
Release Abatement Measure Completion Report Site Improvement Activities Former General Electric Facility 50 Fordham Road, Wilmington, MA RTN 3-0518

Prepared for:

Lockheed Martin Corporation/Wilmington Realty Trust

Prepared by:

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TABLE OF CONTENTS

SECTION 1 INTRODUCTION.....	1-1
1.1 CONTACT INFORMATION	1-2
1.2 DISPOSAL SITE AND RAM BACKGROUND.....	1-3
SECTION 2 RAM STATUS.....	2-1
2.1 SOIL MANAGEMENT	2-1
2.1.1 Light Pole Excavation – Stockpile 13	2-2
2.1.2 Curbing Excavation	2-2
2.2 AIR MONITORING.....	2-3
2.3 GROUNDWATER MANAGEMENT	2-3
SECTION 3 REMEDIATION WASTE	3-1
SECTION 4 FUTURE RAM ACTIVITIES.....	4-1
SECTION 5 LSP OPINION AND CERTIFICATION.....	5-1
SECTION 6 REFERENCES.....	6-1

TABLE OF CONTENTS (CONTINUED)

LIST OF APPENDICES

Appendix A Laboratory Analytical Reports

LIST OF FIGURES

Figure 1-1 Site Location Map
Figure 1-2 Site Plan
Figure 2-1 Soil Stockpile Generation Areas and Reuse Areas

LIST OF TABLES

Table 2-1 RAM Stockpile and Dewatering Sample Summary
Table 2-2 Summary of Soil Analytical Results – RAM Stockpile Sampling
Table 2-3 Summary of Groundwater Analytical Results – RAM Frac Tank Sample

SECTION 1 INTRODUCTION

Pursuant to the Massachusetts Contingency Plan (MCP) 310 CMR 40.0446, AECOM Technical Services, Inc. (AECOM), on behalf of Lockheed Martin Corporation (Lockheed Martin) and for Wilmington Realty Trust (WRT), has prepared the following Release Abatement Measure (RAM) Completion Report for the former General Electric Company (GE) Facility located at 50 Fordham Road, Wilmington, Massachusetts (site). This report is being submitted within sixty days of completion of the remedial activities detailed in the RAM Plan for the site, which was submitted to the Massachusetts Department of Environmental Protection (MassDEP) on July 3, 2017. Within this report, “property” pertains to the address (40-50 Fordham Road) of the former GE Facility, and “site” refers to the MCP disposal site, identified as 50 Fordham Road and release tracking number (RTN) 3-0518.

A Tier Classification Extension submittal was provided to MassDEP on July 7, 2017 prior to commencement of RAM activities. In addition, no issues were identified by MassDEP as part of their screening level review of the RAM Plan.

In accordance with the MCP, 310 CMR 40.0446(4), this RAM Completion Report contains the following:

- (a) a description of the release or threat of release, site conditions, and surrounding receptors;
- (b) a description of the RAM completed at the disposal site, including work undertaken in response to any conditions of approval imposed by the Department;
- (c) all investigatory and monitoring data obtained during the implementation of the RAM;
- (d) a succinct statement of findings and conclusions resulting from implementation of the RAM, including a statement as to whether the objectives of the RAM have been met;
- (e) details and documentation on the management of any Remediation Waste, Remedial Wastewater, and/or Remedial Additives managed at the site as part of the RAM; and,

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- (f) a description of any ongoing activities related to the RAM that will be conducted at the disposal site, including monitoring activities and the maintenance of fences, caps, and other passive systems.

The MassDEP Bureau of Waste Site Cleanup (BWSC) Transmittal Form BWSC-106 is being submitted electronically to MassDEP concurrently with this completion report via eDEP. Refer to the July 3, 2017 RAM Plan, the November 3, 2017 RAM Status Report No. 1, and the April 27, 2018 RAM Status Report No. 2 completed by AECOM (AECOM, 2017a, 2017b, and 2018) for additional details regarding release history, proposed RAM activities, and RAM activities completed during the first 120days of implementation.

1.1 CONTACT INFORMATION

The following site-specific information is provided.

Person Conducting RAM
And Property Owner:

Wilmington Realty Trust
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Person Completing RAM Submittals:

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LSP for the RAM:

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The RAM activities outlined herein and related to the property improvement and re-development activities were conducted by WRT, with AECOM observing and documenting the work for MCP submittals and completing the submittals on behalf of WRT and Lockheed Martin.

1.2 DISPOSAL SITE AND RAM BACKGROUND

The WRT property is designated as 50 Fordham Road in Wilmington, Massachusetts, as shown on **Figure 1-1**, Site Location Map, though it consists of buildings identified as 40 and 50 Fordham Road. The property consists of a 13-acre parcel east of Fordham Road and north of Concord Street. The 13-acre parcel is located both in the towns of Wilmington and North Reading, in Middlesex County, Massachusetts.

The property is located in a mixed commercial/industrial area, and near residential areas. It is bounded by wooded wetland to the east and north, beyond which are residential properties. Fordham Road is located along the western property boundary with commercial/industrial parcels further west and north along Fordham Road. The former Converse, Inc. property and other commercial/industrial properties are located to the south along Concord Street.

The property contains a number of former industrial buildings, paved parking areas, and an active sewage and wastewater treatment plant for the facility. The buildings are identified as Building 1 and 1A, which are attached, and Building 2. A Treatment Shed that houses an inactive groundwater treatment system is still present. Building 3, the Oil House, the concrete ramp to the former Oil House, the Guard Shack, the former Pump House/Vault, the former Tank Farm, and the original Tank Farm area groundwater treatment building have been removed. The current site plan is included as **Figure 1-2**.

WRT, formerly the Barbo Realty Trust (BRT), is the current property owner and has owned the property at least since the property was developed in the late 1960s. Lockheed Martin never occupied or performed operations at the property; however, Lockheed Martin is responsible for any remediation required by the MCP under RTN 3-0518. As noted in Section 1.1, WRT is responsible for conducting all activities completed under this RAM.

Contamination of the Stickney Well, a currently inactive public supply well for the town of North Reading, was discovered in the late 1970s. Subsequent investigations of multiple surrounding

properties, including the GE facility, began in the early 1980s. Remedial investigations and remedial actions have been ongoing at the site since 1986. In 1987, the MassDEP classified the former GE Facility as a Priority Disposal Site, and in 1994, the MassDEP assigned RTN 3-0518 to the site. The Phase II Comprehensive Site Assessment (CSA) for the site (AECOM, 2017c) provides a detailed summary of investigative and remedial actions conducted from 1986 through 2011 by others, activities conducted by AECOM from 2012 through 2017, and includes a detailed risk characterization. The Phase III Remedial Action Plan (RAP) for the site (AECOM, 2017d) documents the development, evaluation, and selection of remedial alternatives, provides a feasibility evaluation, and projects time periods for achieving any Permanent or Temporary Solution at the site. The Temporary Solution Statement (AECOM, 2017e) describes the temporary solution that has been achieved for site RTN 3-0518.

Manufacturing processes have been performed by a number of firms at the property that have contributed to historic releases of fuels, oils, solvents, and metals to soil, soil gas, bedrock, and groundwater. These releases were primarily limited to the areas east of Buildings 1 and 2, beneath and to the southwest corner of Building 1, and to Outfalls 001 and 002 to the wetland east of the parking lot. Isolated areas of residual soil impacts are potentially present at the site, mainly beneath and east of Building 1 into the western portion of the parking lot, and east of Building 2. Groundwater impacts are the primary risk and regulatory drivers at the site, primarily in deep overburden and in bedrock, and extend downgradient below the wetland to the east. Lesser concentrations of VOCs, petroleum, and metals are present in shallow groundwater.

Analytical data have shown that the following organic and inorganic compounds are associated with RTN 3-0518: chlorinated and volatile organic compounds (CVOCs and VOCs), petroleum hydrocarbons (EPH/VPH), benzene, toluene, ethyl benzene, xylene (BTEX), 1,4-dioxane, and metals.

A RAM Plan was submitted to the MassDEP for WRT on behalf of Lockheed Martin on July 3, 2017 detailing the proposed redevelopment and construction work and associated monitoring activities to be completed at the site by WRT. The objective of the RAM is to ensure that potentially impacted soil, groundwater, or soil gas encountered during construction activities at the property are managed in accordance with the requirements set forth in the Notice of Activity and Use Limitation (AUL) for the property signed July 2015 and recorded on September 28, 2015 at

the Middlesex North Registry of Deeds, the MCP 310 CMR 40.0000, and Policy #WSC-00-425. Based upon the MassDEP's WSC-00-425 policy, "construction activities at a disposal site meet the regulatory definition of a remedial action, to the extent that such activities involve the potential removal, disposal and relocation of released oil or hazardous material."

WRT initiated excavation activities related to the redevelopment of the site under the RAM in July 2017. Prior to the submittal of the RAM Plan, limited site work was completed, including site preparation, demolition of various above-grade and sub-grade structures, the removal of surface concrete and asphalt paving from areas throughout the site, and exploratory test pits adjacent to select excavation areas. After the submittal of the RAM Plan and Tier Classification Extension, subsurface excavation was completed in the following planned construction areas as detailed in the RAM Status Reports No. 1 and No. 2: wastewater tight tank and associated trenching, drainage swale excavations, and utility, hydrant, and curbing excavations. During these excavations, AECOM personnel observed and field-screened soils using a photoionization detector (PID) for the purposes of providing input relative to the segregation, management, and sampling of soils. Excavated soils were segregated into stockpiles and sampled for site constituents of concern (COCs). Analytical results were reviewed to determine if the soil could be re-used on-site or if it was necessary to transport the stockpiled soil off-site for either disposal or recycling at an appropriate facility. During the RAM activities, all soil was able to be re-used on-site with the exception of one stockpile (Stockpile 10). The transportation of this soil off-site for recycling was completed during the second reporting period and is documented in Status Report No. 2. Dewatering was required in one small utility excavation during the third reporting period, as discussed below.

SECTION 2

RAM STATUS

WRT initiated excavation activities related to the redevelopment of the site under a RAM in July 2017. The majority of the site work was completed between July and November 2017 and documented in RAM Status Report No. 1 dated November 3, 2017 and RAM Status Report No. 2 dated April 27, 2018. The final phase of work under the RAM was completed from April to June 2018 and is documented in this report. This work included small excavations related to ongoing site redevelopment activities, including one light pole and curbing around parking lot islands. The three areas (light poles, islands, and drainage swale) where soil excavation, grading, staging, and re-use of soils with levels less than Method 1 S-1 risk standards occurred on-site in accordance with the RAM Plan are depicted on **Figure 2-1**. Information related to the limited excavation and dewatering completed during this reporting period, including field observations, amount and size of stockpiles generated, volume of groundwater generated, and laboratory analytical data and re-use options for the generated soil and groundwater, are detailed in the soil and groundwater management sections below.

2.1 SOIL MANAGEMENT

During the minimal excavation activities completed during this reporting period (April through June 2018), AECOM personnel observed one utility (light pole) excavation and two small excavations for granite curbing and provided input relative to the segregation, management, and sampling of soils. All excavated subsurface soils were stockpiled as Stockpile 13. After excavation was complete, the generated soil in Stockpile 13 was sampled for analysis of site COCs including: VOCs, EPH, VPH, and total arsenic, chromium, copper, lead, zinc, and cyanide. Analytical results were reviewed to determine if the soil could be re-used on-site within the site boundaries (concentrations all below Method 1 S-1 Soil Standards) or if it was necessary to transport the stockpile off-site for either disposal or recycling at an appropriate facility (concentrations above Method 1 S-1 Soil Standards).

Stockpiled soil was staged in the parking area to the east of Building 1A (eastern parking lot area), as shown on **Figure 2-1**. Soil was stockpiled on 6 mil poly sheeting and covered with 6 mil poly sheeting at the end of each day. Soils that were excavated and temporarily stored in the stockpiles for screening are described below and presented in **Figure 2-1**. Approximately 1,280 cubic yards of soil were managed under this RAM. This is less than the potential total of 4,500 cubic yards noted in the RAM Plan.

2.1.1 Light Pole Excavation – Stockpile 13

Excavation for the re-location of one light pole in the eastern parking lot (EPL) was completed on April 2-5, 2018. The excavation extended to a maximum depth of six feet below ground surface (ft bgs). No odors or stained soil were observed during these activities. The soils removed during excavation of these areas were placed into Stockpile 13, which totaled approximately 8.8 cubic yards. One composite soil sample was collected from multiple locations within the stockpile and submitted to Eurofins Spectrum Analytical, Inc. of Agawam, MA (Eurofins) for analysis of site COCs in accordance with the RAM Plan. Laboratory analytical results from Stockpile 13 did not identify concentrations of COCs above Method 1 S-1 Soil Standards. Based on the analytical results, it was determined that soil from Stockpile 13 could be re-used within the boundaries of the site. As backfill of the light pole excavation needed to be completed while the hole was dewatered, the contractor backfilled the hole with a combination of clean peastone gravel and site soils that had been previously excavated under the RAM in fall 2017 and deemed suitable for reuse on-site. Once the analytical results confirmed that Stockpile 13 soils were suitable for on-site reuse, the soils were spread in the soil reuse area north of Building 2.

Additional details related to the stockpiles are included in **Table 2-1**. Laboratory analytical results from the stockpile samples are summarized in **Table 2-2** and a copy of the laboratory analytical report is included as **Appendix A**.

2.1.2 Curbing Excavation

Excavation of two shallow trenches for installation of granite curbing in the EPL behind K1 Speed was completed from April 6-8, 2018. The excavations extended to a maximum depth of 1.5 ft bgs. The upper 0.75 ft of topsoil was scraped aside for reuse. The material encountered from 0.75 to 1.5 ft bgs consisted of gravel, which was spread along the edges of the curbing trench and then

covered with the topsoil following installation of the curbing. No odors or staining were observed within the soils. No soil was generated from these shallow excavations.

2.2 AIR MONITORING

Based on the limited nature (small areas and shallow depths) of the excavation activities completed during this reporting period, quantitative air monitoring was not completed.

AECOM did not observe excessive visible dust during excavation activities. Additionally, access to the work zones was limited, and passage of trespassers/workers through the work zones during excavation was observed to be minimal. Exposure to dust by potential receptors was further limited as site workers (other than construction workers) within the RAM area consisted mostly of people within cars driving through the exterior parking areas.

2.3 GROUNDWATER MANAGEMENT

Groundwater was encountered during RAM activities completed during this reporting period in the excavation for the light pole in the EPL. Groundwater was encountered at approximately 1.5-2 feet below the asphalt. Dewatering was required to excavate to 6 feet to install the light pole and re-connect the electricity. Dewatering was performed in accordance with the RAM Plan and the water was temporarily stored within a frac tank located adjacent to the excavation. Approximately 7,000 gallons were generated on April 4, 2018. A visual inspection of the frac tank indicated that the tank was delivered empty and with clean interior surfaces. Once dewatering was complete, a sample of the water was submitted for analysis of site COCs including: VOCs, EPH, VPH, and total arsenic, chromium, copper, lead, zinc, and cyanide. Groundwater analytical results were reviewed to determine if the groundwater could be discharged to the ground on-site (concentrations all below RCGW-1) or if treatment and/or off-site disposal of the groundwater would be required. All of the analytical results were below RCGW-1 concentrations as summarized in **Table 2-3**. Based on these results, the water was determined to not be a remediation waste and that it was suitable for discharge to the ground on-site and upgradient of the point of removal. Between April 18 and April 21, 2018, the water from the frac tank (~7,000 gallons) was slowly discharged and allowed to infiltrate into the ground at the Northern EPL Drainage Swale as noted on **Figure 2-1**. Visual and olfactory observations of the water prior to discharge indicated that no sheen or odor were observed within the frac tank. The minor amount

of soil that settled in the tank bottom (below S-1 standards based on Stockpile 13 analytical results) was spread within this drainage swale. The swale was subsequently hydro-seeded.

