.6	20.0
Styrene	1.011	1.111	0.300	9.9	20.0
Bromoform	0.288	0.311	0.100	7.9	20.0
Isopropylbenzene	1.641	1.755	0.100	7.0	20.0
1,1,2,2-Tetrachloroethane	0.767	0.789	0.300	2.9	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/24/2014 Time: 9:04

Lab File ID: V8D8329.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010S Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.425	1.511	0.600	6.0	20.0
1,4-Dichlorobenzene	1.515	1.598	0.500	5.5	20.0
1,2-Dichlorobenzene	1.385	1.480	0.400	6.8	20.0
1,2-Dibromo-3-chloropropane	0.156	0.159	0.050	1.4	20.0
1,2,4-Trichlorobenzene	0.860	0.998	0.200	16.1	20.0
1,2,3-Trichlorobenzene	0.816	0.906	0.100	11.0	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.352	0.393	0.100	11.6	20.0
Cyclohexane	0.753	0.816	0.100	8.3	20.0
Methyl acetate	0.463	0.457	0.100	-1.2	20.0
Methylcyclohexane	0.498	0.579	0.100	16.2	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/24/2014 Time: 9:04

Lab File ID: V8D8329.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010S Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.308	0.313	0.100	1.4	20.0
1,2-Dichloroethane-d4	0.060	0.061	0.100	1.8	20.0
Toluene-d8	1.231	1.194	0.100	-3.0	20.0
Bromofluorobenzene	0.531	0.520	0.100	-2.1	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MB-80148

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab File ID: V8D8333.D Lab Sample ID: MB-80148

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/24/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 11:59

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-80148	LCS-80148	V8D8330.D	9:54
02	TB13-111914	N2224-01A	V8D8338.D	15:12
03	FD05-111914	N2224-03A	V8D8348.D	20:24

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-80148

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-80148

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8333.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/24/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-80148

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-80148

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8333.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/24/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

CLIENT SAMPLE NO.
LCS-80148

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab Sample ID: LCS-80148 LCS Lot No.:

Date Extracted: 11/24/2014 Date Analyzed (1): 11/24/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	33.5423	67		30 - 155
Chloromethane	50.0000	0.0000	41.9989	84		40 - 125
Vinyl chloride	50.0000	0.0000	44.5412	89		50 - 145
Bromomethane	50.0000	0.0000	49.3581	99		30 - 145
Chloroethane	50.0000	0.0000	42.7943	86		60 - 135
Trichlorofluoromethane	50.0000	0.0000	45.8755	92		60 - 145
1,1-Dichloroethene	50.0000	0.0000	47.1728	94		70 - 130
Acetone	50.0000	0.0000	57.3760	115		40 - 140
Carbon disulfide	50.0000	0.0000	47.7180	95		35 - 160
Methylene chloride	50.0000	0.0000	48.0099	96		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	49.0492	98		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	47.0238	94		65 - 125
1,1-Dichloroethane	50.0000	0.0000	47.5068	95		70 - 135
2-Butanone	50.0000	0.0000	55.2298	110		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	46.7142	93		70 - 125
Bromochloromethane	50.0000	0.0000	51.0157	102		65 - 130
Chloroform	50.0000	0.0000	48.0472	96		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	47.1367	94		65 - 130
Carbon tetrachloride	50.0000	0.0000	49.0271	98		65 - 140
1,2-Dichloroethane	50.0000	0.0000	47.9933	96		70 - 130
Benzene	50.0000	0.0000	48.9419	98		80 - 120
Trichloroethene	50.0000	0.0000	48.6102	97		70 - 125
1,2-Dichloropropane	50.0000	0.0000	49.8499	100		75 - 125
Bromodichloromethane	50.0000	0.0000	48.1616	96		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	49.3097	99		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	50.2220	100		60 - 135
Toluene	50.0000	0.0000	48.3068	97		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	49.9960	100		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	49.8483	100		75 - 125
Tetrachloroethene	50.0000	0.0000	51.2955	103		45 - 150
2-Hexanone	50.0000	0.0000	50.2924	101		55 - 130
Dibromochloromethane	50.0000	0.0000	49.9218	100		60 - 135
1,2-Dibromoethane	50.0000	0.0000	49.9673	100		80 - 120
Chlorobenzene	50.0000	0.0000	49.9298	100		80 - 120
Ethylbenzene	50.0000	0.0000	50.9094	102		75 - 125
Xylene (Total)	150.0000	0.0000	150.6184	100		81 - 121
Styrene	50.0000	0.0000	50.7043	101		65 - 135
Bromoform	50.0000	0.0000	50.6198	101		70 - 130
Isopropylbenzene	50.0000	0.0000	50.5133	101		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	48.7757	98		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	51.1793	102		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	49.8496	100		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	50.6075	101		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	49.6431	99		50 - 130

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

CLIENT SAMPLE NO.
LCS-80148

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab Sample ID: LCS-80148 LCS Lot No.:

Date Extracted: 11/24/2014 Date Analyzed (1): 11/24/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	54.9148	110		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	54.6606	109		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	50.2965	101		70 - 130
Cyclohexane	50.0000	0.0000	49.7466	99		70 - 130
Methyl acetate	50.0000	0.0000	48.2294	96		70 - 130
Methylcyclohexane	50.0000	0.0000	53.0690	106		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

CLIENT SAMPLE NO.
BFB10T

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab File ID: V8D8360.D BFB Injection Date: 11/25/2014

Instrument ID: V10 BFB Injection Time: 7:56

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	30.4
75	30.0 - 80.0% of mass 95	53.5
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 -120% of mass 95	90.2
175	5.0 - 9.0% of mass 174	7.0 (7.7)1
176	95.0 - 101% of mass 174	88.8 (98.5)1
177	5.0 - 9.0% of mass 176	5.7 (6.5)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010T	VSTD05010T	V8D8361.D	11/25/2014	8:16
02	LCS-80174	LCS-80174	V8D8362.D	11/25/2014	9:07
03	MB-80174	MB-80174	V8D8366.D	11/25/2014	11:22
04	MW02-03S-NWG-111914	N2224-02A	V8D8368.D	11/25/2014	12:24