SECTION 3 REMEDATION WASTE

Impacted soil (concentrations of COCs above Method 1 S-1 Standards) was not identified during RAM activities, with the exception of approximately 20 cubic yards of soil (Stockpile 10). Results from this stockpile identified one EPH fraction at concentrations above Method 1 S-1, S-2, and S-3 Soil Standards. Stockpile 10 (20 cubic yards weighing approximately 40.5 tons) was transported off-site on December 19, 2017 under a MassDEP Bill of Lading to Aggregate Recycling Corp (ARC) of Eliot, ME for asphalt batching in accordance with 310 CRM 40.0030. Waste generation and disposal documentation for Stockpile 10 was included in RAM Status Report No. 2 dated April 27, 2018. All other stockpiles generated under the RAM (Stockpiles 1 through 9, 11, 12, and 13) have been distributed to designated re-use areas on-site (**Figure 2-1**), as allowed based on laboratory analytical results below S-1 Soil Standards. Documentation of the generation and management of these other stockpiles can be found in RAM Status Report No. 1, No. 2 or this Final Completion Report.

SECTION 4 FUTURE RAM ACTIVITIES

All activities under this RAM are complete and all objectives of the RAM have been achieved. No additional activities or submittals are required following this RAM Completion Report.

SECTION 5

LSP OPINION AND CERTIFICATION

The seal and signature of Daniel W. Folan, the LSP of this RAM Completion Report, is included in the RAM Transmittal Form (BWSC 106) filed via eDEP. It is the opinion of the LSP-of-Record, Daniel W. Folan, that to the best of his knowledge, information and belief, the response actions that were the subject of this RAM (i) were implemented in accordance with the applicable provision of M.G.L. c.21E and 310 CMR 40.000, (ii) were appropriate and reasonable to accomplish the purposes of such response actions as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR40.0000, (iii) complied with the identified provisions of all orders, permits, and approvals identified in this submittal and (iv) are considered to be complete.

SECTION 6 REFERENCES

AECOM, 2017a. Release Abatement Measure Plan, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518. July 2017.

AECOM, 2017b. Release Abatement Measure Status Report No. 1, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518. November 2017.

AECOM, 2017c. Draft MCP Phase II Comprehensive Site Assessment, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518. May 2017.

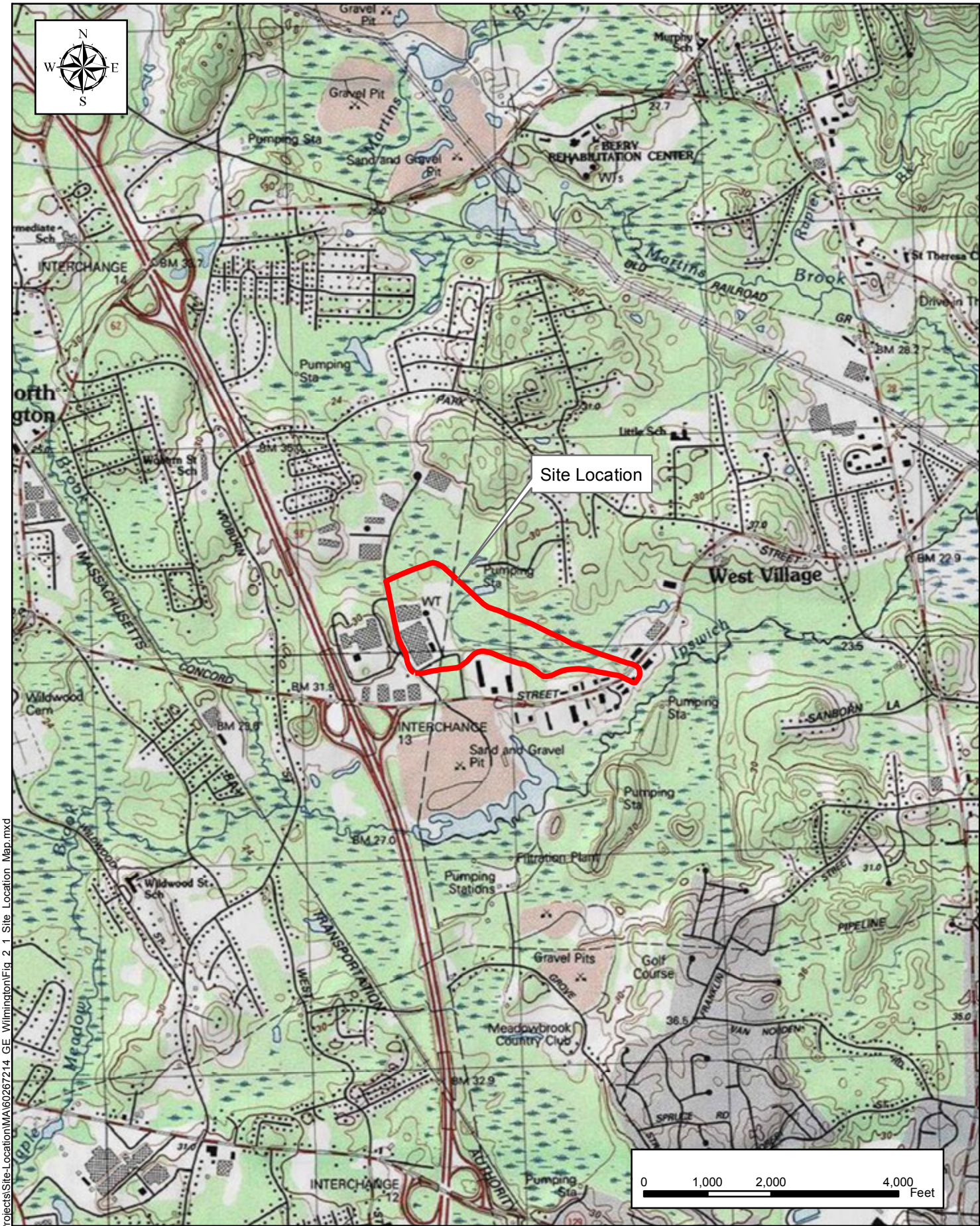
AECOM, 2017d. Draft Phase III Remedial Action Plan, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518. May 2017.

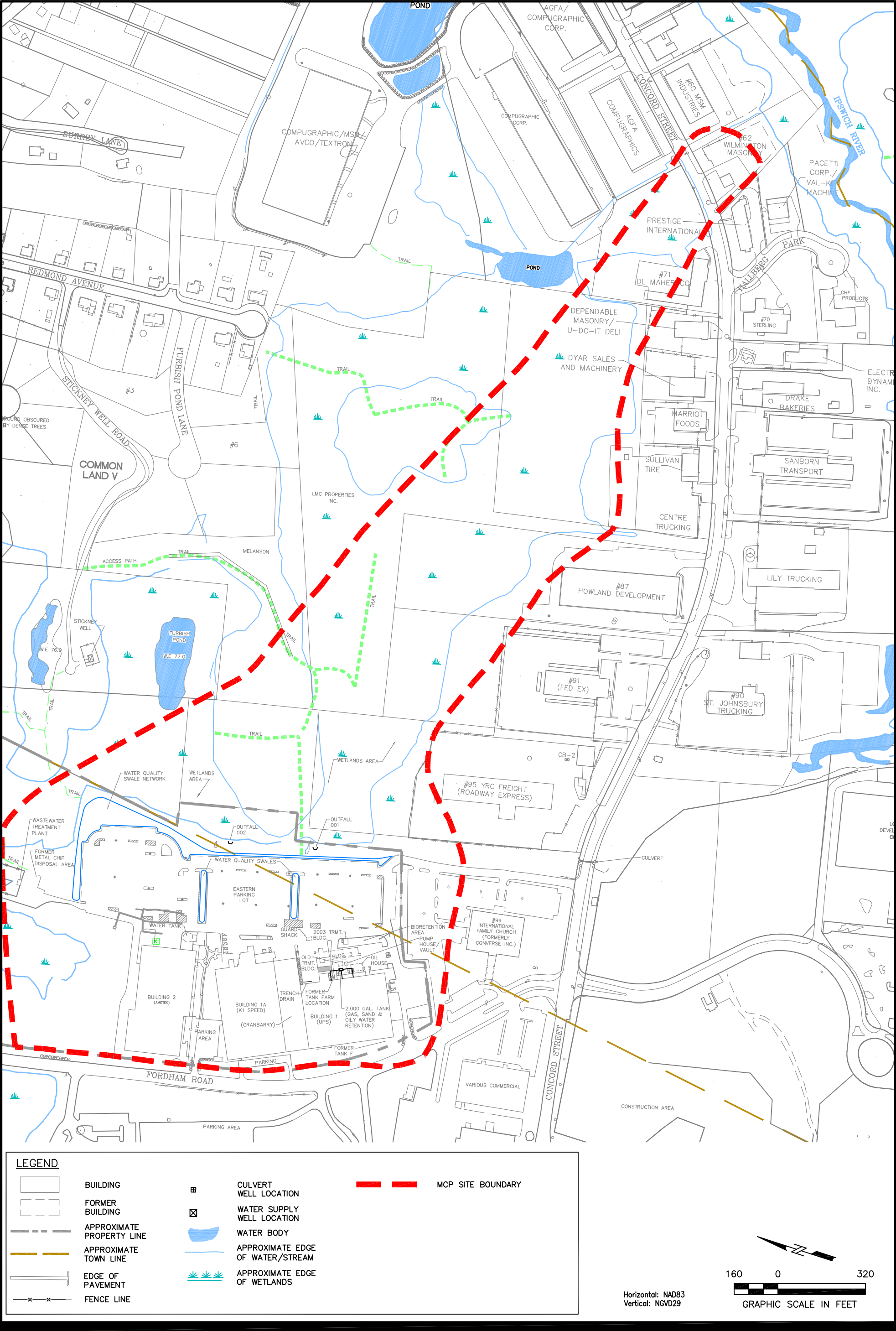
AECOM, 2017e. Temporary Solution Statement, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518, May 2017.

AECOM, 2018. Release Abatement Measure Status Report No. 2, Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518. April 2018.

MassDEP, 2014. Massachusetts Contingency Plan, 310 CMR 40.0000, December 31, 2007, Amended April 25, 2014 and June 20, 2014.

FIGURES

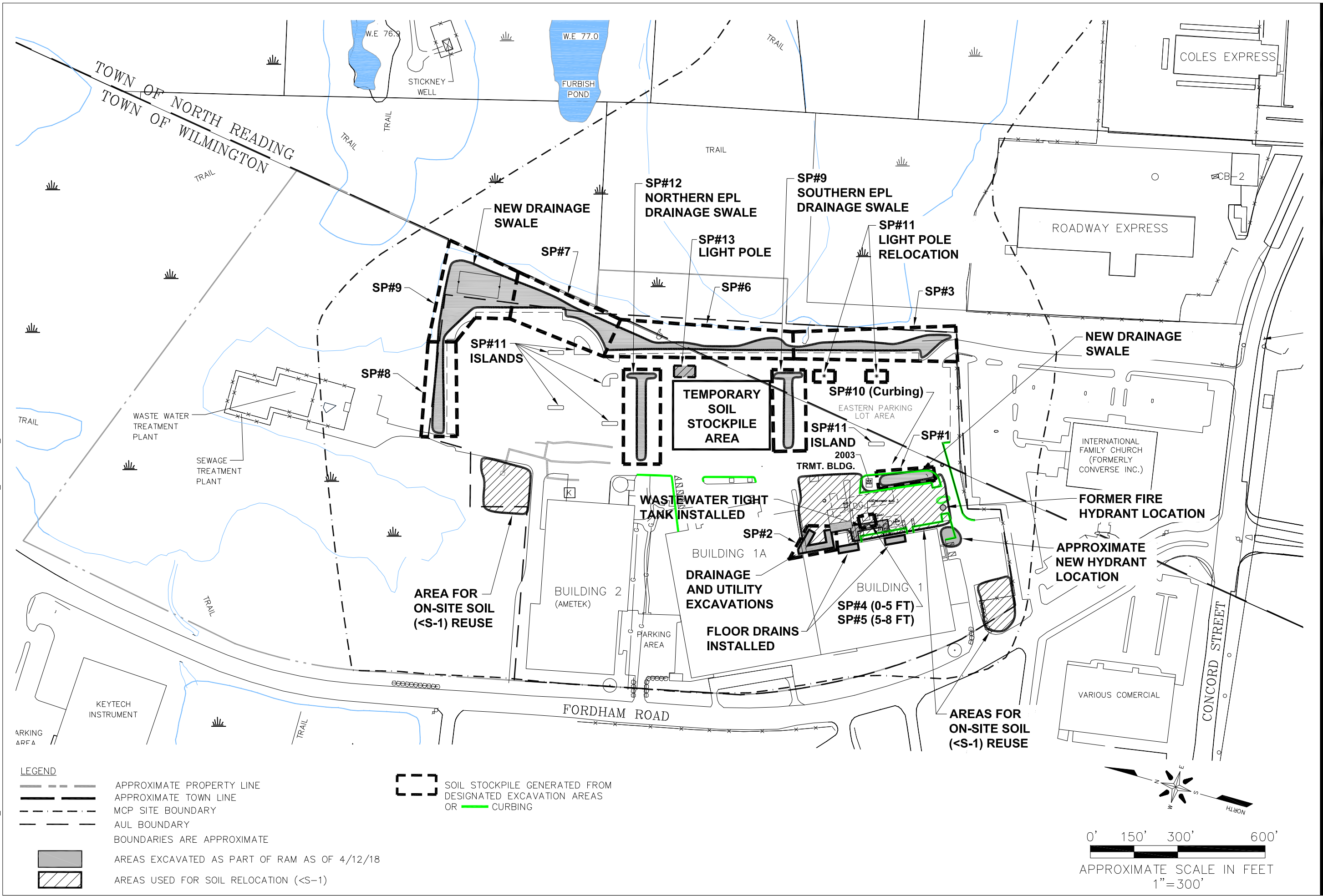




Former GE Facility - 50 Fordham Rd, Wilmington, MA
Lockheed Martin Corporation

SITE PLAN





TABLES

Table 2-1
RAM Stockpile and Dewatering Sample Summary
Former GE Facility, 50 Fordham Rd, Wilmington, MA

Stockpile ID	RAM Status Report	Soil Excavation Location	Stockpile Generation Date(s)	Approx. Volume (cy)	Stockpile Sample Date	Sample Results Received	Stockpile Sample ID	Sample Results	Soil End Use	Final Soil Location	Stockpile Discrete Sample Screening (ranges in ppm)
1	1	Swale near GZA-102 wells	7/6/17-7/10/17	240	7/10/2017	7/15/2017	SP1_071017-1	All < S1	Re-use on-site	Southern re-use area	5 samples: (0.0 - 0.2)
2	1	Drainage trench by loading dock	7/10/2017	12	7/10/2017	7/15/2017	SP2_071017-1	All < S1	Re-use on-site	Southern re-use area	5 samples: (0.2 - 2.3)
3	1	Southern area of swales east of EPL	7/11/17 - 7/18/17	200	7/18/2017	7/24/2017	SP3_071817-1	All < S1	Re-use on-site	Northern re-use area	5 samples: (0.0 - 0.1)
4	1	Tight tank soils 0-5 ft bgs	7/12/2017	20	7/12/2017	7/19/2017	SP4_071217-1	All < S1	Re-use on-site	Northern re-use area	5 samples: (0.0 - 0.1)
5	1	Tight tank soils 5-8.5 ft bgs	7/12/2017	20	7/12/2017	7/19/2017	SP5_071217-1	All < S1	Re-use on-site	Northern re-use area	5 samples: (13.2 - 335.8)
6	1	Southern middle area of swales east of EPL	7/18/17-7/26/17	200	7/26/2017	8/2/2017	SP6_072617-1	All < S1	Re-use on-site	Southern re-use area and lot east of Building 1	5 samples: (all 0.0)
7	1	Northern area of swales north of EPL	7/20/2017	120	7/20/2017	7/26/2017	SP7_072017-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	5 samples: (0.0 - 0.2)
8	1	Northern area of swales north and east of EPL	7/21/17-7/31/17	240	7/31/2017	8/7/2017	SP8_073117-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	6 samples: (all 0.0)
9	1	Northeastern area of swales northeastern corner of EPL; swale in center of EPL	7/31/17-8/3/17	150	8/3/2017	8/10/2017	SP9_080317-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	5 samples: (0.0 - 0.1)
10	1 & 2	Curbing trench soils from 0-1.5 ft bgs	8/10/17-8/11/17	20	8/11/2017	8/15/2017	SP10_081117-1	EPH >S1	Off site recycling or disposal	Recycling at an offsite facility (ARC, Eliot, ME)	Not measured
11	2	Islands in EPL from 0-2 inches bgs and relocation of lightpoles in EPL from 0-3 ft bgs	10/9/17-10/11/17	40	10/11/2017	10/17/2017	SP11_101117-1	All < S1	Re-use on-site	Re-use in original excavation or area east of Bulding 1	Not measured
12	2	Northern swale in the EPL soils from 0-1 ft bgs	10/24/17-10/31/17	10	11/1/2017	11/6/2017	SP12_110117-1	All < S1	Re-use on-site	Re-use area east of Bulding 1	5 samples: (all 0.0)
13	Completion	Light pole in east-central EPL behind Building 1A (K1 Speed)	4/2 - 4/2018	8.8	4/5/2018	4/16/2018	SP13_040518-1	All < S1	Re-use on-site	Northern re-use area	4 samples: (all 0.0)