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/25/2014 Time: 8:16

Lab File ID: V8D8361.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010T Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.332	0.211	0.100	-36.4	20.0
Chloromethane	0.554	0.451	0.100	-18.7	20.0
Vinyl chloride	0.377	0.334	0.100	-11.5	20.0
Bromomethane	0.129	0.114	0.100	-11.1	20.0
Chloroethane	0.228	0.201	0.100	-12.1	20.0
Trichlorofluoromethane	0.553	0.514	0.100	-7.1	20.0
1,1-Dichloroethene	0.293	0.289	0.100	-1.6	20.0
Acetone	0.041	0.039	0.100	-6.9	20.0
Carbon disulfide	0.974	0.951	0.100	-2.4	20.0
Methylene chloride	0.310	0.305	0.100	-1.8	20.0
trans-1,2-Dichloroethene	0.330	0.318	0.100	-3.7	20.0
Methyl tert-butyl ether	1.078	1.024	0.100	-5.0	20.0
1,1-Dichloroethane	0.709	0.691	0.200	-2.5	20.0
2-Butanone	0.033	0.036	0.100	10.9	20.0
cis-1,2-Dichloroethene	0.354	0.344	0.100	-2.9	20.0
Bromochloromethane	0.176	0.187	0.100	6.2	20.0
Chloroform	0.646	0.644	0.200	-0.3	20.0
1,1,1-Trichloroethane	0.633	0.616	0.100	-2.7	20.0
Carbon tetrachloride	0.559	0.550	0.100	-1.6	20.0
1,2-Dichloroethane	0.642	0.644	0.100	0.2	20.0
Benzene	1.161	1.176	0.500	1.3	20.0
Trichloroethene	0.370	0.372	0.200	0.6	20.0
1,2-Dichloropropane	0.368	0.375	0.100	1.9	20.0
Bromodichloromethane	0.503	0.508	0.200	0.9	20.0
cis-1,3-Dichloropropene	0.525	0.534	0.200	1.7	20.0
4-Methyl-2-pentanone	0.506	0.496	0.100	-2.0	20.0
Toluene	1.300	1.308	0.400	0.6	20.0
trans-1,3-Dichloropropene	0.508	0.517	0.100	1.8	20.0
1,1,2-Trichloroethane	0.286	0.290	0.100	1.3	20.0
Tetrachloroethene	0.432	0.356	0.200	-17.5	20.0
2-Hexanone	0.405	0.386	0.100	-4.7	20.0
Dibromochloromethane	0.457	0.457	0.100	0.1	20.0
1,2-Dibromoethane	0.362	0.373	0.100	3.0	20.0
Chlorobenzene	0.993	1.009	0.500	1.6	20.0
Ethylbenzene	0.519	0.538	0.100	3.6	20.0
Xylene (Total)	0.640	0.653	0.100	2.1	20.0
Styrene	1.011	1.047	0.300	3.6	20.0
Bromoform	0.288	0.287	0.100	-0.3	20.0
Isopropylbenzene	1.641	1.673	0.100	2.0	20.0
1,1,2,2-Tetrachloroethane	0.767	0.748	0.300	-2.4	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/25/2014 Time: 8:16

Lab File ID: V8D8361.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010T Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.425	1.462	0.600	2.6	20.0
1,4-Dichlorobenzene	1.515	1.523	0.500	0.6	20.0
1,2-Dichlorobenzene	1.385	1.417	0.400	2.3	20.0
1,2-Dibromo-3-chloropropane	0.156	0.146	0.050	-6.4	20.0
1,2,4-Trichlorobenzene	0.860	0.956	0.200	11.2	20.0
1,2,3-Trichlorobenzene	0.816	0.879	0.100	7.7	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.352	0.363	0.100	3.1	20.0
Cyclohexane	0.753	0.749	0.100	-0.6	20.0
Methyl acetate	0.463	0.437	0.100	-5.5	20.0
Methylcyclohexane	0.498	0.537	0.100	7.8	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/25/2014 Time: 8:16

Lab File ID: V8D8361.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010T Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.308	0.313	0.100	1.6	20.0
1,2-Dichloroethane-d4	0.060	0.061	0.100	1.9	20.0
Toluene-d8	1.231	1.181	0.100	-4.1	20.0
Bromofluorobenzene	0.531	0.518	0.100	-2.4	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-80174

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab File ID: V8D8366.D Lab Sample ID: MB-80174

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/25/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 11:22

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-80174	LCS-80174	V8D8362.D	9:07
02	MW02-03S-NWG-111914	N2224-02A	V8D8368.D	12:24

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-80174

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-80174

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8366.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/25/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-80174

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-80174

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8366.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/25/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	5.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

CLIENT SAMPLE NO.
LCS-80174

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab Sample ID: LCS-80174 LCS Lot No.:

Date Extracted: 11/25/2014 Date Analyzed (1): 11/25/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	32.4646	65		30 - 155
Chloromethane	50.0000	0.0000	41.3787	83		40 - 125
Vinyl chloride	50.0000	0.0000	48.0120	96		50 - 145
Bromomethane	50.0000	0.0000	52.7305	105		30 - 145
Chloroethane	50.0000	0.0000	46.5401	93		60 - 135
Trichlorofluoromethane	50.0000	0.0000	50.2385	100		60 - 145
1,1-Dichloroethene	50.0000	0.0000	52.1515	104		70 - 130
Acetone	50.0000	0.0000	49.3420	99		40 - 140
Carbon disulfide	50.0000	0.0000	51.8589	104		35 - 160
Methylene chloride	50.0000	0.0000	51.7724	104		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	50.6121	101		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	50.6222	101		65 - 125
1,1-Dichloroethane	50.0000	0.0000	52.4082	105		70 - 135
2-Butanone	50.0000	0.0000	55.2755	111		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	51.7321	103		70 - 125
Bromochloromethane	50.0000	0.0000	56.0341	112		65 - 130
Chloroform	50.0000	0.0000	53.3751	107		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	52.3924	105		65 - 130
Carbon tetrachloride	50.0000	0.0000	53.1380	106		65 - 140
1,2-Dichloroethane	50.0000	0.0000	52.9461	106		70 - 130
Benzene	50.0000	0.0000	54.3429	109		80 - 120
Trichloroethene	50.0000	0.0000	52.8704	106		70 - 125
1,2-Dichloropropane	50.0000	0.0000	54.0945	108		75 - 125
Bromodichloromethane	50.0000	0.0000	53.7422	107		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	53.9398	108		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	50.6271	101		60 - 135
Toluene	50.0000	0.0000	54.3765	109		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	53.7729	108		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	54.8139	110		75 - 125
Tetrachloroethene	50.0000	0.0000	44.4191	89		45 - 150
2-Hexanone	50.0000	0.0000	49.1170	98		55 - 130
Dibromochloromethane	50.0000	0.0000	52.6846	105		60 - 135
1,2-Dibromoethane	50.0000	0.0000	54.1954	108		80 - 120
Chlorobenzene	50.0000	0.0000	54.2084	108		80 - 120
Ethylbenzene	50.0000	0.0000	54.5999	109		75 - 125
Xylene (Total)	150.0000	0.0000	164.9941	110		81 - 121
Styrene	50.0000	0.0000	55.0047	110		65 - 135
Bromoform	50.0000	0.0000	52.5772	105		70 - 130
Isopropylbenzene	50.0000	0.0000	54.8647	110		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	50.8820	102		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	55.0172	110		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	53.7566	108		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	55.0502	110		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	49.7564	100		50 - 130

3 - FORM III

WATER LABORATORY CONTROL SAMPLE RECOVERY

CLIENT SAMPLE NO.

LCS-80174

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab Sample ID: LCS-80174 LCS Lot No.:

Date Extracted: 11/25/2014 Date Analyzed (1): 11/25/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	59.2244	118		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	57.1788	114		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	55.7657	112		70 - 130
Cyclohexane	50.0000	0.0000	54.2217	108		70 - 130
Methyl acetate	50.0000	0.0000	49.1293	98		70 - 130
Methylcyclohexane	50.0000	0.0000	58.5580	117		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

5A - FORM V VOA
VOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

CLIENT SAMPLE NO.
BFB10U

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab File ID: V8D8392.D BFB Injection Date: 11/26/2014

Instrument ID: V10 BFB Injection Time: 8:33

GC Column: DB-624 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	29.0
75	30.0 - 80.0% of mass 95	51.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	50.0 -120% of mass 95	93.8
175	5.0 - 9.0% of mass 174	6.9 (7.3)1
176	95.0 - 101% of mass 174	93.8 (100.1)1
177	5.0 - 9.0% of mass 176	6.0 (6.4)2

1 - Value is % mass 174 2 - Value is % mass 176

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD05010U	VSTD05010U	V8D8393.D	11/26/2014	9:14
02	LCS-80187	LCS-80187	V8D8394.D	11/26/2014	9:57
03	MB-80187	MB-80187	V8D8398.D	11/26/2014	12:01
04	MW02-03S-NWG-111914MS	N2224-02AMS	V8D8408.D	11/26/2014	17:13
05	MW02-03S-NWG-111914MSD	N2224-02AMSD	V8D8409.D	11/26/2014	17:45

no samples

7A - FORM VII VOA-1

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/26/2014 Time: 9:14

Lab File ID: V8D8393.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010U Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.332	0.438	0.100	32.3	20.0
Chloromethane	0.554	0.629	0.100	13.5	20.0
Vinyl chloride	0.377	0.451	0.100	19.5	20.0
Bromomethane	0.129	0.164	0.100	27.5	20.0
Chloroethane	0.228	0.242	0.100	6.1	20.0
Trichlorofluoromethane	0.553	0.607	0.100	9.6	20.0
1,1-Dichloroethene	0.293	0.320	0.100	9.1	20.0
Acetone	0.041	0.055	0.100	32.2	20.0
Carbon disulfide	0.974	1.049	0.100	7.7	20.0
Methylene chloride	0.310	0.329	0.100	6.1	20.0
trans-1,2-Dichloroethene	0.330	0.340	0.100	3.1	20.0
Methyl tert-butyl ether	1.078	1.036	0.100	-3.9	20.0
1,1-Dichloroethane	0.709	0.748	0.200	5.5	20.0
2-Butanone	0.033	0.037	0.100	12.5	20.0
cis-1,2-Dichloroethene	0.354	0.372	0.100	5.0	20.0
Bromochloromethane	0.176	0.202	0.100	14.7	20.0
Chloroform	0.646	0.685	0.200	6.0	20.0
1,1,1-Trichloroethane	0.633	0.652	0.100	3.0	20.0
Carbon tetrachloride	0.559	0.582	0.100	4.2	20.0
1,2-Dichloroethane	0.642	0.659	0.100	2.6	20.0
Benzene	1.161	1.249	0.500	7.6	20.0
Trichloroethene	0.370	0.395	0.200	6.9	20.0
1,2-Dichloropropane	0.368	0.393	0.100	6.9	20.0
Bromodichloromethane	0.503	0.525	0.200	4.3	20.0
cis-1,3-Dichloropropene	0.525	0.558	0.200	6.4	20.0
4-Methyl-2-pentanone	0.506	0.465	0.100	-8.1	20.0
Toluene	1.300	1.388	0.400	6.8	20.0
trans-1,3-Dichloropropene	0.508	0.543	0.100	6.9	20.0
1,1,2-Trichloroethane	0.286	0.302	0.100	5.7	20.0
Tetrachloroethene	0.432	0.386	0.200	-10.7	20.0
2-Hexanone	0.405	0.382	0.100	-5.5	20.0
Dibromochloromethane	0.457	0.469	0.100	2.7	20.0
1,2-Dibromoethane	0.362	0.384	0.100	6.0	20.0
Chlorobenzene	0.993	1.079	0.500	8.7	20.0
Ethylbenzene	0.519	0.557	0.100	7.3	20.0
Xylene (Total)	0.640	0.692	0.100	8.2	20.0
Styrene	1.011	1.116	0.300	10.4	20.0
Bromoform	0.288	0.289	0.100	0.4	20.0
Isopropylbenzene	1.641	1.730	0.100	5.5	20.0
1,1,2,2-Tetrachloroethane	0.767	0.764	0.300	-0.4	20.0