Sample Location	RAM Report	Sample Location	Water Generation Date(s)	Approx. Volume (Gals)	Frac Tank Sample Date	Sample Results Received	Water Sample ID	Sample Results	Water & Silt End Use	Final Water & Silt Disposition	Observations
Frac Tank	Completion	Water from dewatering excavation for light pole installation (SP13)	4/4/2018	7,000	4/5/2018	4/16/2018	FRAC1_040518-1	All < RCGW1	7,000 gallons of water allowed to infiltrate to ground in drainage swale on property just upgradient of source location; silt spread at same location	Drainage swale in central EPL behind Building 1A (K1 Speed)	No sheen, no odor

Table 2-2
Summary of Soil Analytical Results - RAM Stockpile Sampling
Former GE Facility, 50 Fordham Rd, Wilmington, MA

Client ID:	MassDEP RCS-1	MassDEP RCS-2	MA Method 1	MA Method 1	MA Method 1	SP1 071017-1	SP2 071017-1	SP3 071817-1	SP4 071217-1	SP5 071217-1	SP6 072617-1	SP7 072017-1	SP8 073117-1	SP8 073117-2	SP9 080317-1	SP10 081117-1	SP11 101117-1	SP12 110117-1
Lab ID:	Reportable	Reportable	S-1 Soil &	S-2 Soil &	S-3 Soil &	SC36812-03	SC36812-02	SC37123-02	SC36934-02	SC36934-03	SC37220-02	SC37220-02	SC37605-02	SC37605-03 (DUP)	SC37797-02	SC38055-02	SC40242-01	SC40987-02
Matrix:	Concentrations	Concentrations	GW-1	GW-1	GW-1	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Date:						10-Jul-17	10-Jul-17	18-Jul-17	12-Jul-17	12-Jul-17	26-Jul-17	20-Jul-17	20-Jul-17	20-Jul-17	3-Aug-17	11-Aug-17	11-Oct-17	1-Nov-17
MADEP EPH 5/2004 R (mg/kg dry)																		
C9-C18 Aliphatic Hydrocarbons	1000	3000	1000	3000	5000	< 10.4	< 10.4	<10.7	< 10.4	< 10.8	< 10.9	< 11.1	< 10.6	< 10.7	< 10.8	< 10.4	< 10.5	< 10.5
C19-C36 Aliphatic Hydrocarbons	3000	5000	3000	5000	5000	19.5	<10.4	<10.7	51.2	18	33.4	< 11.1	< 10.6	< 10.7	< 10.8	5.460	< 10.5	98
C11-C22 Aromatic Hydrocarbons	1000	3000	1000	1000	1000	16.9	<10.4	11.3	35.4	18.4	23.3	< 11.1	< 10.6	< 10.7	< 10.8	< 10.4	< 10.5	20.8
MADEP VPH 5/2004 Rev. 1.1 (mg/kg)																		
C5-C8 Aliphatic Hydrocarbons	100	500	100	500	500	< 5.22	< 4.92	< 1.02	< 1.77	3.4	< 0.740	< 0.863	< 0.722	< 0.752	< 0.802	< 0.703	< 1.29	< 0.723
C9-C12 Aliphatic Hydrocarbons	1000	3000	1000	3000	5000	1.58	< 0.328	< 0.342	< 0.591	20	< 0.247	< 0.288	< 0.241	< 0.251	< 0.428	< 0.234	< 0.311	< 0.386
C9-C10 Aromatic Hydrocarbons	100	500	100	300	300	0.994	< 0.328	< 0.342	< 0.591	19	< 0.543	< 0.288	0.275	< 0.251	< 0.428	< 0.234	< 0.311	< 0.386
Total Metals SW846 6010C (mg/kg)																		
Arsenic	20	20	20	20	50	7.44	8.16	8.34	7.2	7.72	10.2	11.8	11.1	12.8	11.8	7.41	10.4	12.8
Chromium	100	200	100	200	200	9.89	10.9	13	17.7	12.3	10.7	21.1	16.3	11.7	14.2	12.6	11.5	13.2
Copper	1000	10000	NE	NE	NE	6.09	6.25	7.16	11.9	10.9	9.27	8.52	7.6	8.21	7.3	7.47	8.37	< 13.7
Lead	200	600	200	600	600	11.8	6.17	10.8	10.1	10.4	15	7.56	8.85	7.93	7.46	8.73	8.35	8.59
Zinc	1000	3000	1000	3000	5000	34.5	19.5	21.9	44.8	25.4	20.4	20.9	17.7	15	19.2	26.1	16.5	22.9
Total Cyanide SW9010C																		
Cyanide	30	100	30	100	500	< 0.54	< 0.53	<0.54	<0.53	<0.46	<0.55	<0.56	<0.477	<0.412	< 0.369	< 0.437	< 0.281	< 0.281
VOC SW846 8260C (µg/kg)																		
1,1,2-Trichlorotrifluoroethane (Freon 113)	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Acetone	6000	50000	6000	6000	6000	< 46.4	< 48.2	< 50.0	< 76.6	< 66.8	< 49.0	< 55.1	< 49.9	< 48.9	< 48.5	< 47.9	< 48.4	< 4.61
Benzene	2000	200000	2000	2000	2000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Bromobenzene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Bromochloromethane	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Bromodichloromethane	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Bromofom	100	1000	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Bromomethane	500	500	500	500	500	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
2-Butanone (MEK)	4000	50000	4000	4000	4000	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
n-Butylbenzene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
sec-Butylbenzene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
tert-Butylbenzene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Carbon disulfide	< 9.80	1000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Carbon tetrachloride	5000	5000	10000	10000	10000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Chlorobenzene	1000	3000	1000	1000	1000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Chloroethane	100000	1000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Chloroform	200	200	400	400	400	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Chloromethane	100000	1000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
2-Chlorotoluene	100000	1000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
4-Chlorotoluene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,2-Dibromo-3-chloropropane	10000	100000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
Dibromochloromethane	5	30	5	5	5	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,2-Dibromoethane (EDB)	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Dibromomethane	500000	5000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,2-Dichlorobenzene	9000	100000	9000	9000	9000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,3-Dichlorobenzene	3000	200000	3000	3000	3000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,4-Dichlorobenzene	700	1000	700	700	700	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Dichlorodifluoromethane (Freon12)	1000000	10000000	NE	NE	NE	< 9.29	< 9.64	< 10.0	< 15.3	< 13.4	< 9.80	< 11.0	< 9.98	< 9.78	< 9.71	< 9.59	< 96.8	< 9.21
1,1-Dichloroethane	400	9000	400	400	400	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,2-Dichloroethane	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,1-Dichloroethene	3000	40000	3000	3000	3000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
cis-1,2-Dichloroethene	300	400	300	300	300	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
trans-1,2-Dichloroethene	1000	1000	1000	1000	1000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,2-Dichloropropane	100	100	100	100	100	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,3-Dichloropropane	500000	5000000	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
2,2-Dichloropropane	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
1,1-Dichloropropene	NE	NE	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
cis-1,3-Dichloropropene	10	100	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
trans-1,3-Dichloropropene	10	100	NE	NE	NE	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Ethylbenzene	40000	1000000	40000	40000	40000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	< 4.79	< 4.84	< 4.61
Hexachlorobutadiene	30000	100000	30000	100000	100000	< 4.64	< 4.82	< 5.00	< 7.66	< 6.68	< 4.90	< 5.51	< 4.99	< 4.89	< 4.85	<		

Table 2-3
Summary of Groundwater Analytical Results - RAM Frac Tank Sample
Former GE Facility, 50 Fordham Rd, Wilmington, MA

Client ID: Lab ID: Matrix: Sample Date:	MassDEP RCGW-1 Reportable Concentrations	MA Method 1 GW-1	MA Method 1 GW-2	MA Method 1 GW-3	FRAC1_040518-1 SC45495-02 Groundwater 5-Apr-18
MADEP EPH 5/2004 R (µg/l)					
C9-C18 Aliphatic Hydrocarbons	700	700	5000	50000	< 100
C19-C36 Aliphatic Hydrocarbons	14000	14000	NE	50000	< 100
C11-C22 Aromatic Hydrocarbons	200	200	50000	5000	< 100
MADEP VPH 5/2004 Rev. 1.1 (µg/l)					
C5-C8 Aliphatic Hydrocarbons	300	300	3000	50000	< 75.0
C9-C12 Aliphatic Hydrocarbons	700	700	5000	50000	< 25.0
C9-C10 Aromatic Hydrocarbons	200	200	4000	50000	< 25.0
Total Metals SW846 6010C (mg/l)					
Arsenic	0.01	0.01	NE	0.9	0.0083
Chromium	0.1	0.1	NE	0.3	< 0.0050
Copper	10	NE	NE		< 0.0050
Lead	0.01	0.015	NE	0.01	< 0.0075
Zinc	0.9	5	NE	0.9	0.0182
Dissolved Metals SW846 6010C (mg/l)					
Arsenic	0.01	0.01	NE	0.9	0.0046
Chromium	0.1	0.1	NE	0.3	< 0.0050
Copper	10	NE	NE		< 0.0050
Lead	0.01	0.015	NE	0.01	< 0.0075
Zinc	0.9	5	NE	0.9	0.0128
Total Cyanide SW9010C (mg/l)					
Cyanide	0.03	0.2	NE	0.03	<0.0050
VOC SW846 8260C (µg/l)					
1,1,2-Trichlorotrifluoroethane (Freon 113)	NE	NE	NE	NE	< 1.00
Acetone	6300	6300	50000	50000	14.5
Benzene	5	5	1000	10000	< 1.00
Bromobenzene	1000	NE	NE	NE	< 1.00
Bromochloromethane	NE	NE	NE	NE	< 1.00
Bromodichloromethane	3	3	6	50000	< 0.50
Bromoform	4	4	700	50000	< 1.00
Bromomethane	7	10	7	800	< 2.00
2-Butanone (MEK)	4000	4000	50000	50000	28.7
n-Butylbenzene	NE	NE	NE	NE	< 1.00
sec-Butylbenzene	NE	NE	NE	NE	< 1.00
tert-Butylbenzene	1000	NE	NE	NE	< 1.00
Carbon disulfide	1000	NE	NE	NE	< 2.00
Carbon tetrachloride	2	5	2	5000	< 1.00
Chlorobenzene	100	100	200	1000	< 1.00
Chloroethane	1000	NE	NE	NE	< 2.00
Chloroform	50	70	50	20000	< 1.00
Chloromethane	1000	NE	NE	NE	< 2.00
2-Chlorotoluene	1000	NE	NE	NE	< 1.00
4-Chlorotoluene	NE	NE	NE	NE	< 1.00
1,2-Dibromo-3-chloropropane	100	NE	NE	NE	< 2.00
Dibromochloromethane	2	2	20	50000	< 0.50
1,2-Dibromoethane (EDB)	0.02	0.02	2	50000	< 0.50
Dibromomethane	5000	NE	NE	NE	< 1.00
1,2-Dichlorobenzene	600	600	8000	2000	< 1.00
1,3-Dichlorobenzene	100	100	6000	50000	< 1.00
1,4-Dichlorobenzene	5	5	60	8000	< 1.00
Dichlorodifluoromethane (Freon12)	10000	NE	NE	NE	< 2.00
1,1-Dichloroethane	70	70	2000	20000	< 1.00
1,2-Dichloroethane	5	5	5	20000	< 1.00
1,1-Dichloroethene	7	7	80	30000	< 1.00
cis-1,2-Dichloroethene	70	70	20	50000	< 1.00
trans-1,2-Dichloroethene	80	100	80	50000	< 1.00
1,2-Dichloropropane	3	5	3	50000	< 1.00
1,3-Dichloropropane	5000	NE	NE	NE	< 1.00
2,2-Dichloropropane	NE	NE	NE	NE	< 1.00
1,1-Dichloropropene	NE	NE	NE	NE	< 1.00
cis-1,3-Dichloropropene	0.5	NE	NE	NE	< 0.50
trans-1,3-Dichloropropene	0.5	NE	NE	NE	< 0.50
Ethylbenzene	700	700	20000	5000	< 1.00
Hexachlorobutadiene	0.6	0.6	50	3000	< 0.50
2-Hexanone (MBK)	1000	NE	NE	NE	< 2.00
Isopropylbenzene	10000	NE	NE	NE	< 1.00
4-Isopropyltoluene	1000	NE	NE	NE	< 1.00
Methyl tert-butyl ether	70	70	50000	50000	< 1.00
4-Methyl-2-pentanone (MIBK)	350	350	50000	50000	< 2.00
Methylene chloride	5	5	2000	50000	< 2.00
Naphthalene	140	140	700	20000	< 1.00
n-Propylbenzene	1000	NE	NE	NE	< 1.00
Styrene	100	100	100	6000	< 1.00
1,1,1,2-Tetrachloroethane	5	5	10	50000	< 1.00
1,1,2,2-Tetrachloroethane	2	2	9	50000	< 0.50
Tetrachloroethene	5	5	50	30000	< 1.00
Toluene	1000	1000	50000	40000	< 1.00
1,2,3-Trichlorobenzene	NE	NE	NE	NE	< 1.00
1,2,4-Trichlorobenzene	70	70	200	50000	< 1.00
1,1,1-Trichloroethane	200	200	4000	20000	< 1.00
1,1,2-Trichloroethane	5	5	900	50000	< 1.00
Trichloroethene	5	5	5	5000	< 1.00
Trichlorofluoromethane (Freon 11)	10000	NE	NE	NE	< 1.00
1,2,3-Trichloropropane	1000	NE	NE	NE	< 1.00
1,2,4-Trimethylbenzene	10000	NE	NE	NE	< 1.00
1,3,5-Trimethylbenzene	100	NE	NE	NE	< 1.00
Vinyl chloride	2	2	2	50000	< 1.00
m,p-Xylene	5000	NE	NE	NE	< 2.00
o-Xylene	6000	NE	NE	NE	< 1.00
Tetrahydrofuran	5000	NE	NE	NE	62.2
Ethyl ether	1000	NE	NE	NE	< 1.00
Tert-amyl methyl ether	NE	NE	NE	NE	< 1.00
Ethyl tert-butyl ether	NE	NE	NE	NE	< 1.00
Di-isopropyl ether	1000	NE	NE	NE	< 1.00
1,4-Dioxane	0.3	0.3	6000	50000	< 20.0

Notes:
< - Non-detect at laboratory detection limit (detection limit shown after <)
mg/l - milligrams per liter
ug/l - micrograms per liter
NE = not established
Detections are bolded
MCP - Massachusetts Contingency Plan
Exceedance of RCGW-1 RCs and Method 1 Standards are yellow highlighted

APPENDIX A – LABORATORY ANALYTICAL REPORTS

Report Date:
16-Apr-18 17:41

Laboratory Report SC45495

AECOM Environment
250 Apollo Drive
Chelmsford, MA 01824
Attn: Nicole Callahan

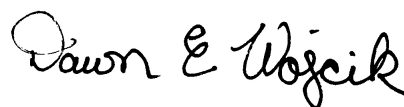
Project: LMC-Wilmington- 50 Fordham Rd. - MA
Project #: 60552044

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393



Authorized by:
Dawn Wojcik
Laboratory Director



Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 48 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our Quality web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC45495
Project: LMC-Wilmington- 50 Fordham Rd. - MA
Project Number: 60552044

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SC45495-01	SP13_040518-1	Soil	05-Apr-18 11:00	06-Apr-18 16:16
SC45495-02	FRAC1_040518-1	Ground Water	05-Apr-18 12:00	06-Apr-18 16:16
SC45495-03	Trip Blank	Aqueous	05-Apr-18 00:00	06-Apr-18 16:16

The following outlines the condition of all VPH samples contained within this report upon laboratory receipt.