7B - FORM VII VOA-2

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/26/2014 Time: 9:14

Lab File ID: V8D8393.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010U Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX %D
1,3-Dichlorobenzene	1.425	1.519	0.600	6.6	20.0
1,4-Dichlorobenzene	1.515	1.577	0.500	4.1	20.0
1,2-Dichlorobenzene	1.385	1.476	0.400	6.5	20.0
1,2-Dibromo-3-chloropropane	0.156	0.144	0.050	-7.7	20.0
1,2,4-Trichlorobenzene	0.860	0.975	0.200	13.4	20.0
1,2,3-Trichlorobenzene	0.816	0.899	0.100	10.2	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.352	0.388	0.100	10.3	20.0
Cyclohexane	0.753	0.789	0.100	4.7	20.0
Methyl acetate	0.463	0.441	0.100	-4.7	20.0
Methylcyclohexane	0.498	0.539	0.100	8.2	20.0

7C - FORM VII VOA-3

VOLATILE CONTINUING CALIBRATION DATA

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Instrument ID: V10 Calibration Date: 11/26/2014 Time: 9:14

Lab File ID: V8D8393.D Init. Calib. Date(s): 11/21/2014 11/21/2014

EPA Sample No.(VSTD#####) VSTD05010U Init. Calib. Time(s): 8:53 11:59

Heated Purge: (Y/N) N GC Column: DB-624 ID: 0.25 (mm) Length: 30 (m)

Purge Volume: 5.0 (mL)

COMPOUND	$\overline{RRF}$	RRF050	MIN RRF	%D	MAX %D
Dibromofluoromethane	0.308	0.314	0.100	1.7	20.0
1,2-Dichloroethane-d4	0.060	0.060	0.100	-0.6	20.0
Toluene-d8	1.231	1.187	0.100	-3.5	20.0
Bromofluorobenzene	0.531	0.513	0.100	-3.3	20.0

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MB-80187

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab File ID: V8D8398.D Lab Sample ID: MB-80187

Instrument ID: V10

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/26/2014

Level: (TRACE or LOW/MED) LOW Time Analyzed: 12:01

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-80187	LCS-80187	V8D8394.D	9:57
02	MW02-03S-NWG-111914MS	N2224-02AMS	V8D8408.D	17:13
03	MW02-03S-NWG-111914MSD	N2224-02AMSD	V8D8409.D	17:45

no samples

COMMENTS:

som14.10.02.1616

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-80187

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-80187

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8398.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/26/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.0	U	0.66	1.0	1.0
74-87-3	Chloromethane	0.50	U	0.26	0.50	1.0
75-01-4	Vinyl chloride	0.50	U	0.50	0.50	1.0
74-83-9	Bromomethane	1.0	U	0.80	1.0	1.0
75-00-3	Chloroethane	0.50	U	0.48	0.50	1.0
75-69-4	Trichlorofluoromethane	1.0	U	0.54	1.0	1.0
75-35-4	1,1-Dichloroethene	0.50	U	0.39	0.50	1.0
67-64-1	Acetone	2.5	U	2.2	2.5	5.0
75-15-0	Carbon disulfide	0.50	U	0.34	0.50	1.0
75-09-2	Methylene chloride	0.50	U	0.41	0.50	1.0
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.65	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.50	U	0.24	0.50	1.0
75-34-3	1,1-Dichloroethane	0.50	U	0.25	0.50	1.0
78-93-3	2-Butanone	2.5	U	2.1	2.5	5.0
156-59-2	cis-1,2-Dichloroethene	0.50	U	0.48	0.50	1.0
74-97-5	Bromochloromethane	0.50	U	0.43	0.50	1.0
67-66-3	Chloroform	0.50	U	0.33	0.50	1.0
71-55-6	1,1,1-Trichloroethane	0.50	U	0.50	0.50	1.0
56-23-5	Carbon tetrachloride	1.0	U	0.54	1.0	1.0
107-06-2	1,2-Dichloroethane	0.50	U	0.41	0.50	1.0
71-43-2	Benzene	0.50	U	0.33	0.50	1.0
79-01-6	Trichloroethene	0.50	U	0.36	0.50	1.0
78-87-5	1,2-Dichloropropane	1.0	U	0.61	1.0	1.0
75-27-4	Bromodichloromethane	0.50	U	0.26	0.50	1.0
10061-01-5	cis-1,3-Dichloropropene	0.50	U	0.45	0.50	1.0
108-10-1	4-Methyl-2-pentanone	1.0	U	0.82	1.0	5.0
108-88-3	Toluene	0.50	U	0.32	0.50	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50	U	0.48	0.50	1.0
79-00-5	1,1,2-Trichloroethane	1.0	U	0.38	1.0	1.0
127-18-4	Tetrachloroethene	1.0	U	0.65	1.0	1.0
591-78-6	2-Hexanone	2.5	U	1.7	2.5	5.0
124-48-1	Dibromochloromethane	1.0	U	0.57	1.0	1.0
106-93-4	1,2-Dibromoethane	0.50	U	0.50	0.50	1.0
108-90-7	Chlorobenzene	0.50	U	0.26	0.50	1.0
100-41-4	Ethylbenzene	0.50	U	0.35	0.50	1.0

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-80187

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-80187

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V8D8398.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/26/2014