Matrices	Ground Water Soil		
Containers	✓ Satisfactory		
Sample Preservative	Aqueous (acid preserved)	N/A ✓ pH≤2 pH>2	
	Soil or Sediment	N/A Samples not received in Methanol	ml Methanol/g soil 1:1 +/-25% ✓ Other
		✓ Samples received in Methanol: ✓ covering soil/sediment not covering soil/sediment	
		Samples received in air-tight container	
Temperature	✓ Received on ice Received at 4 ± 2 °C ✓ Other: 1.8°C		

Were all QA/QC procedures followed as required by the VPH method? *Yes*

Were any significant modifications made to the VPH method as specified in section 11.3? *No*

Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

The following outlines the condition of all EPH samples contained within this report upon laboratory receipt.

Matrices	Ground Water Soil		
Containers	✓ Satisfactory		
Aqueous Preservative	N/A	✓ pH≤2	pH>2 pH adjusted to <2 in lab
Temperature	✓ Received on ice	Received at 4 ± 2 °C	✓ Other: 1.8°C

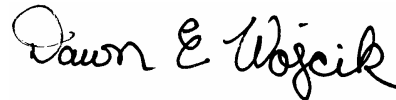
Were all QA/QC procedures followed as required by the EPH method? *Yes*

Were any significant modifications made to the EPH method as specified in Section 11.3? *No*

Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

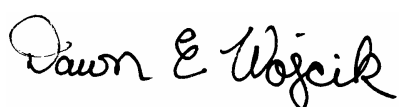
I attest that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Authorized by:



Dawn E. Wojcik
Laboratory Director

MassDEP Analytical Protocol Certification Form

Laboratory Name: Eurofins Spectrum Analytical, Inc.			Project #: 60552044		
Project Location: LMC-Wilmington- 50 Fordham Rd. - MA			RTN:		
This form provides certifications for the following data set:			SC45495-01 through SC45495-03		
Matrices: Aqueous Ground Water Soil					
CAM Protocol					
✓ 8260 VOC CAM II A	7470/7471 Hg CAM III B	✓ MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	✓ MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
✓ 6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	✓ 9012 Total Cyanide/PAC CAM VI A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B
<i>Affirmative responses to questions A through F are required for Presumptive Certainty's status</i>					
A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?				✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				✓ Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?				✓ Yes No
<i>Responses to questions G, H and I below are required for Presumptive Certainty's status</i>					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				Yes ✓ No
Data User Note: Data that achieve Presumptive Certainty's status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?				Yes ✓ No
<i>All negative responses are addressed in a case narrative on the cover page of this report.</i>					
<i>I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.</i>					
 Dawn E. Wojcik Laboratory Director Date: 4/16/2018					

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.8 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Soils are run on a manual load instrument. 100ug of sample (MEOH) is spiked into 5ml DI water along with the surrogate and added directly onto the instrument. Additional dilution factors may be required to keep analyte concentration within instrument calibration range.

Method SW846 5035A is designed to use on samples containing low levels of VOCs, ranging from 0.5 to 200 ug/Kg. Target analytes that are less responsive to purge and trap may be present at concentrations over 200ug/Kg but may not be reportable in the methanol preserved vial (SW846 5030). This is the result of the inherent dilution factor required for the methanol preservation.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

MADEP EPH 5/2004 R

Calibration:

1803036

Analyte quantified by quadratic equation type calibration.

C19-C36 Aliphatic Hydrocarbons

C9-C18 Aliphatic Hydrocarbons

This affected the following samples:

1805015-BS3

S818562-CCV1

S818562-CCV2

S818422-CCV3

Closing CCV are aloud to Fail up to four analytes.

Benzo (g,h,i) perylene

Laboratory Control Samples:

1805015 BSD

This laboratory report is not valid without an authorized signature on the cover page.

MADEP EPH 5/2004 R

Laboratory Control Samples:

1805015 BSD

Unadjusted C11-C22 Aromatic Hydrocarbons RPD 36% (25%) is outside individual acceptance criteria.

Samples:

S818422-CCV3

Analyte percent difference is outside individual acceptance criteria (25), but within overall method allowances.

Benzo (g,h,i) perylene (44.9%)

This affected the following samples:

1804705-BLK1

1804705-BS1

1804705-BS2

1804705-BSD1

SP13_040518-1

MADEP VPH 5/2004 Rev. 1.1

Spikes:

1804719-MS1 *Source: SC45495-01*

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Benzene

C5-C8 Aliphatic Hydrocarbons

Unadjusted C5-C8 Aliphatic Hydrocarbons

Samples:

SC45495-01 *SP13_040518-1*

The VOC preserved soil sample is not within the 1:1 weight to volume ratio as recommended by SW846 method 5035A but may be within the 1:1 volume to volume ratio. This variance may affect the final reporting limit.

SW846 6010C

Laboratory Control Samples:

1804792 SRM/SRMD

Lead percent recoveries (87/78) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

SP13_040518-1

Duplicates:

1804797-DUP1 *Source: SC45495-02*

Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.

Arsenic

SW846 8260C

Calibration:

1802088

SW846 8260C

Calibration:

1802088

Analyte quantified by quadratic equation type calibration.

Bromoform
Carbon tetrachloride

This affected the following samples:

1804715-BLK1
1804715-BS1
1804715-BSD1
FRAC1_040518-1
S817144-ICV1
S818315-CCV1
Trip Blank

1804018

Analyte quantified by quadratic equation type calibration.

1,2-Dibromo-3-chloropropane
1,4-Dioxane
2-Hexanone (MBK)
4-Methyl-2-pentanone (MIBK)
Naphthalene
Tetrahydrofuran

This affected the following samples:

1804714-BLK1
1804714-BS1
1804714-BSD1
S818269-ICV1
S818312-CCV1
SP13_040518-1

Laboratory Control Samples:

1804715 BS/BSD

Bromomethane percent recoveries (143/139) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

FRAC1_040518-1
Trip Blank

Chloroethane percent recoveries (158/136) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

FRAC1_040518-1
Trip Blank

Chloromethane percent recoveries (72/69) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

FRAC1_040518-1
Trip Blank

Trichlorofluoromethane (Freon 11) percent recoveries (138/127) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

FRAC1_040518-1
Trip Blank

SW846 8260C

Samples:

S818312-CCV1

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

2-Hexanone (MBK) (-21.5%)

This affected the following samples:

1804714-BLK1

1804714-BS1

1804714-BSD1

SP13_040518-1

S818315-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,1,1,2-Tetrachloroethane (21.0%)

2-Hexanone (MBK) (-26.5%)

Bromomethane (31.7%)

Di-isopropyl ether (-28.9%)

Tetrahydrofuran (-29.4%)

Trichlorofluoromethane (Freon 11) (42.5%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

1,4-Dioxane (-24.7%)

Chloroethane (40.8%)

Chloromethane (-34.5%)

This affected the following samples:

1804715-BLK1

1804715-BS1

1804715-BSD1

FRAC1_040518-1

Trip Blank

Sample Acceptance Check Form

Client: AECOM Environment - Chelmsford, MA
Project: LMC-Wilmington- 50 Fordham Rd. - MA / 60552044
Work Order: SC45495
Sample(s) received on: 4/6/2018

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals present?	☐	☒	☐
Were custody seals intact?	☐	☐	☒
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	☒	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☒	☐	☐
Were sample containers received intact?	☒	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☒	☐	☐
Were samples accompanied by a Chain of Custody document?	☒	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☒	☐	☐
Did sample container labels agree with Chain of Custody document?	☒	☐	☐
Were samples received within method-specific holding times?	☒	☐	☐

Summary of Hits

Lab ID: SC45495-01

Client ID: SP13_040518-1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Benzo (a) anthracene	0.597		0.387	mg/kg	MADEP EPH 5/2004 R
Benzo (a) pyrene	0.843		0.387	mg/kg	MADEP EPH 5/2004 R
Benzo (b) fluoranthene	1.01		0.387	mg/kg	MADEP EPH 5/2004 R
Benzo (g,h,i) perylene	0.799		0.387	mg/kg	MADEP EPH 5/2004 R
Benzo (k) fluoranthene	0.623		0.387	mg/kg	MADEP EPH 5/2004 R
C11-C22 Aromatic Hydrocarbons	13.7		11.6	mg/kg	MADEP EPH 5/2004 R
Chrysene	1.16		0.387	mg/kg	MADEP EPH 5/2004 R
Fluoranthene	2.58		0.387	mg/kg	MADEP EPH 5/2004 R
Indeno (1,2,3-cd) pyrene	0.737		0.387	mg/kg	MADEP EPH 5/2004 R
Phenanthrene	1.85		0.387	mg/kg	MADEP EPH 5/2004 R
Pyrene	1.78		0.387	mg/kg	MADEP EPH 5/2004 R
Unadjusted C11-C22 Aromatic Hydrocarbons	25.9		11.6	mg/kg	MADEP EPH 5/2004 R
Arsenic	10.3		1.74	mg/kg	SW846 6010C
Chromium	9.72		1.16	mg/kg	SW846 6010C
Copper	7.78		1.16	mg/kg	SW846 6010C
Lead	12.8		1.74	mg/kg	SW846 6010C
Zinc	22.0		1.16	mg/kg	SW846 6010C

Lab ID: SC45495-02

Client ID: FRAC1_040518-1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Arsenic	0.00830		0.00400	mg/l	SW846 6010C
Arsenic (dissolved)	0.0046		0.0040	mg/l	SW846 6010C
Zinc	0.0182		0.0050	mg/l	SW846 6010C
Zinc (dissolved)	0.0128		0.0050	mg/l	SW846 6010C
2-Butanone (MEK)	28.7		2.00	µg/l	SW846 8260C
Acetone	14.5		10.0	µg/l	SW846 8260C
Tetrahydrofuran	62.2		2.00	µg/l	SW846 8260C

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification

SP13_040518-1

SC45495-01

Client Project #

60552044

Matrix

Soil

Collection Date/Time

05-Apr-18 11:00

Received

06-Apr-18

<u>CAS No.</u>	<u>Analyte(s)</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>*RDL</u>	<u>MDL</u>	<u>Dilution</u>	<u>Method Ref.</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>	<u>Batch</u>	<u>Cert.</u>
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Volatile Organic CompoundsPrepared by method Volatiles

VOC Extraction

Field
extracted

N/A

1

VOC Soil
Extraction

VO

1804688

Volatile Organic Compounds by SW846 8260Prepared by method SW846 5035A Soil (low level)

Initial weight: 8.42 g

76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 4.32		µg/kg dry	4.32	2.19	1	SW846 8260C	09-Apr-18	10-Apr-18	GMA	1804714	
67-64-1	Acetone	< 43.2		µg/kg dry	43.2	17.3	1	"	"	"	"	"	
71-43-2	Benzene	< 4.32		µg/kg dry	4.32	1.14	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 4.32		µg/kg dry	4.32	1.15	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 4.32		µg/kg dry	4.32	2.18	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 4.32		µg/kg dry	4.32	2.88	1	"	"	"	"	"	
75-25-2	Bromoform	< 4.32		µg/kg dry	4.32	4.12	1	"	"	"	"	"	
74-83-9	Bromomethane	< 8.63		µg/kg dry	8.63	3.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 8.63		µg/kg dry	8.63	7.72	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 4.32		µg/kg dry	4.32	1.23	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 4.32		µg/kg dry	4.32	0.79	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 4.32		µg/kg dry	4.32	0.97	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 8.63		µg/kg dry	8.63	2.76	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 4.32		µg/kg dry	4.32	3.53	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 4.32		µg/kg dry	4.32	1.35	1	"	"	"	"	"	
75-00-3	Chloroethane	< 8.63		µg/kg dry	8.63	2.40	1	"	"	"	"	"	
67-66-3	Chloroform	< 4.32		µg/kg dry	4.32	2.32	1	"	"	"	"	"	
74-87-3	Chloromethane	< 8.63		µg/kg dry	8.63	1.78	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 4.32		µg/kg dry	4.32	1.07	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 4.32		µg/kg dry	4.32	1.01	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 8.63		µg/kg dry	8.63	6.24	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 4.32		µg/kg dry	4.32	2.93	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 4.32		µg/kg dry	4.32	2.90	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 4.32		µg/kg dry	4.32	2.24	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 4.32		µg/kg dry	4.32	1.12	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 4.32		µg/kg dry	4.32	0.94	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 4.32		µg/kg dry	4.32	1.28	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 8.63		µg/kg dry	8.63	1.64	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 4.32		µg/kg dry	4.32	1.13	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 4.32		µg/kg dry	4.32	1.55	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 4.32		µg/kg dry	4.32	2.26	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 4.32		µg/kg dry	4.32	1.60	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 4.32		µg/kg dry	4.32	2.29	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 4.32		µg/kg dry	4.32	2.26	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 4.32		µg/kg dry	4.32	2.24	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 4.32		µg/kg dry	4.32	2.04	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 4.32		µg/kg dry	4.32	1.39	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 4.32		µg/kg dry	4.32	2.60	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 4.32		µg/kg dry	4.32	2.27	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 4.32		µg/kg dry	4.32	0.62	1	"	"	"	"	"	

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

SP13_040518-1

SC45495-01

Client Project #

60552044

Matrix

Soil

Collection Date/Time

05-Apr-18 11:00

Received

06-Apr-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Volatile Organic CompoundsVolatile Organic Compounds by SW846 8260Initial weight: 8.42 g

87-68-3	Hexachlorobutadiene	< 4.32		µg/kg dry	4.32	2.17	1	SW846 8260C	09-Apr-18	10-Apr-18	GMA	1804714	
591-78-6	2-Hexanone (MBK)	< 8.63		µg/kg dry	8.63	5.30	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	< 4.32		µg/kg dry	4.32	0.85	1	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 4.32		µg/kg dry	4.32	0.93	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 4.32		µg/kg dry	4.32	1.59	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 8.63		µg/kg dry	8.63	2.22	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 8.63		µg/kg dry	8.63	1.71	1	"	"	"	"	"	
91-20-3	Naphthalene	< 4.32		µg/kg dry	4.32	2.57	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 4.32		µg/kg dry	4.32	0.70	1	"	"	"	"	"	
100-42-5	Styrene	< 4.32		µg/kg dry	4.32	0.87	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 4.32		µg/kg dry	4.32	3.67	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 4.32		µg/kg dry	4.32	3.65	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 4.32		µg/kg dry	4.32	1.48	1	"	"	"	"	"	
108-88-3	Toluene	< 4.32		µg/kg dry	4.32	1.40	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 4.32		µg/kg dry	4.32	1.52	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 4.32		µg/kg dry	4.32	3.18	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 4.32		µg/kg dry	4.32	1.43	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 4.32		µg/kg dry	4.32	3.13	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 4.32		µg/kg dry	4.32	1.18	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 4.32		µg/kg dry	4.32	2.33	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 4.32		µg/kg dry	4.32	3.24	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 4.32		µg/kg dry	4.32	1.05	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 4.32		µg/kg dry	4.32	0.74	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 4.32		µg/kg dry	4.32	1.46	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 8.63		µg/kg dry	8.63	0.78	1	"	"	"	"	"	
95-47-6	o-Xylene	< 4.32		µg/kg dry	4.32	1.21	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 8.63		µg/kg dry	8.63	6.80	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 4.32		µg/kg dry	4.32	3.91	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 4.32		µg/kg dry	4.32	1.44	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 4.32		µg/kg dry	4.32	2.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 4.32		µg/kg dry	4.32	0.80	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 86.3		µg/kg dry	86.3	75.0	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	92			70-130 %			"	"	"	"	"	
2037-26-5	Toluene-d8	102			70-130 %			"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	120			70-130 %			"	"	"	"	"	
1868-53-7	Dibromofluoromethane	108			70-130 %			"	"	"	"	"	