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

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

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION: UG/L	Q	DL	LOD	LOQ
1330-20-7	Xylene (Total)	1.0	U	0.36	1.0	1.0
100-42-5	Styrene	0.50	U	0.50	0.50	1.0
75-25-2	Bromoform	1.0	U	0.77	1.0	1.0
98-82-8	Isopropylbenzene	0.50	U	0.38	0.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	0.42	0.50	1.0
541-73-1	1,3-Dichlorobenzene	0.50	U	0.29	0.50	1.0
106-46-7	1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0
95-50-1	1,2-Dichlorobenzene	0.50	U	0.33	0.50	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.75	1.0	1.0
120-82-1	1,2,4-Trichlorobenzene	0.50	U	0.26	0.50	1.0
87-61-6	1,2,3-Trichlorobenzene	0.50	U	0.33	0.50	1.0
76-13-1	1,1,2-Trichloro-1,2,2-triflu	1.0	U	0.82	1.0	1.0
110-82-7	Cyclohexane	1.0	U	0.71	1.0	1.0
79-20-9	Methyl acetate	1.0	U	0.29	1.0	1.0
108-87-2	Methylcyclohexane	1.0	U	0.76	1.0	1.0

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

CLIENT SAMPLE NO.

LCS-80187

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab Sample ID: LCS-80187 LCS Lot No.:

Date Extracted: 11/26/2014 Date Analyzed (1): 11/26/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	64.8281	130		30 - 155
Chloromethane	50.0000	0.0000	55.7744	112		40 - 125
Vinyl chloride	50.0000	0.0000	57.8493	116		50 - 145
Bromomethane	50.0000	0.0000	62.7886	126		30 - 145
Chloroethane	50.0000	0.0000	52.1585	104		60 - 135
Trichlorofluoromethane	50.0000	0.0000	53.7449	107		60 - 145
1,1-Dichloroethene	50.0000	0.0000	54.2819	109		70 - 130
Acetone	50.0000	0.0000	68.0175	136		40 - 140
Carbon disulfide	50.0000	0.0000	53.1557	106		35 - 160
Methylene chloride	50.0000	0.0000	53.3153	107		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	50.6575	101		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	47.4722	95		65 - 125
1,1-Dichloroethane	50.0000	0.0000	51.8360	104		70 - 135
2-Butanone	50.0000	0.0000	56.8203	114		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	51.2314	102		70 - 125
Bromochloromethane	50.0000	0.0000	56.5916	113		65 - 130
Chloroform	50.0000	0.0000	52.2042	104		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	50.8508	102		65 - 130
Carbon tetrachloride	50.0000	0.0000	51.1355	102		65 - 140
1,2-Dichloroethane	50.0000	0.0000	51.4282	103		70 - 130
Benzene	50.0000	0.0000	53.2506	107		80 - 120
Trichloroethene	50.0000	0.0000	52.8470	106		70 - 125
1,2-Dichloropropane	50.0000	0.0000	53.5932	107		75 - 125
Bromodichloromethane	50.0000	0.0000	51.9211	104		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	53.2461	106		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	45.5539	91		60 - 135
Toluene	50.0000	0.0000	52.5241	105		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	52.5340	105		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	53.0643	106		75 - 125
Tetrachloroethene	50.0000	0.0000	43.8233	88		45 - 150
2-Hexanone	50.0000	0.0000	45.9787	92		55 - 130
Dibromochloromethane	50.0000	0.0000	50.1346	100		60 - 135
1,2-Dibromoethane	50.0000	0.0000	52.2356	104		80 - 120
Chlorobenzene	50.0000	0.0000	53.3107	107		80 - 120
Ethylbenzene	50.0000	0.0000	52.2895	105		75 - 125
Xylene (Total)	150.0000	0.0000	157.4648	105		81 - 121
Styrene	50.0000	0.0000	53.1376	106		65 - 135
Bromoform	50.0000	0.0000	49.0498	98		70 - 130
Isopropylbenzene	50.0000	0.0000	50.2868	101		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	50.5232	101		65 - 130
1,3-Dichlorobenzene	50.0000	0.0000	51.6407	103		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	50.9395	102		75 - 125
1,2-Dichlorobenzene	50.0000	0.0000	51.9735	104		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	46.9127	94		50 - 130

3 - FORM III

WATER LABORATORY CONTROL
SAMPLE RECOVERY

CLIENT SAMPLE NO.

LCS-80187

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Lab Sample ID: LCS-80187 LCS Lot No.:

Date Extracted: 11/26/2014 Date Analyzed (1): 11/26/2014

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
1,2,4-Trichlorobenzene	50.0000	0.0000	54.6944	109		65 - 135
1,2,3-Trichlorobenzene	50.0000	0.0000	52.2405	104		55 - 140
1,1,2-Trichloro-1,2,2-trif	50.0000	0.0000	54.4140	109		70 - 130
Cyclohexane	50.0000	0.0000	50.0715	100		70 - 130
Methyl acetate	50.0000	0.0000	46.9232	94		70 - 130
Methylcyclohexane	50.0000	0.0000	51.3918	103		70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 50 outside limits

COMMENTS:

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix Spike - EPA Sample No.: MW02-03S-NWG-111914 Level: (TRACE or LOW) LOW

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	56.7136	113		30-155
Chloromethane	50.0000	0.0000	54.3403	109		40-125
Vinyl chloride	50.0000	0.0000	54.5355	109		50-145
Bromomethane	50.0000	0.0000	54.5623	109		30-145
Chloroethane	50.0000	0.0000	49.3593	99		60-135
Trichlorofluoromethane	50.0000	0.6676	50.1822	99		60-145
1,1-Dichloroethene	50.0000	0.0000	50.7852	102		70-130
Acetone	50.0000	0.0000	47.7657	96		40-140
Carbon disulfide	50.0000	0.0000	46.9794	94		35-160
Methylene chloride	50.0000	0.0000	50.6735	101		55-140
trans-1,2-Dichloroethen	50.0000	0.0000	47.9067	96		60-140
Methyl tert-butyl ether	50.0000	0.0000	46.4983	93		65-125
1,1-Dichloroethane	50.0000	0.0000	49.7186	99		70-135
2-Butanone	50.0000	0.0000	53.7212	107		30-150
cis-1,2-Dichloroethene	50.0000	0.0000	49.3440	99		70-125
Bromochloromethane	50.0000	0.0000	53.5495	107		65-130
Chloroform	50.0000	0.0000	50.0151	100		65-135
1,1,1-Trichloroethane	50.0000	0.0000	47.9803	96		65-130
Carbon tetrachloride	50.0000	0.0000	48.2811	97		65-140
1,2-Dichloroethane	50.0000	0.0000	49.8834	100		70-130
Benzene	50.0000	0.0000	50.9349	102		80-120
Trichloroethene	50.0000	0.0000	50.1225	100		70-125
1,2-Dichloropropane	50.0000	0.0000	50.6269	101		75-125
Bromodichloromethane	50.0000	0.0000	48.5693	97		75-120
cis-1,3-Dichloropropene	50.0000	0.0000	48.4390	97		70-130
4-Methyl-2-pentanone	50.0000	0.0000	48.0893	96		60-135
Toluene	50.0000	0.0000	49.5230	99		75-120
trans-1,3-Dichloroprope	50.0000	0.0000	48.5506	97		55-140
1,1,2-Trichloroethane	50.0000	0.0000	52.8722	106		75-125
Tetrachloroethene	50.0000	0.0000	41.5144	83		45-150
2-Hexanone	50.0000	0.0000	46.4261	93		55-130
Dibromochloromethane	50.0000	0.0000	48.1788	96		60-135
1,2-Dibromoethane	50.0000	0.0000	52.2934	105		80-120
Chlorobenzene	50.0000	0.0000	49.7440	99		80-120
Ethylbenzene	50.0000	0.0000	49.5616	99		75-125
Xylene (Total)	150.0000	0.0000	147.9858	99		81-121
Styrene	50.0000	0.0000	49.1600	98		65-135
Bromoform	50.0000	0.0000	48.3891	97		70-130
Isopropylbenzene	50.0000	0.0000	48.4665	97		75-125
1,1,2,2-Tetrachloroetha	50.0000	0.0000	49.0062	98		65-130
1,3-Dichlorobenzene	50.0000	0.0000	48.4541	97		75-125
1,4-Dichlorobenzene	50.0000	0.0000	47.3295	95		75-125
1,2-Dichlorobenzene	50.0000	0.0000	48.7948	98		70-120
1,2-Dibromo-3-chloropro	50.0000	0.0000	47.9228	96		50-130

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix Spike - EPA Sample No.: MW02-03S-NWG-111914 Level: (TRACE or LOW) LOW

1,2,4-Trichlorobenzene	50.0000	0.0000	50.4898	101		65-135
1,2,3-Trichlorobenzene	50.0000	0.0000	49.5137	99		55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	0.0000	47.9203	96		70-130
Cyclohexane	50.0000	0.0000	45.2031	90		70-130
Methyl acetate	50.0000	0.0000	47.5769	95		70-130
Methylcyclohexane	50.0000	0.0000	45.5428	91		70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	59.5567	119		5		0-40	30-155
Chloromethane	50.0000	56.2748	113		3		0-40	40-125
Vinyl chloride	50.0000	56.1394	112		3		0-40	50-145
Bromomethane	50.0000	57.5450	115		5		0-40	30-145
Chloroethane	50.0000	50.1748	100		2		0-40	60-135
Trichlorofluoromethane	50.0000	51.5876	102		3		0-40	60-145
1,1-Dichloroethene	50.0000	51.9712	104		2		0-40	70-130
Acetone	50.0000	48.6963	97		2		0-40	40-140
Carbon disulfide	50.0000	48.6799	97		4		0-40	35-160
Methylene chloride	50.0000	51.0603	102		1		0-40	55-140
trans-1,2-Dichloroethen	50.0000	49.1389	98		3		0-40	60-140
Methyl tert-butyl ether	50.0000	47.9285	96		3		0-40	65-125
1,1-Dichloroethane	50.0000	50.9239	102		2		0-40	70-135
2-Butanone	50.0000	54.5442	109		2		0-40	30-150
cis-1,2-Dichloroethene	50.0000	49.8400	100		1		0-40	70-125
Bromochloromethane	50.0000	54.2173	108		1		0-40	65-130
Chloroform	50.0000	50.9602	102		2		0-40	65-135
1,1,1-Trichloroethane	50.0000	49.9985	100		4		0-40	65-130
Carbon tetrachloride	50.0000	49.7664	100		3		0-40	65-140
1,2-Dichloroethane	50.0000	50.7091	101		2		0-40	70-130
Benzene	50.0000	51.8100	104		2		0-40	80-120
Trichloroethene	50.0000	50.6138	101		1		0-40	70-125
1,2-Dichloropropane	50.0000	51.9540	104		3		0-40	75-125
Bromodichloromethane	50.0000	50.1335	100		3		0-40	75-120
cis-1,3-Dichloropropene	50.0000	49.6277	99		2		0-40	70-130
4-Methyl-2-pentanone	50.0000	49.9859	100		4		0-40	60-135
Toluene	50.0000	50.0310	100		1		0-40	75-120
trans-1,3-Dichloroprope	50.0000	50.6116	101		4		0-40	55-140
1,1,2-Trichloroethane	50.0000	53.5522	107		1		0-40	75-125
Tetrachloroethene	50.0000	42.2544	85		2		0-40	45-150
2-Hexanone	50.0000	49.5273	99		6		0-40	55-130
Dibromochloromethane	50.0000	50.2128	100		4		0-40	60-135
1,2-Dibromoethane	50.0000	53.7926	108		3		0-40	80-120
Chlorobenzene	50.0000	51.2246	102		3		0-40	80-120
Ethylbenzene	50.0000	51.1313	102		3		0-40	75-125
Xylene (Total)	150.0000	151.7188	101		2		0-40	81-121
Styrene	50.0000	50.4826	101		3		0-40	65-135