MADEP VPH

VC10

Prepared by method VPH - EPA 5035A SoilInitial weight: 23.08 g

C5-C8 Aliphatic Hydrocarbons	< 0.697	D	mg/kg dry	0.697	0.135	50	MADEP VPH 5/2004 Rev. 1.1	09-Apr-18	09-Apr-18	MP	1804719	
C9-C12 Aliphatic Hydrocarbons	< 0.232	D	mg/kg dry	0.232	0.0966	50	"	"	"	"	"	

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

SP13_040518-1

SC45495-01

Client Project

60552044

Matrix

Soil

Collection Date/Time

05-Apr-18 11:00

Received

06-Apr-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
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Volatile Organic Compounds

MADEP VPH

VC10

Initial weight: 23.08 g

	C9-C10 Aromatic Hydrocarbons	< 0.232	D	mg/kg dry	0.232	0.0282	50	MADEP VPH 5/2004 Rev. 1.1	09-Apr-18	09-Apr-18	MP	1804719	
	Unadjusted C5-C8 Aliphatic Hydrocarbons	< 0.697	D	mg/kg dry	0.697	0.108	50	"	"	"	"	"	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	< 0.232	D	mg/kg dry	0.232	0.123	50	"	"	"	"	"	
71-43-2	Benzene	< 0.0464	D	mg/kg dry	0.0464	0.0131	50	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.0464	D	mg/kg dry	0.0464	0.0165	50	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 0.0464	D	mg/kg dry	0.0464	0.0227	50	"	"	"	"	"	
91-20-3	Naphthalene	< 0.0464	D	mg/kg dry	0.0464	0.0223	50	"	"	"	"	"	
108-88-3	Toluene	< 0.0464	D	mg/kg dry	0.0464	0.0165	50	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 0.0929	D	mg/kg dry	0.0929	0.0365	50	"	"	"	"	"	
95-47-6	o-Xylene	< 0.0464	D	mg/kg dry	0.0464	0.0152	50	"	"	"	"	"	

Surrogate recoveries:

615-59-8	2,5-Dibromotoluene (FID)	110			70-130 %			"	"	"	"	"	
615-59-8	2,5-Dibromotoluene (PID)	121			70-130 %			"	"	"	"	"	

Extractable Petroleum Hydrocarbons

MADEP EPH

Prepared by method SW846 3546

	C9-C18 Aliphatic Hydrocarbons	< 11.6		mg/kg dry	11.6	2.38	1	MADEP EPH 5/2004 R	09-Apr-18	12-Apr-18	EDT	1804705	
	C19-C36 Aliphatic Hydrocarbons	< 11.6		mg/kg dry	11.6	3.14	1	"	"	"	"	"	
	C11-C22 Aromatic Hydrocarbons	13.7		mg/kg dry	11.6	4.89	1	"	"	"	"	"	
	Unadjusted C11-C22 Aromatic Hydrocarbons	25.9		mg/kg dry	11.6	4.89	1	"	"	"	"	"	
91-20-3	Naphthalene	< 0.387		mg/kg dry	0.387	0.143	1	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 0.387		mg/kg dry	0.387	0.130	1	"	"	"	"	"	
208-96-8	Acenaphthylene	< 0.387		mg/kg dry	0.387	0.146	1	"	"	"	"	"	
83-32-9	Acenaphthene	< 0.387		mg/kg dry	0.387	0.148	1	"	"	"	"	"	
86-73-7	Fluorene	< 0.387		mg/kg dry	0.387	0.146	1	"	"	"	"	"	
85-01-8	Phenanthrene	1.85		mg/kg dry	0.387	0.141	1	"	"	"	"	"	
120-12-7	Anthracene	< 0.387		mg/kg dry	0.387	0.142	1	"	"	"	"	"	
206-44-0	Fluoranthene	2.58		mg/kg dry	0.387	0.146	1	"	"	"	"	"	
129-00-0	Pyrene	1.78		mg/kg dry	0.387	0.149	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	0.597		mg/kg dry	0.387	0.166	1	"	"	"	"	"	
218-01-9	Chrysene	1.16		mg/kg dry	0.387	0.158	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	1.01		mg/kg dry	0.387	0.200	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	0.623		mg/kg dry	0.387	0.205	1	"	"	"	"	"	
50-32-8	Benzo (a) pyrene	0.843		mg/kg dry	0.387	0.206	1	"	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	0.737		mg/kg dry	0.387	0.250	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	< 0.387		mg/kg dry	0.387	0.249	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	0.799		mg/kg dry	0.387	0.242	1	"	"	"	"	"	

Surrogate recoveries:

3386-33-2	1-Chlorooctadecane	58			40-140 %			"	"	"	"	"	
84-15-1	Ortho-Terphenyl	88			40-140 %			"	"	"	"	"	

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Sample Identification

SP13_040518-1

SC45495-01

Client Project #

60552044

Matrix

Soil

Collection Date/Time

05-Apr-18 11:00

Received

06-Apr-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Extractable Petroleum HydrocarbonsMADEP EPH

321-60-8	2-Fluorobiphenyl	65			40-140 %			MADEP EPH 5/2004 R	09-Apr-18	12-Apr-18	EDT	1804705	
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Total Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3050B

7440-38-2	Arsenic	10.3		mg/kg dry	1.74	0.220	1	SW846 6010C	11-Apr-18	12-Apr-18	SJR/TBC	1804792	
7440-47-3	Chromium	9.72		mg/kg dry	1.16	0.154	1	"	"	"	"	"	
7440-50-8	Copper	7.78		mg/kg dry	1.16	0.278	1	"	"	"	"	"	
7439-92-1	Lead	12.8		mg/kg dry	1.74	0.246	1	"	"	13-Apr-18	"	"	
7440-66-6	Zinc	22.0		mg/kg dry	1.16	0.898	1	"	"	12-Apr-18	"	"	

General Chemistry Parameters

% Solids	85.5		%				1	SM2540 G (11) Mod.	06-Apr-18	06-Apr-18	VO	1804682	
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Prepared by method SW846 9010B

57-12-5	Cyanide (total)	< 0.330		mg/kg dry	0.330	0.279	1	SW846 9012B	11-Apr-18	11-Apr-18	RLT	1804881	
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Sample Identification

FRAC1_040518-1

SC45495-02

Client Project #

60552044

Matrix

Ground Water

Collection Date/Time

05-Apr-18 12:00

Received

06-Apr-18

<u>CAS No.</u>	<u>Analyte(s)</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>*RDL</u>	<u>MDL</u>	<u>Dilution</u>	<u>Method Ref.</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>	<u>Batch</u>	<u>Cert.</u>
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
Prepared by method SW846 5030 Water MS													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	09-Apr-18	09-Apr-18	GMA	1804715	
67-64-1	Acetone	14.5		µg/l	10.0	0.80	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	28.7		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	

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Sample Identification

FRAC1_040518-1

SC45495-02

Client Project #

60552044

Matrix

Ground Water

Collection Date/Time

05-Apr-18 12:00

Received

06-Apr-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Volatile Organic CompoundsVolatile Organic Compounds by SW846 8260

99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	SW846 8260C	09-Apr-18	09-Apr-18	GMA	1804715	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	62.2		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	94			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	102			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	115			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	109			70-130 %		"	"	"	"	"	"	

MADEP VPHPrepared by method VPH - EPA 5030C Water

C5-C8 Aliphatic Hydrocarbons	< 75.0		µg/l	75.0	2.35	1	MADEP VPH 5/2004 Rev. 1.1	09-Apr-18	09-Apr-18	MP	1804723	
C9-C12 Aliphatic Hydrocarbons	< 25.0		µg/l	25.0	0.819	1	"	"	"	"	"	
C9-C10 Aromatic Hydrocarbons	< 25.0		µg/l	25.0	0.394	1	"	"	"	"	"	
Unadjusted C5-C8 Aliphatic Hydrocarbons	< 75.0		µg/l	75.0	1.64	1	"	"	"	"	"	
Unadjusted C9-C12 Aliphatic Hydrocarbons	< 25.0		µg/l	25.0	1.11	1	"	"	"	"	"	

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Sample Identification

FRAC1_040518-1

SC45495-02

Client Project #

60552044

Matrix

Ground Water

Collection Date/Time

05-Apr-18 12:00

Received

06-Apr-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Volatile Organic CompoundsMADEP VPH

71-43-2	Benzene	< 1.00		µg/l	1.00	0.453	1	MADEP VPH 5/2004 Rev. 1.1	09-Apr-18	09-Apr-18	MP	1804723	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.420	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.297	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.491	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.373	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.819	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.416	1	"	"	"	"	"	

Surrogate recoveries:

615-59-8	2,5-Dibromotoluene (FID)	99			70-130 %			"	"	"	"	"	
615-59-8	2,5-Dibromotoluene (PID)	100			70-130 %			"	"	"	"	"	

Extractable Petroleum HydrocarbonsMADEP EPHPrepared by method SW846 3510C

	C9-C18 Aliphatic Hydrocarbons	< 100		µg/l	100	14.9	1	MADEP EPH 5/2004 R	13-Apr-18	16-Apr-18	EDT	1805015	
	C19-C36 Aliphatic Hydrocarbons	< 100		µg/l	100	20.3	1	"	"	"	"	"	
	C11-C22 Aromatic Hydrocarbons	< 100		µg/l	100	74.0	1	"	"	"	"	"	
	Unadjusted C11-C22 Aromatic Hydrocarbons	< 100		µg/l	100	74.0	1	"	"	"	"	"	
91-20-3	Naphthalene	< 5.00		µg/l	5.00	1.44	1	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 5.00		µg/l	5.00	1.24	1	"	"	"	"	"	
208-96-8	Acenaphthylene	< 5.00		µg/l	5.00	1.32	1	"	"	"	"	"	
83-32-9	Acenaphthene	< 5.00		µg/l	5.00	1.66	1	"	"	"	"	"	
86-73-7	Fluorene	< 5.00		µg/l	5.00	1.28	1	"	"	"	"	"	
85-01-8	Phenanthrene	< 5.00		µg/l	5.00	1.58	1	"	"	"	"	"	
120-12-7	Anthracene	< 5.00		µg/l	5.00	1.27	1	"	"	"	"	"	
206-44-0	Fluoranthene	< 5.00		µg/l	5.00	1.43	1	"	"	"	"	"	
129-00-0	Pyrene	< 5.00		µg/l	5.00	1.57	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	< 5.00		µg/l	5.00	1.44	1	"	"	"	"	"	
218-01-9	Chrysene	< 5.00		µg/l	5.00	1.44	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	< 5.00		µg/l	5.00	1.58	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	< 5.00		µg/l	5.00	1.42	1	"	"	"	"	"	
50-32-8	Benzo (a) pyrene	< 5.00		µg/l	5.00	1.32	1	"	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	< 5.00		µg/l	5.00	1.34	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	< 5.00		µg/l	5.00	1.43	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	< 5.00		µg/l	5.00	1.25	1	"	"	"	"	"	

Surrogate recoveries:

3386-33-2	1-Chlorooctadecane	41			40-140 %			"	"	"	"	"	
84-15-1	Ortho-Terphenyl	40			40-140 %			"	"	"	"	"	
321-60-8	2-Fluorobiphenyl	51			40-140 %			"	"	"	"	"	

Total Metals by EPA 200/6000 Series MethodsPrepared by method General Prep-Metal

Sample Identification

FRAC1_040518-1

SC45495-02

Client Project #

60552044

Matrix

Ground Water

Collection Date/Time

05-Apr-18 12:00

Received

06-Apr-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Total Metals by EPA 200/6000 Series MethodsPrepared by method General Prep-Metal

	Preservation	Field Preserved; pH<2 confirmed		N/A			1	EPA 200/6000 methods	09-Apr-18		KT	1804732	
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Total Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3005A

7440-38-2	Arsenic	0.00830		mg/l	0.00400	0.00138	1	SW846 6010C	11-Apr-18	13-Apr-18	TBC	1804794	
7440-47-3	Chromium	< 0.0050		mg/l	0.0050	0.0009	1	"	"	12-Apr-18	"	"	
7440-50-8	Copper	< 0.0050		mg/l	0.0050	0.0023	1	"	"	13-Apr-18	"	"	
7439-92-1	Lead	< 0.0075		mg/l	0.0075	0.0062	1	"	"	"	"	"	
7440-66-6	Zinc	0.0182		mg/l	0.0050	0.0016	1	"	"	12-Apr-18	"	"	

Soluble Metals by EPA 200/6000 Series MethodsPrepared by method General Prep-Metal

	Filtration	Field Filtered		N/A			1	EPA 200.7/3005A/601 0			KT	1804729	
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Soluble Metals by EPA 6000/7000 Series MethodsPrepared by method SW846 3005A

7440-38-2	Arsenic	0.0046		mg/l	0.0040	0.0014	1	SW846 6010C	11-Apr-18	13-Apr-18	TBC	1804797	
7440-47-3	Chromium	< 0.0050		mg/l	0.0050	0.0009	1	"	"	"	"	"	
7440-50-8	Copper	< 0.0050		mg/l	0.0050	0.0023	1	"	"	"	"	"	
7439-92-1	Lead	< 0.0075		mg/l	0.0075	0.0062	1	"	"	"	"	"	
7440-66-6	Zinc	0.0128		mg/l	0.0050	0.0016	1	"	"	"	"	"	

General Chemistry Parameters

57-12-5	Cyanide (total)	< 0.00500		mg/l	0.00500	0.00474	1	EPA 335.4 / SW846 9012B	10-Apr-18	10-Apr-18	RLT	1804836	X
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Sample Identification

Trip Blank
SC45495-03

Client Project #
60552044

Matrix
Aqueous

Collection Date/Time
05-Apr-18 00:00

Received
06-Apr-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
Volatile Organic Compounds													
<u>Volatile Organic Compounds by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.53	1	SW846 8260C	09-Apr-18	09-Apr-18	GMA	1804715	
67-64-1	Acetone	< 10.0		µg/l	10.0	0.80	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.42	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.00		µg/l	2.00	0.90	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 2.00		µg/l	2.00	1.07	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.41	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.41	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.44	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.00		µg/l	2.00	0.59	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.00		µg/l	2.00	0.37	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.86	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.20	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.31	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.27	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.58	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.32	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.21	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.42	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.47	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 2.00		µg/l	2.00	0.53	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

Trip Blank

SC45495-03

Client Project #

60552044

Matrix

Aqueous

Collection Date/Time

05-Apr-18 00:00

Received

06-Apr-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Volatile Organic CompoundsVolatile Organic Compounds by SW846 8260

99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.28	1	SW846 8260C	09-Apr-18	09-Apr-18	GMA	1804715	
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.24	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00	0.52	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.66	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.35	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		µg/l	1.00	0.34	1	"	"	"	"	"	
100-42-5	Styrene	< 1.00		µg/l	1.00	0.40	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.57	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		µg/l	1.00	0.30	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.51	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.50	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.43	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.47	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.00		µg/l	1.00	0.28	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.06	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.37	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.33	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.29	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	11.4	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	94			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	103			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	115			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	105			70-130 %		"	"	"	"	"	"	