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPECTRUM ANALYTICAL, INC. Contract:

Lab Code: MITKEM Case No.: N2224 Mod. Ref No.: SDG No.: SN2224

Matrix Spike - EPA Sample No.: MW02-03S-NWG-111914 Level: (TRACE or LOW) LOW

Bromoform	50.0000	50.0263	100		3		0-40	70-130
Isopropylbenzene	50.0000	49.7146	99		3		0-40	75-125
1,1,2,2-Tetrachloroetha	50.0000	51.8238	104		6		0-40	65-130
1,3-Dichlorobenzene	50.0000	50.6238	101		4		0-40	75-125
1,4-Dichlorobenzene	50.0000	49.5636	99		5		0-40	75-125
1,2-Dichlorobenzene	50.0000	51.2494	102		5		0-40	70-120
1,2-Dibromo-3-chloropro	50.0000	51.3805	103		7		0-40	50-130
1,2,4-Trichlorobenzene	50.0000	53.1293	106		5		0-40	65-135
1,2,3-Trichlorobenzene	50.0000	52.0517	104		5		0-40	55-140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0000	49.7190	99		4		0-40	70-130
Cyclohexane	50.0000	46.1469	92		2		0-40	70-130
Methyl acetate	50.0000	48.1858	96		1		0-40	70-130
Methylcyclohexane	50.0000	47.6635	95		5		0-40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits

Spike Recovery: 0 out of 100 outside limits

COMMENTS:

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : Tetra Tech, Inc.

Project: CED Area, WE01-Davisville, resample

Laboratory Workorder / SDG #: N2224

SW846 8015D GRO, Gasoline Range Organic (GRO) by GC-FID

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8015D GRO

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: V4
Instrument Type: GC-FID/PID

Description: HP5890 A
Manufacturer: Hewlett-Packard
Model: 5890

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spikes were performed on samples: MW02-03S-NWG-111914 (N2224-02AMS) and MW02-03S-NWG-111914 (N2224-02AMSD).

Percent recoveries were within the QC limits.

Replicate RPDs were within the advisory QC limits.

E. Internal Standards:

NA.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

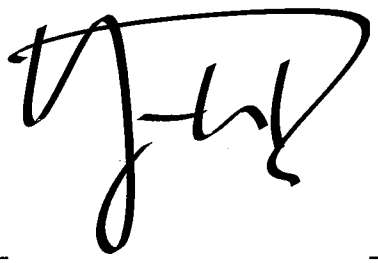
No other unusual occurrences were noted during sample analysis.

H. Manual Integration

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or falling baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.



Signed:_____ _____

Date:_____12/8/2014_____

N2224

CLIENT: Tetra Tech, Inc.
Work Order: N2224
Project: CED Area, WE01-Davisville, resample

ANALYTICAL QC SUMMARY REPORT

GRO_W

SW846 8015D GRO -- Gasoline Range Organic (GRO) by GC-FID

Sample ID: MB-80238	SampType: MBLK	TestCode: GRO_W	Prep Date: 12/02/14 8:23	Run ID: V4_141202A
Client ID: MB-80238	Batch ID: 80238	Units: ug/L	Analysis Date: 12/02/14 13:33	SeqNo: 2199381

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	100 ^	100									
Surrogate: Bromofluorobenzene	18.42		5.0	20.00	0	92.1	87	112	0			

Sample ID: LCS-80238	SampType: LCS	TestCode: GRO_W	Prep Date: 12/02/14 8:23	Run ID: V4_141202A
Client ID: LCS-80238	Batch ID: 80238	Units: ug/L	Analysis Date: 12/02/14 13:05	SeqNo: 2199380

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	527.0	100 ^	100	500.0	0	105	80	120	0			
Surrogate: Bromofluorobenzene	19.09		5.0	20.00	0	95.5	87	112	0			

Sample ID: N2224-02AMS	SampType: MS	TestCode: GRO_W	Prep Date: 12/02/14 8:23	Run ID: V4_141202A
Client ID: MW02-03S-NWG-111	Batch ID: 80238	Units: ug/L	Analysis Date: 12/02/14 15:10	SeqNo: 2199385

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	522.8	100 ^	100	500.0	0	105	60	140	0			
Surrogate: Bromofluorobenzene	19.74		5.0	20.00	0	98.7	87	112	0			

Sample ID: N2224-02AMSD	SampType: MSD	TestCode: GRO_W	Prep Date: 12/02/14 8:23	Run ID: V4_141202A
Client ID: MW02-03S-NWG-111	Batch ID: 80238	Units: ug/L	Analysis Date: 12/02/14 15:41	SeqNo: 2199386

Analyte	Result	LOD	LOQ	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	523.6	100 ^	100	500.0	0	105	60	140	522.8	0.143	20	
Surrogate: Bromofluorobenzene	18.35		5.0	20.00	0	91.7	87	112	0			

Qualifiers: ND - Not Detected at the Limit of Detection; S - Recovery outside accepted recovery limits; LOD - Limit of Detection; B - Analyte detected in the associated Method Blank
J - Analyte detected below Limit of Quantitation; R - RPD outside accepted recovery limits; LOQ - Limit of Quantitation; ^ Qualified to the Limit of Detection (LOD)

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO
CAL ID: SS-VW141006A
ANALYST: WL
INITIAL CAL: 10/6/14
IS/SS ID: STP-VW141006B
LCS-VW141006C
DATE: 10/8/14
COMMENTS:
Reviewed by: 10.9.14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141006.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	V4d07830.d	1.	5ML,VSTD2.54A,VSTD2.54A	OK	06 Oct 2014 10:27
2	4	V4d07831.d	1.	5ML,VSTD0054A,VSTD0054A	OK	06 Oct 2014 10:58
3	5	V4d07832.d	1.	5ML,VSTD0204A,VSTD0204A	OK	06 Oct 2014 11:25
4	6	V4d07833.d	1.	5ML,VSTD0504A,VSTD0504A	OK	06 Oct 2014 11:50
5	7	V4d07834.d	1.	5ML,VSTD1004A,VSTD1004A	OK	06 Oct 2014 12:13
6	8	V4d07835.d	1.	5ML,VSTD2004A,VSTD2004A	OK	06 Oct 2014 12:52
7	9	V4d07836.d	1.	5ML,VICV0504A,VICV0504A	OK	06 Oct 2014 13:19