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>MADEP VPH 5/2004 Rev. 1.1</u>										
Batch 1804719 - VPH - EPA 5035A Soil										
<u>Blank (1804719-BLK1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
C5-C8 Aliphatic Hydrocarbons	< 0.750	D	mg/kg wet	0.750						
C9-C12 Aliphatic Hydrocarbons	< 0.250	D	mg/kg wet	0.250						
C9-C10 Aromatic Hydrocarbons	< 0.250	D	mg/kg wet	0.250						
Unadjusted C5-C8 Aliphatic Hydrocarbons	< 0.750	D	mg/kg wet	0.750						
Unadjusted C9-C12 Aliphatic Hydrocarbons	< 0.250	D	mg/kg wet	0.250						
Benzene	< 0.0500	D	mg/kg wet	0.0500						
Ethylbenzene	< 0.0500	D	mg/kg wet	0.0500						
Methyl tert-butyl ether	< 0.0500	D	mg/kg wet	0.0500						
Naphthalene	< 0.0500	D	mg/kg wet	0.0500						
Toluene	< 0.0500	D	mg/kg wet	0.0500						
m,p-Xylene	< 0.100	D	mg/kg wet	0.100						
o-Xylene	< 0.0500	D	mg/kg wet	0.0500						
<i>Surrogate: 2,5-Dibromotoluene (FID)</i>	51.6		µg/kg		50.0		103	70-130		
<i>Surrogate: 2,5-Dibromotoluene (PID)</i>	52.7		µg/kg		50.0		105	70-130		
<u>LCS (1804719-BS1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
C5-C8 Aliphatic Hydrocarbons	62.9	D	µg/kg		60.0		105	70-130		
C9-C12 Aliphatic Hydrocarbons	66.1	D	µg/kg		60.0		110	70-130		
C9-C10 Aromatic Hydrocarbons	20.6	D	µg/kg		20.0		103	70-130		
Unadjusted C5-C8 Aliphatic Hydrocarbons	208	D	µg/kg		200		104	70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	86.6	D	µg/kg		80.0		108	70-130		
Benzene	21.1	D	µg/kg		20.0		105	70-130		
Ethylbenzene	20.7	D	µg/kg		20.0		103	70-130		
Methyl tert-butyl ether	20.4	D	µg/kg		20.0		102	70-130		
Naphthalene	21.0	D	µg/kg		20.0		105	70-130		
Toluene	20.7	D	µg/kg		20.0		103	70-130		
m,p-Xylene	41.8	D	µg/kg		40.0		105	70-130		
o-Xylene	20.6	D	µg/kg		20.0		103	70-130		
<i>Surrogate: 2,5-Dibromotoluene (FID)</i>	50.9		µg/kg		50.0		102	70-130		
<i>Surrogate: 2,5-Dibromotoluene (PID)</i>	53.6		µg/kg		50.0		107	70-130		
<u>LCS Dup (1804719-BSD1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
C5-C8 Aliphatic Hydrocarbons	54.7	D	µg/kg		60.0		91	70-130	14	25
C9-C12 Aliphatic Hydrocarbons	66.9	D	µg/kg		60.0		112	70-130	1	25
C9-C10 Aromatic Hydrocarbons	22.0	D	µg/kg		20.0		110	70-130	7	25
Unadjusted C5-C8 Aliphatic Hydrocarbons	220	D	µg/kg		200		110	70-130	6	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	88.9	D	µg/kg		80.0		111	70-130	3	25
Benzene	25.5	D	µg/kg		20.0		128	70-130	19	25
Ethylbenzene	22.6	D	µg/kg		20.0		113	70-130	9	25
Methyl tert-butyl ether	25.9	D	µg/kg		20.0		129	70-130	24	25
Naphthalene	20.8	D	µg/kg		20.0		104	70-130	1	25
Toluene	23.5	D	µg/kg		20.0		117	70-130	13	25
m,p-Xylene	45.3	D	µg/kg		40.0		113	70-130	8	25
o-Xylene	23.0	D	µg/kg		20.0		115	70-130	11	25
<i>Surrogate: 2,5-Dibromotoluene (FID)</i>	49.0		µg/kg		50.0		98	70-130		
<i>Surrogate: 2,5-Dibromotoluene (PID)</i>	51.6		µg/kg		50.0		103	70-130		
<u>Duplicate (1804719-DUP1)</u>					<u>Source: SC45495-01</u> <u>Prepared & Analyzed: 09-Apr-18</u>					
C5-C8 Aliphatic Hydrocarbons	0.359	J,D	mg/kg dry	0.697		0.294			20	50
C9-C12 Aliphatic Hydrocarbons	< 0.232	D	mg/kg dry	0.232		BRL				50

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>MADEP VPH 5/2004 Rev. 1.1</u>										
Batch 1804719 - VPH - EPA 5035A Soil										
<u>Duplicate (1804719-DUP1)</u>			<u>Source: SC45495-01</u>			<u>Prepared & Analyzed: 09-Apr-18</u>				
C9-C10 Aromatic Hydrocarbons	0.176	J,D	mg/kg dry	0.232		0.177			0.6	50
Unadjusted C5-C8 Aliphatic Hydrocarbons	0.379	J,D	mg/kg dry	0.697		0.316			18	50
Unadjusted C9-C12 Aliphatic Hydrocarbons	0.202	J,D	mg/kg dry	0.232		0.208			3	50
Benzene	< 0.0464	D	mg/kg dry	0.0464		BRL				50
Ethylbenzene	< 0.0464	D	mg/kg dry	0.0464		BRL				50
Methyl tert-butyl ether	< 0.0464	D	mg/kg dry	0.0464		BRL				50
Naphthalene	< 0.0464	D	mg/kg dry	0.0464		BRL				50
Toluene	< 0.0464	D	mg/kg dry	0.0464		BRL				50
m,p-Xylene	< 0.0929	D	mg/kg dry	0.0929		BRL				50
o-Xylene	< 0.0464	D	mg/kg dry	0.0464		BRL				50
Surrogate: 2,5-Dibromotoluene (FID)	2.14		mg/kg dry		1.90		113	70-130		
Surrogate: 2,5-Dibromotoluene (PID)	2.30		mg/kg dry		1.90		121	70-130		
<u>Matrix Spike (1804719-MS1)</u>			<u>Source: SC45495-01</u>			<u>Prepared & Analyzed: 09-Apr-18</u>				
C5-C8 Aliphatic Hydrocarbons	169	QM7, D	mg/kg dry	26.6	106	BRL	159	70-130		
C9-C12 Aliphatic Hydrocarbons	122	D	mg/kg dry	8.87	106	BRL	115	70-130		
C9-C10 Aromatic Hydrocarbons	42.1	D	mg/kg dry	8.87	35.3	BRL	119	70-130		
Unadjusted C5-C8 Aliphatic Hydrocarbons	470	QM7, D	mg/kg dry	26.6	353	BRL	133	70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	164	D	mg/kg dry	8.87	141	BRL	116	70-130		
Benzene	48.4	QM7, D	mg/kg dry	1.77	35.3	BRL	137	70-130		
Ethylbenzene	40.8	D	mg/kg dry	1.77	35.3	BRL	116	70-130		
Methyl tert-butyl ether	43.8	D	mg/kg dry	1.77	35.3	BRL	124	70-130		
Naphthalene	37.4	D	mg/kg dry	1.77	35.3	BRL	106	70-130		
Toluene	42.3	D	mg/kg dry	1.77	35.3	BRL	120	70-130		
m,p-Xylene	84.2	D	mg/kg dry	3.55	70.6	BRL	119	70-130		
o-Xylene	41.3	D	mg/kg dry	1.77	35.3	BRL	117	70-130		
Surrogate: 2,5-Dibromotoluene (FID)	84.9		mg/kg dry		88.3		96	70-130		
Surrogate: 2,5-Dibromotoluene (PID)	91.0		mg/kg dry		88.3		103	70-130		
Batch 1804723 - VPH - EPA 5030C Water										
<u>Blank (1804723-BLK1)</u>			<u>Prepared & Analyzed: 09-Apr-18</u>							
C9-C12 Aliphatic Hydrocarbons	< 25.0		µg/l	25.0						
C5-C8 Aliphatic Hydrocarbons	< 75.0		µg/l	75.0						
C9-C10 Aromatic Hydrocarbons	< 25.0		µg/l	25.0						
Unadjusted C5-C8 Aliphatic Hydrocarbons	< 75.0		µg/l	75.0						
Unadjusted C9-C12 Aliphatic Hydrocarbons	< 25.0		µg/l	25.0						
Benzene	< 1.00		µg/l	1.00						
Ethylbenzene	< 1.00		µg/l	1.00						
Methyl tert-butyl ether	< 1.00		µg/l	1.00						
Naphthalene	< 1.00		µg/l	1.00						
Toluene	< 1.00		µg/l	1.00						
m,p-Xylene	< 2.00		µg/l	2.00						
o-Xylene	< 1.00		µg/l	1.00						
Surrogate: 2,5-Dibromotoluene (FID)	57.2		µg/l		50.0		114	70-130		
Surrogate: 2,5-Dibromotoluene (PID)	57.1		µg/l		50.0		114	70-130		
<u>LCS (1804723-BS1)</u>			<u>Prepared & Analyzed: 09-Apr-18</u>							
C9-C12 Aliphatic Hydrocarbons	51.6		µg/l		60.0		86	70-130		
C5-C8 Aliphatic Hydrocarbons	56.4		µg/l		60.0		94	70-130		
C9-C10 Aromatic Hydrocarbons	19.7		µg/l		20.0		99	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>MADEP VPH 5/2004 Rev. 1.1</u>										
Batch 1804723 - VPH - EPA 5030C Water										
<u>LCS (1804723-BS1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
Unadjusted C5-C8 Aliphatic Hydrocarbons	184		µg/l		200		92	70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	71.3		µg/l		80.0		89	70-130		
Benzene	19.0		µg/l		20.0		95	70-130		
Ethylbenzene	17.0		µg/l		20.0		85	70-130		
Methyl tert-butyl ether	19.4		µg/l		20.0		97	70-130		
Naphthalene	15.0		µg/l		20.0		75	70-130		
Toluene	18.1		µg/l		20.0		91	70-130		
m,p-Xylene	35.7		µg/l		40.0		89	70-130		
o-Xylene	18.3		µg/l		20.0		91	70-130		
Surrogate: 2,5-Dibromotoluene (FID)	56.8		µg/l		50.0		114	70-130		
Surrogate: 2,5-Dibromotoluene (PID)	56.3		µg/l		50.0		113	70-130		
<u>LCS Dup (1804723-BSD1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
C9-C12 Aliphatic Hydrocarbons	52.0		µg/l		60.0		87	70-130	0.8	25
C5-C8 Aliphatic Hydrocarbons	60.8		µg/l		60.0		101	70-130	8	25
C9-C10 Aromatic Hydrocarbons	21.9		µg/l		20.0		109	70-130	10	25
Unadjusted C5-C8 Aliphatic Hydrocarbons	201		µg/l		200		100	70-130	9	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	73.9		µg/l		80.0		92	70-130	4	25
Benzene	20.5		µg/l		20.0		103	70-130	8	25
Ethylbenzene	19.2		µg/l		20.0		96	70-130	12	25
Methyl tert-butyl ether	19.9		µg/l		20.0		100	70-130	3	25
Naphthalene	18.4		µg/l		20.0		92	70-130	20	25
Toluene	20.3		µg/l		20.0		101	70-130	11	25
m,p-Xylene	39.8		µg/l		40.0		100	70-130	11	25
o-Xylene	20.0		µg/l		20.0		100	70-130	9	25
Surrogate: 2,5-Dibromotoluene (FID)	60.9		µg/l		50.0		122	70-130		
Surrogate: 2,5-Dibromotoluene (PID)	60.9		µg/l		50.0		122	70-130		
<u>SW846 8260C</u>										
Batch 1804714 - SW846 5035A Soil (low level)										
<u>Blank (1804714-BLK1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 5.00		µg/kg wet	5.00						
Acetone	< 50.0		µg/kg wet	50.0						
Benzene	< 5.00		µg/kg wet	5.00						
Bromobenzene	< 5.00		µg/kg wet	5.00						
Bromochloromethane	< 5.00		µg/kg wet	5.00						
Bromodichloromethane	< 5.00		µg/kg wet	5.00						
Bromoform	< 5.00		µg/kg wet	5.00						
Bromomethane	< 10.0		µg/kg wet	10.0						
2-Butanone (MEK)	< 10.0		µg/kg wet	10.0						
n-Butylbenzene	< 5.00		µg/kg wet	5.00						
sec-Butylbenzene	< 5.00		µg/kg wet	5.00						
tert-Butylbenzene	< 5.00		µg/kg wet	5.00						
Carbon disulfide	< 10.0		µg/kg wet	10.0						
Carbon tetrachloride	< 5.00		µg/kg wet	5.00						
Chlorobenzene	< 5.00		µg/kg wet	5.00						
Chloroethane	< 10.0		µg/kg wet	10.0						
Chloroform	< 5.00		µg/kg wet	5.00						
Chloromethane	< 10.0		µg/kg wet	10.0						
2-Chlorotoluene	< 5.00		µg/kg wet	5.00						

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW846 8260C</u>										
Batch 1804714 - SW846 5035A Soil (low level)										
<u>Blank (1804714-BLK1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
4-Chlorotoluene	< 5.00		µg/kg wet	5.00						
1,2-Dibromo-3-chloropropane	< 10.0		µg/kg wet	10.0						
Dibromochloromethane	< 5.00		µg/kg wet	5.00						
1,2-Dibromoethane (EDB)	< 5.00		µg/kg wet	5.00						
Dibromomethane	< 5.00		µg/kg wet	5.00						
1,2-Dichlorobenzene	< 5.00		µg/kg wet	5.00						
1,3-Dichlorobenzene	< 5.00		µg/kg wet	5.00						
1,4-Dichlorobenzene	< 5.00		µg/kg wet	5.00						
Dichlorodifluoromethane (Freon12)	< 10.0		µg/kg wet	10.0						
1,1-Dichloroethane	< 5.00		µg/kg wet	5.00						
1,2-Dichloroethane	< 5.00		µg/kg wet	5.00						
1,1-Dichloroethene	< 5.00		µg/kg wet	5.00						
cis-1,2-Dichloroethene	< 5.00		µg/kg wet	5.00						
trans-1,2-Dichloroethene	< 5.00		µg/kg wet	5.00						
1,2-Dichloropropane	< 5.00		µg/kg wet	5.00						
1,3-Dichloropropane	< 5.00		µg/kg wet	5.00						
2,2-Dichloropropane	< 5.00		µg/kg wet	5.00						
1,1-Dichloropropene	< 5.00		µg/kg wet	5.00						
cis-1,3-Dichloropropene	< 5.00		µg/kg wet	5.00						
trans-1,3-Dichloropropene	< 5.00		µg/kg wet	5.00						
Ethylbenzene	< 5.00		µg/kg wet	5.00						
Hexachlorobutadiene	< 5.00		µg/kg wet	5.00						
2-Hexanone (MBK)	< 10.0		µg/kg wet	10.0						
Isopropylbenzene	< 5.00		µg/kg wet	5.00						
4-Isopropyltoluene	< 5.00		µg/kg wet	5.00						
Methyl tert-butyl ether	< 5.00		µg/kg wet	5.00						
4-Methyl-2-pentanone (MIBK)	< 10.0		µg/kg wet	10.0						
Methylene chloride	< 10.0		µg/kg wet	10.0						
Naphthalene	< 5.00		µg/kg wet	5.00						
n-Propylbenzene	< 5.00		µg/kg wet	5.00						
Styrene	< 5.00		µg/kg wet	5.00						
1,1,1,2-Tetrachloroethane	< 5.00		µg/kg wet	5.00						
1,1,2,2-Tetrachloroethane	< 5.00		µg/kg wet	5.00						
Tetrachloroethene	< 5.00		µg/kg wet	5.00						
Toluene	< 5.00		µg/kg wet	5.00						
1,2,3-Trichlorobenzene	< 5.00		µg/kg wet	5.00						
1,2,4-Trichlorobenzene	< 5.00		µg/kg wet	5.00						
1,1,1-Trichloroethane	< 5.00		µg/kg wet	5.00						
1,1,2-Trichloroethane	< 5.00		µg/kg wet	5.00						
Trichloroethene	< 5.00		µg/kg wet	5.00						
Trichlorofluoromethane (Freon 11)	< 5.00		µg/kg wet	5.00						
1,2,3-Trichloropropane	< 5.00		µg/kg wet	5.00						
1,2,4-Trimethylbenzene	< 5.00		µg/kg wet	5.00						
1,3,5-Trimethylbenzene	< 5.00		µg/kg wet	5.00						
Vinyl chloride	< 5.00		µg/kg wet	5.00						
m,p-Xylene	< 10.0		µg/kg wet	10.0						
o-Xylene	< 5.00		µg/kg wet	5.00						
Tetrahydrofuran	< 10.0		µg/kg wet	10.0						
Ethyl ether	< 5.00		µg/kg wet	5.00						
Tert-amyl methyl ether	< 5.00		µg/kg wet	5.00						

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW846 8260C</u>										
Batch 1804714 - SW846 5035A Soil (low level)										
<u>Blank (1804714-BLK1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
Ethyl tert-butyl ether	< 5.00		µg/kg wet	5.00						
Di-isopropyl ether	< 5.00		µg/kg wet	5.00						
1,4-Dioxane	< 100		µg/kg wet	100						
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>47.2</i>		<i>µg/kg</i>		<i>50.0</i>		<i>94</i>	<i>70-130</i>		
<i>Surrogate: Toluene-d8</i>	<i>50.6</i>		<i>µg/kg</i>		<i>50.0</i>		<i>101</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>58.6</i>		<i>µg/kg</i>		<i>50.0</i>		<i>117</i>	<i>70-130</i>		
<i>Surrogate: Dibromofluoromethane</i>	<i>52.0</i>		<i>µg/kg</i>		<i>50.0</i>		<i>104</i>	<i>70-130</i>		
<u>LCS (1804714-BS1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	24.0		µg/kg		20.0		120	70-130		
Acetone	20.6		µg/kg		20.0		103	70-130		
Benzene	20.8		µg/kg		20.0		104	70-130		
Bromobenzene	20.2		µg/kg		20.0		101	70-130		
Bromochloromethane	20.6		µg/kg		20.0		103	70-130		
Bromodichloromethane	19.8		µg/kg		20.0		99	70-130		
Bromoform	17.8		µg/kg		20.0		89	70-130		
Bromomethane	21.9		µg/kg		20.0		110	70-130		
2-Butanone (MEK)	22.0		µg/kg		20.0		110	70-130		
n-Butylbenzene	23.7		µg/kg		20.0		118	70-130		
sec-Butylbenzene	22.9		µg/kg		20.0		115	70-130		
tert-Butylbenzene	22.0		µg/kg		20.0		110	70-130		
Carbon disulfide	22.9		µg/kg		20.0		114	70-130		
Carbon tetrachloride	22.4		µg/kg		20.0		112	70-130		
Chlorobenzene	19.8		µg/kg		20.0		99	70-130		
Chloroethane	20.3		µg/kg		20.0		102	70-130		
Chloroform	19.1		µg/kg		20.0		96	70-130		
Chloromethane	19.7		µg/kg		20.0		99	70-130		
2-Chlorotoluene	21.6		µg/kg		20.0		108	70-130		
4-Chlorotoluene	21.5		µg/kg		20.0		108	70-130		
1,2-Dibromo-3-chloropropane	18.1		µg/kg		20.0		91	70-130		
Dibromochloromethane	18.8		µg/kg		20.0		94	70-130		
1,2-Dibromoethane (EDB)	21.2		µg/kg		20.0		106	70-130		
Dibromomethane	19.9		µg/kg		20.0		100	70-130		
1,2-Dichlorobenzene	20.8		µg/kg		20.0		104	70-130		
1,3-Dichlorobenzene	21.2		µg/kg		20.0		106	70-130		
1,4-Dichlorobenzene	20.3		µg/kg		20.0		101	70-130		
Dichlorodifluoromethane (Freon12)	24.8		µg/kg		20.0		124	70-130		
1,1-Dichloroethane	20.1		µg/kg		20.0		101	70-130		
1,2-Dichloroethane	19.2		µg/kg		20.0		96	70-130		
1,1-Dichloroethene	24.3		µg/kg		20.0		121	70-130		
cis-1,2-Dichloroethene	21.2		µg/kg		20.0		106	70-130		
trans-1,2-Dichloroethene	21.6		µg/kg		20.0		108	70-130		
1,2-Dichloropropane	19.6		µg/kg		20.0		98	70-130		
1,3-Dichloropropane	19.5		µg/kg		20.0		98	70-130		
2,2-Dichloropropane	23.1		µg/kg		20.0		116	70-130		
1,1-Dichloropropene	22.5		µg/kg		20.0		113	70-130		
cis-1,3-Dichloropropene	20.7		µg/kg		20.0		103	70-130		
trans-1,3-Dichloropropene	19.6		µg/kg		20.0		98	70-130		
Ethylbenzene	22.0		µg/kg		20.0		110	70-130		
Hexachlorobutadiene	23.4		µg/kg		20.0		117	70-130		
2-Hexanone (MBK)	14.9		µg/kg		20.0		75	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1804714 - SW846 5035A Soil (low level)										
LCS (1804714-BS1)					<u>Prepared & Analyzed: 09-Apr-18</u>					
Isopropylbenzene	22.1		µg/kg		20.0		110	70-130		
4-Isopropyltoluene	23.6		µg/kg		20.0		118	70-130		
Methyl tert-butyl ether	21.0		µg/kg		20.0		105	70-130		
4-Methyl-2-pentanone (MIBK)	18.2		µg/kg		20.0		91	70-130		
Methylene chloride	21.4		µg/kg		20.0		107	70-130		
Naphthalene	18.2		µg/kg		20.0		91	70-130		
n-Propylbenzene	22.8		µg/kg		20.0		114	70-130		
Styrene	19.7		µg/kg		20.0		98	70-130		
1,1,1,2-Tetrachloroethane	19.4		µg/kg		20.0		97	70-130		
1,1,2,2-Tetrachloroethane	19.5		µg/kg		20.0		97	70-130		
Tetrachloroethene	23.2		µg/kg		20.0		116	70-130		
Toluene	20.5		µg/kg		20.0		103	70-130		
1,2,3-Trichlorobenzene	20.8		µg/kg		20.0		104	70-130		
1,2,4-Trichlorobenzene	21.0		µg/kg		20.0		105	70-130		
1,1,1-Trichloroethane	21.7		µg/kg		20.0		109	70-130		
1,1,2-Trichloroethane	19.7		µg/kg		20.0		99	70-130		
Trichloroethene	21.2		µg/kg		20.0		106	70-130		
Trichlorofluoromethane (Freon 11)	24.0		µg/kg		20.0		120	70-130		
1,2,3-Trichloropropane	19.4		µg/kg		20.0		97	70-130		
1,2,4-Trimethylbenzene	21.7		µg/kg		20.0		109	70-130		
1,3,5-Trimethylbenzene	22.0		µg/kg		20.0		110	70-130		
Vinyl chloride	23.5		µg/kg		20.0		118	70-130		
m,p-Xylene	22.5		µg/kg		20.0		112	70-130		
o-Xylene	21.9		µg/kg		20.0		109	70-130		
Tetrahydrofuran	18.1		µg/kg		20.0		90	70-130		
Ethyl ether	20.9		µg/kg		20.0		105	70-130		
Tert-amyl methyl ether	18.7		µg/kg		20.0		93	70-130		
Ethyl tert-butyl ether	19.8		µg/kg		20.0		99	70-130		
Di-isopropyl ether	19.8		µg/kg		20.0		99	70-130		
1,4-Dioxane	181		µg/kg		200		90	70-130		
Surrogate: 4-Bromofluorobenzene	51.3		µg/kg		50.0		103	70-130		
Surrogate: Toluene-d8	49.7		µg/kg		50.0		99	70-130		
Surrogate: 1,2-Dichloroethane-d4	48.7		µg/kg		50.0		97	70-130		
Surrogate: Dibromofluoromethane	49.9		µg/kg		50.0		100	70-130		
LCS Dup (1804714-BS1)					<u>Prepared & Analyzed: 09-Apr-18</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	23.5		µg/kg		20.0		118	70-130	2	30
Acetone	18.3		µg/kg		20.0		92	70-130	12	30
Benzene	20.5		µg/kg		20.0		103	70-130	1	30
Bromobenzene	20.4		µg/kg		20.0		102	70-130	0.8	30
Bromochloromethane	19.8		µg/kg		20.0		99	70-130	4	30
Bromodichloromethane	19.6		µg/kg		20.0		98	70-130	0.8	30
Bromoform	17.8		µg/kg		20.0		89	70-130	0.2	30
Bromomethane	18.6		µg/kg		20.0		93	70-130	16	30
2-Butanone (MEK)	21.3		µg/kg		20.0		106	70-130	3	30
n-Butylbenzene	23.0		µg/kg		20.0		115	70-130	3	30
sec-Butylbenzene	23.2		µg/kg		20.0		116	70-130	1	30
tert-Butylbenzene	22.4		µg/kg		20.0		112	70-130	2	30
Carbon disulfide	22.9		µg/kg		20.0		114	70-130	0.1	30
Carbon tetrachloride	22.4		µg/kg		20.0		112	70-130	0.09	30
Chlorobenzene	20.0		µg/kg		20.0		100	70-130	0.9	30

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1804714 - SW846 5035A Soil (low level)										
<u>LCS Dup (1804714-BSD1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
Chloroethane	20.6		µg/kg		20.0		103	70-130	1	30
Chloroform	18.9		µg/kg		20.0		95	70-130	0.9	30
Chloromethane	19.6		µg/kg		20.0		98	70-130	0.8	30
2-Chlorotoluene	22.1		µg/kg		20.0		111	70-130	3	30
4-Chlorotoluene	21.7		µg/kg		20.0		109	70-130	1	30
1,2-Dibromo-3-chloropropane	17.7		µg/kg		20.0		88	70-130	3	30
Dibromochloromethane	18.5		µg/kg		20.0		92	70-130	2	30
1,2-Dibromoethane (EDB)	20.4		µg/kg		20.0		102	70-130	4	30
Dibromomethane	19.4		µg/kg		20.0		97	70-130	2	30
1,2-Dichlorobenzene	20.5		µg/kg		20.0		102	70-130	1	30
1,3-Dichlorobenzene	21.3		µg/kg		20.0		106	70-130	0.3	30
1,4-Dichlorobenzene	20.1		µg/kg		20.0		101	70-130	0.8	30
Dichlorodifluoromethane (Freon12)	25.4		µg/kg		20.0		127	70-130	2	30
1,1-Dichloroethane	20.0		µg/kg		20.0		100	70-130	0.4	30
1,2-Dichloroethane	19.0		µg/kg		20.0		95	70-130	1	30
1,1-Dichloroethene	24.0		µg/kg		20.0		120	70-130	1	30
cis-1,2-Dichloroethene	20.9		µg/kg		20.0		105	70-130	1	30
trans-1,2-Dichloroethene	21.5		µg/kg		20.0		107	70-130	0.8	30
1,2-Dichloropropane	19.4		µg/kg		20.0		97	70-130	1	30
1,3-Dichloropropane	19.2		µg/kg		20.0		96	70-130	2	30
2,2-Dichloropropane	22.8		µg/kg		20.0		114	70-130	2	30
1,1-Dichloropropene	22.6		µg/kg		20.0		113	70-130	0.4	30
cis-1,3-Dichloropropene	20.6		µg/kg		20.0		103	70-130	0.6	30
trans-1,3-Dichloropropene	19.3		µg/kg		20.0		96	70-130	2	30
Ethylbenzene	22.3		µg/kg		20.0		112	70-130	1	30
Hexachlorobutadiene	23.5		µg/kg		20.0		118	70-130	0.3	30
2-Hexanone (MBK)	16.7		µg/kg		20.0		84	70-130	12	30
Isopropylbenzene	22.6		µg/kg		20.0		113	70-130	2	30
4-Isopropyltoluene	23.6		µg/kg		20.0		118	70-130	0.1	30
Methyl tert-butyl ether	20.6		µg/kg		20.0		103	70-130	2	30
4-Methyl-2-pentanone (MIBK)	18.2		µg/kg		20.0		91	70-130	0.05	30
Methylene chloride	21.3		µg/kg		20.0		107	70-130	0.4	30
Naphthalene	17.5		µg/kg		20.0		87	70-130	4	30
n-Propylbenzene	23.1		µg/kg		20.0		115	70-130	1	30
Styrene	19.9		µg/kg		20.0		99	70-130	1	30
1,1,1,2-Tetrachloroethane	19.7		µg/kg		20.0		98	70-130	1	30
1,1,2,2-Tetrachloroethane	19.2		µg/kg		20.0		96	70-130	1	30
Tetrachloroethene	23.2		µg/kg		20.0		116	70-130	0.1	30
Toluene	20.2		µg/kg		20.0		101	70-130	1	30
1,2,3-Trichlorobenzene	19.7		µg/kg		20.0		98	70-130	6	30
1,2,4-Trichlorobenzene	20.2		µg/kg		20.0		101	70-130	4	30
1,1,1-Trichloroethane	21.6		µg/kg		20.0		108	70-130	0.9	30
1,1,2-Trichloroethane	19.4		µg/kg		20.0		97	70-130	2	30
Trichloroethene	21.4		µg/kg		20.0		107	70-130	0.6	30
Trichlorofluoromethane (Freon 11)	22.7		µg/kg		20.0		113	70-130	6	30
1,2,3-Trichloropropane	19.2		µg/kg		20.0		96	70-130	1	30
1,2,4-Trimethylbenzene	21.6		µg/kg		20.0		108	70-130	0.9	30
1,3,5-Trimethylbenzene	21.9		µg/kg		20.0		110	70-130	0.4	30
Vinyl chloride	22.7		µg/kg		20.0		113	70-130	4	30
m,p-Xylene	22.7		µg/kg		20.0		114	70-130	1	30

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW846 8260C</u>										
Batch 1804714 - SW846 5035A Soil (low level)										
<u>LCS Dup (1804714-BSD1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
o-Xylene	22.2		µg/kg		20.0		111	70-130	1	30
Tetrahydrofuran	17.8		µg/kg		20.0		89	70-130	1	30
Ethyl ether	18.4		µg/kg		20.0		92	70-130	13	30
Tert-amyl methyl ether	18.0		µg/kg		20.0		90	70-130	4	30
Ethyl tert-butyl ether	19.8		µg/kg		20.0		99	70-130	0.05	30
Di-isopropyl ether	19.8		µg/kg		20.0		99	70-130	0.2	30
1,4-Dioxane	189		µg/kg		200		94	70-130	4	30
Surrogate: 4-Bromofluorobenzene	51.5		µg/kg		50.0		103	70-130		
Surrogate: Toluene-d8	50.0		µg/kg		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	47.8		µg/kg		50.0		96	70-130		
Surrogate: Dibromofluoromethane	49.9		µg/kg		50.0		100	70-130		
Batch 1804715 - SW846 5030 Water MS										
<u>Blank (1804715-BLK1)</u>					<u>Prepared & Analyzed: 09-Apr-18</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00						
Acetone	< 10.0		µg/l	10.0						
Benzene	< 1.00		µg/l	1.00						
Bromobenzene	< 1.00		µg/l	1.00						
Bromochloromethane	< 1.00		µg/l	1.00						
Bromodichloromethane	< 0.50		µg/l	0.50						
Bromoform	< 1.00		µg/l	1.00						
Bromomethane	< 2.00		µg/l	2.00						
2-Butanone (MEK)	< 2.00		µg/l	2.00						
n-Butylbenzene	< 1.00		µg/l	1.00						
sec-Butylbenzene	< 1.00		µg/l	1.00						
tert-Butylbenzene	< 1.00		µg/l	1.00						
Carbon disulfide	< 2.00		µg/l	2.00						
Carbon tetrachloride	< 1.00		µg/l	1.00						
Chlorobenzene	< 1.00		µg/l	1.00						
Chloroethane	< 2.00		µg/l	2.00						
Chloroform	< 1.00		µg/l	1.00						
Chloromethane	< 2.00		µg/l	2.00						
2-Chlorotoluene	< 1.00		µg/l	1.00						
4-Chlorotoluene	< 1.00		µg/l	1.00						
1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00						
Dibromochloromethane	< 0.50		µg/l	0.50						
1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50						
Dibromomethane	< 1.00		µg/l	1.00						
1,2-Dichlorobenzene	< 1.00		µg/l	1.00						
1,3-Dichlorobenzene	< 1.00		µg/l	1.00						
1,4-Dichlorobenzene	< 1.00		µg/l	1.00						
Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00						
1,1-Dichloroethane	< 1.00		µg/l	1.00						
1,2-Dichloroethane	< 1.00		µg/l	1.00						
1,1-Dichloroethene	< 1.00		µg/l	1.00						
cis-1,2-Dichloroethene	< 1.00		µg/l	1.00						
trans-1,2-Dichloroethene	< 1.00		µg/l	1.00						
1,2-Dichloropropane	< 1.00		µg/l	1.00						
1,3-Dichloropropane	< 1.00		µg/l	1.00						
2,2-Dichloropropane	< 1.00		µg/l	1.00						
1,1-Dichloropropene	< 1.00		µg/l	1.00						