WL 10/8/14

DATE:

INSTRUMENT V4 SPECTRUM ANALYTICAL, INC. RI DIVISION
INJECTION LOG VOLATILES LABORATORY

METHOD: GRO-W CAL ID: SS-VW141119A ANALYST: WL

INITIAL CAL: 10/6/14 IS/SS ID: STD-VW141119B DATE: 12/2/14
LCS-VW141119C

COMMENTS: Reviewed by: MMS 12/4/14

AS #	FILE	MITKEM ID	CLIENT ID	SAMPLE SIZE	DIL	COMMENTS	IS	SS	pH

Injection Log

Directory: O:\V4.I\141202.B

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	2	V4d08221.d	1.	5ML,VSTD0504J,VSTD0504J	OK	02 Dec 2014 12:34
2	3	V4d08222.d	1.	5ML,LCS-80238,LCS-80238,80238	OK	02 Dec 2014 13:05
3	4	V4d08223.d	1.	5ML,MB-80238,MB-80238,80238	OK	02 Dec 2014 13:33
4	5	V4d08224.d	1.	5ML,N2224-01A,,80238	OK	02 Dec 2014 13:57
5	6	V4d08225.d	1.	5ML,N2224-02A,,80238	OK	02 Dec 2014 14:19
6	7	V4d08226.d	1.	5ML,N2224-03A,,80238	OK	02 Dec 2014 14:42
7	8	V4d08227.d	1.	5ML,N2224-02AMS,,80238	OK	02 Dec 2014 15:10
8	9	V4d08228.d	1.	5ML,N2224-02AMSD,,80238	OK	02 Dec 2014 15:41
9	1	V4d08229.d	1.	5ML,VSTD0504K,VSTD0504K	OK	02 Dec 2014 17:11

WL 12/3/14

Logbook ID 90.0065-10/14

N2224

Spectrum Analytical, Inc. RI Division : VOLATILE SAMPLES RECEIVING LOGBOOK

VOA Log-In Date	Workorder	Client ID	Sample Numbers	Relinquished by:	Received by:	Pres. Used	F/R	Returned to R23
11-19-14	N2216	SEVERSON	01-02	KP		US	R9	
11-19-14	N2208	Duirka	01-04	KP		H	R10	
11-19-14	N2210	Duirka	01	KP		H	R10	
11-19-14	N2225	EPA	01-03	KP		T	R4	
11-19-14	N2226	EPA	01-02	KP		H	R13	
11-19-14	N2198	Tetra Tech	11, 13	KP		H	R9	
11-19-14	N2198	Tetra Tech	12, 14, 15	KP		F	F9	
11-19-14	N2198	Tetra Tech	12, 14, 15	KP		M	R9	
11-19-14	N2224	Tetra Tech	01-03	KP		H	R9	
11-19-14	N2223	HDR	01	KP		H	R9	
11/20/14	N2228	STERLING	01-04	WJL		F	F10	
↓	N2228	STERLING	01-04	WJL		M	R10	
11/20/14	N2227	CRA	01-03	WJL	↓	H	R10	
11-21-14	N2237	Severso	01	KP		E		

Logbook ID 90.0191-08/14

Reviewed By: 11-21-14

"Preservative Used" Key				
UA = Unpreserved Aqueous	H = HCL	A = Air	M = MeOH	E = Encore
US = Unpreserved Soil	N = $NaHSO_4$	P=PE ampule	F = Freeze	T = Trace, HCL

Report Date : 08-Oct-2014 13:24

Spectrum Analytical, Inc. RI Division

INITIAL CALIBRATION DATA

Start Cal Date : 06-OCT-2014 10:27
End Cal Date : 06-OCT-2014 12:52
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\avogadro\organics\V4.i\141006.B\v4GRO.m
Last Edit : 06-Oct-2014 14:10 wluo
Curve Type : Average

Calibration File Names:
Level 1: \\avogadro\organics\V4.i\141006.B\V4D07830.D
Level 2: \\avogadro\organics\V4.i\141006.B\V4D07832.D
Level 3: \\avogadro\organics\V4.i\141006.B\V4D07833.D
Level 4: \\avogadro\organics\V4.i\141006.B\V4D07834.D
Level 5: \\avogadro\organics\V4.i\141006.B\V4D07835.D

Compound	25.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	2000.000 Level 5	___ RRF	% RSD
1 Gasoline Range Organics	91331	87383	91996	90135	90217	90212	1.955
$ 2 Bromofluorobenzene	34988	34530	32951	34542	33322	34067	2.580

Data File: \\avogadro\organics\V4.i\141202.B\V4D08221.D
Report Date: 03-Dec-2014 11:32

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 02-DEC-2014 12:34
Lab File ID: V4D08221.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504J Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141202.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	89712	0.010	0.55474	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	29577	0.010	13.17985	20.00000	Averaged

Data File: \\avogadro\organics\V4.i\141202.B\V4D08229.D
Report Date: 03-Dec-2014 11:32

Spectrum Analytical, Inc. RI Division

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: V4.i Injection Date: 02-DEC-2014 17:11
Lab File ID: V4D08229.D Init. Cal. Date(s): 06-OCT-2014 06-OCT-2014
Analysis Type: WATER Init. Cal. Times: 10:27 12:52
Lab Sample ID: VSTD0504K Quant Type: ESTD
Method: \\avogadro\organics\V4.i\141202.B\v4GRO.m

COMPOUND	RRF / AMOUNT	RF500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Gasoline Range Organics	90212	95112	0.010	-5.43161	20.00000	Averaged
$ 2 Bromofluorobenzene	34067	37590	0.010	-10.34185	20.00000	Averaged