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1804715 - SW846 5030 Water MS										
Blank (1804715-BLK1)					<u>Prepared & Analyzed: 09-Apr-18</u>					
cis-1,3-Dichloropropene	< 0.50		µg/l	0.50						
trans-1,3-Dichloropropene	< 0.50		µg/l	0.50						
Ethylbenzene	< 1.00		µg/l	1.00						
Hexachlorobutadiene	< 0.50		µg/l	0.50						
2-Hexanone (MBK)	< 2.00		µg/l	2.00						
Isopropylbenzene	< 1.00		µg/l	1.00						
4-Isopropyltoluene	< 1.00		µg/l	1.00						
Methyl tert-butyl ether	< 1.00		µg/l	1.00						
4-Methyl-2-pentanone (MIBK)	< 2.00		µg/l	2.00						
Methylene chloride	< 2.00		µg/l	2.00						
Naphthalene	< 1.00		µg/l	1.00						
n-Propylbenzene	< 1.00		µg/l	1.00						
Styrene	< 1.00		µg/l	1.00						
1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00						
1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50						
Tetrachloroethene	< 1.00		µg/l	1.00						
Toluene	< 1.00		µg/l	1.00						
1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00						
1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00						
1,1,1-Trichloroethane	< 1.00		µg/l	1.00						
1,1,2-Trichloroethane	< 1.00		µg/l	1.00						
Trichloroethene	< 1.00		µg/l	1.00						
Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00						
1,2,3-Trichloropropane	< 1.00		µg/l	1.00						
1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00						
1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00						
Vinyl chloride	< 1.00		µg/l	1.00						
m,p-Xylene	< 2.00		µg/l	2.00						
o-Xylene	< 1.00		µg/l	1.00						
Tetrahydrofuran	< 2.00		µg/l	2.00						
Ethyl ether	< 1.00		µg/l	1.00						
Tert-amyl methyl ether	< 1.00		µg/l	1.00						
Ethyl tert-butyl ether	< 1.00		µg/l	1.00						
Di-isopropyl ether	< 1.00		µg/l	1.00						
1,4-Dioxane	< 20.0		µg/l	20.0						
Surrogate: 4-Bromofluorobenzene	47.2		µg/l		50.0		94	70-130		
Surrogate: Toluene-d8	51.0		µg/l		50.0		102	70-130		
Surrogate: 1,2-Dichloroethane-d4	57.5		µg/l		50.0		115	70-130		
Surrogate: Dibromofluoromethane	52.1		µg/l		50.0		104	70-130		
LCS (1804715-BS1)					<u>Prepared & Analyzed: 09-Apr-18</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.5		µg/l		20.0		102	70-130		
Acetone	17.4		µg/l		20.0		87	70-130		
Benzene	18.0		µg/l		20.0		90	70-130		
Bromobenzene	21.4		µg/l		20.0		107	70-130		
Bromochloromethane	22.0		µg/l		20.0		110	70-130		
Bromodichloromethane	22.4		µg/l		20.0		112	70-130		
Bromoform	23.3		µg/l		20.0		117	70-130		
Bromomethane	28.5		µg/l		20.0		143	70-130		
2-Butanone (MEK)	16.0		µg/l		20.0		80	70-130		
n-Butylbenzene	16.8		µg/l		20.0		84	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1804715 - SW846 5030 Water MS										
LCS (1804715-BS1)					Prepared & Analyzed: 09-Apr-18					
sec-Butylbenzene	19.2		µg/l		20.0		96	70-130		
tert-Butylbenzene	20.0		µg/l		20.0		100	70-130		
Carbon disulfide	20.1		µg/l		20.0		101	70-130		
Carbon tetrachloride	23.5		µg/l		20.0		117	70-130		
Chlorobenzene	19.9		µg/l		20.0		100	70-130		
Chloroethane	31.6	QC2	µg/l		20.0		158	70-130		
Chloroform	21.0		µg/l		20.0		105	70-130		
Chloromethane	14.3		µg/l		20.0		72	70-130		
2-Chlorotoluene	20.7		µg/l		20.0		104	70-130		
4-Chlorotoluene	20.8		µg/l		20.0		104	70-130		
1,2-Dibromo-3-chloropropane	22.1		µg/l		20.0		110	70-130		
Dibromochloromethane	24.2		µg/l		20.0		121	70-130		
1,2-Dibromoethane (EDB)	20.5		µg/l		20.0		103	70-130		
Dibromomethane	20.6		µg/l		20.0		103	70-130		
1,2-Dichlorobenzene	22.5		µg/l		20.0		112	70-130		
1,3-Dichlorobenzene	22.0		µg/l		20.0		110	70-130		
1,4-Dichlorobenzene	19.7		µg/l		20.0		99	70-130		
Dichlorodifluoromethane (Freon12)	19.6		µg/l		20.0		98	70-130		
1,1-Dichloroethane	17.8		µg/l		20.0		89	70-130		
1,2-Dichloroethane	21.6		µg/l		20.0		108	70-130		
1,1-Dichloroethene	18.3		µg/l		20.0		92	70-130		
cis-1,2-Dichloroethene	17.9		µg/l		20.0		90	70-130		
trans-1,2-Dichloroethene	17.8		µg/l		20.0		89	70-130		
1,2-Dichloropropane	16.6		µg/l		20.0		83	70-130		
1,3-Dichloropropane	18.2		µg/l		20.0		91	70-130		
2,2-Dichloropropane	21.4		µg/l		20.0		107	70-130		
1,1-Dichloropropene	17.5		µg/l		20.0		87	70-130		
cis-1,3-Dichloropropene	17.7		µg/l		20.0		89	70-130		
trans-1,3-Dichloropropene	20.3		µg/l		20.0		102	70-130		
Ethylbenzene	19.1		µg/l		20.0		95	70-130		
Hexachlorobutadiene	20.3		µg/l		20.0		102	70-130		
2-Hexanone (MBK)	15.1		µg/l		20.0		75	70-130		
Isopropylbenzene	19.5		µg/l		20.0		97	70-130		
4-Isopropyltoluene	18.5		µg/l		20.0		92	70-130		
Methyl tert-butyl ether	18.1		µg/l		20.0		90	70-130		
4-Methyl-2-pentanone (MIBK)	16.0		µg/l		20.0		80	70-130		
Methylene chloride	18.7		µg/l		20.0		93	70-130		
Naphthalene	24.5		µg/l		20.0		122	70-130		
n-Propylbenzene	19.4		µg/l		20.0		97	70-130		
Styrene	19.8		µg/l		20.0		99	70-130		
1,1,1,2-Tetrachloroethane	24.2		µg/l		20.0		121	70-130		
1,1,2,2-Tetrachloroethane	19.8		µg/l		20.0		99	70-130		
Tetrachloroethene	20.8		µg/l		20.0		104	70-130		
Toluene	19.2		µg/l		20.0		96	70-130		
1,2,3-Trichlorobenzene	22.8		µg/l		20.0		114	70-130		
1,2,4-Trichlorobenzene	22.7		µg/l		20.0		114	70-130		
1,1,1-Trichloroethane	22.9		µg/l		20.0		114	70-130		
1,1,2-Trichloroethane	19.1		µg/l		20.0		96	70-130		
Trichloroethene	20.2		µg/l		20.0		101	70-130		
Trichlorofluoromethane (Freon 11)	27.6	QM9	µg/l		20.0		138	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1804715 - SW846 5030 Water MS										
LCS (1804715-BS1)					<u>Prepared & Analyzed: 09-Apr-18</u>					
1,2,3-Trichloropropane	20.4		µg/l		20.0		102	70-130		
1,2,4-Trimethylbenzene	21.0		µg/l		20.0		105	70-130		
1,3,5-Trimethylbenzene	21.0		µg/l		20.0		105	70-130		
Vinyl chloride	20.8		µg/l		20.0		104	70-130		
m,p-Xylene	19.6		µg/l		20.0		98	70-130		
o-Xylene	18.8		µg/l		20.0		94	70-130		
Tetrahydrofuran	14.2		µg/l		20.0		71	70-130		
Ethyl ether	21.8		µg/l		20.0		109	70-130		
Tert-amyl methyl ether	17.5		µg/l		20.0		88	70-130		
Ethyl tert-butyl ether	17.0		µg/l		20.0		85	70-130		
Di-isopropyl ether	14.7		µg/l		20.0		73	70-130		
1,4-Dioxane	156		µg/l		200		78	70-130		
Surrogate: 4-Bromofluorobenzene	49.5		µg/l		50.0		99	70-130		
Surrogate: Toluene-d8	51.0		µg/l		50.0		102	70-130		
Surrogate: 1,2-Dichloroethane-d4	56.2		µg/l		50.0		112	70-130		
Surrogate: Dibromofluoromethane	51.8		µg/l		50.0		104	70-130		
LCS Dup (1804715-BSD1)					<u>Prepared & Analyzed: 09-Apr-18</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	19.6		µg/l		20.0		98	70-130	5	20
Acetone	15.9		µg/l		20.0		79	70-130	9	20
Benzene	17.4		µg/l		20.0		87	70-130	3	20
Bromobenzene	20.7		µg/l		20.0		104	70-130	3	20
Bromochloromethane	22.4		µg/l		20.0		112	70-130	2	20
Bromodichloromethane	22.3		µg/l		20.0		111	70-130	0.3	20
Bromoform	23.1		µg/l		20.0		115	70-130	1	20
Bromomethane	27.8		µg/l		20.0		139	70-130	3	20
2-Butanone (MEK)	15.4		µg/l		20.0		77	70-130	4	20
n-Butylbenzene	15.1		µg/l		20.0		75	70-130	11	20
sec-Butylbenzene	17.6		µg/l		20.0		88	70-130	9	20
tert-Butylbenzene	18.6		µg/l		20.0		93	70-130	7	20
Carbon disulfide	19.0		µg/l		20.0		95	70-130	6	20
Carbon tetrachloride	22.0		µg/l		20.0		110	70-130	6	20
Chlorobenzene	19.3		µg/l		20.0		97	70-130	3	20
Chloroethane	27.2	QC2	µg/l		20.0		136	70-130	15	20
Chloroform	20.5		µg/l		20.0		103	70-130	2	20
Chloromethane	13.8		µg/l		20.0		69	70-130	4	20
2-Chlorotoluene	19.5		µg/l		20.0		98	70-130	6	20
4-Chlorotoluene	19.8		µg/l		20.0		99	70-130	5	20
1,2-Dibromo-3-chloropropane	21.1		µg/l		20.0		106	70-130	4	20
Dibromochloromethane	23.8		µg/l		20.0		119	70-130	2	20
1,2-Dibromoethane (EDB)	21.0		µg/l		20.0		105	70-130	2	20
Dibromomethane	21.1		µg/l		20.0		105	70-130	2	20
1,2-Dichlorobenzene	22.6		µg/l		20.0		113	70-130	0.4	20
1,3-Dichlorobenzene	20.9		µg/l		20.0		105	70-130	5	20
1,4-Dichlorobenzene	18.8		µg/l		20.0		94	70-130	5	20
Dichlorodifluoromethane (Freon12)	18.4		µg/l		20.0		92	70-130	6	20
1,1-Dichloroethane	17.5		µg/l		20.0		88	70-130	2	20
1,2-Dichloroethane	21.5		µg/l		20.0		108	70-130	0.3	20
1,1-Dichloroethene	17.8		µg/l		20.0		89	70-130	3	20
cis-1,2-Dichloroethene	17.9		µg/l		20.0		89	70-130	0.4	20
trans-1,2-Dichloroethene	17.1		µg/l		20.0		85	70-130	4	20

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1804715 - SW846 5030 Water MS										
LCS Dup (1804715-BSD1)					Prepared & Analyzed: 09-Apr-18					
1,2-Dichloropropane	16.4		µg/l		20.0		82	70-130	1	20
1,3-Dichloropropane	18.2		µg/l		20.0		91	70-130	0.05	20
2,2-Dichloropropane	20.3		µg/l		20.0		101	70-130	5	20
1,1-Dichloropropene	16.6		µg/l		20.0		83	70-130	5	20
cis-1,3-Dichloropropene	17.7		µg/l		20.0		89	70-130	0	20
trans-1,3-Dichloropropene	20.3		µg/l		20.0		102	70-130	0.05	20
Ethylbenzene	18.2		µg/l		20.0		91	70-130	5	20
Hexachlorobutadiene	18.0		µg/l		20.0		90	70-130	12	20
2-Hexanone (MBK)	14.9		µg/l		20.0		74	70-130	1	20
Isopropylbenzene	18.2		µg/l		20.0		91	70-130	6	20
4-Isopropyltoluene	16.9		µg/l		20.0		85	70-130	9	20
Methyl tert-butyl ether	18.4		µg/l		20.0		92	70-130	2	20
4-Methyl-2-pentanone (MIBK)	15.8		µg/l		20.0		79	70-130	1	20
Methylene chloride	18.4		µg/l		20.0		92	70-130	2	20
Naphthalene	23.9		µg/l		20.0		119	70-130	3	20
n-Propylbenzene	18.1		µg/l		20.0		90	70-130	7	20
Styrene	18.7		µg/l		20.0		93	70-130	6	20
1,1,1,2-Tetrachloroethane	23.5		µg/l		20.0		118	70-130	3	20
1,1,2,2-Tetrachloroethane	19.4		µg/l		20.0		97	70-130	2	20
Tetrachloroethene	19.9		µg/l		20.0		100	70-130	4	20
Toluene	18.7		µg/l		20.0		94	70-130	3	20
1,2,3-Trichlorobenzene	21.9		µg/l		20.0		109	70-130	4	20
1,2,4-Trichlorobenzene	21.6		µg/l		20.0		108	70-130	5	20
1,1,1-Trichloroethane	21.7		µg/l		20.0		109	70-130	5	20
1,1,2-Trichloroethane	19.3		µg/l		20.0		97	70-130	1	20
Trichloroethene	19.4		µg/l		20.0		97	70-130	4	20
Trichlorofluoromethane (Freon 11)	25.4		µg/l		20.0		127	70-130	8	20
1,2,3-Trichloropropane	20.3		µg/l		20.0		101	70-130	0.6	20
1,2,4-Trimethylbenzene	19.8		µg/l		20.0		99	70-130	6	20
1,3,5-Trimethylbenzene	19.4		µg/l		20.0		97	70-130	8	20
Vinyl chloride	20.0		µg/l		20.0		100	70-130	4	20
m,p-Xylene	18.7		µg/l		20.0		93	70-130	5	20
o-Xylene	18.0		µg/l		20.0		90	70-130	4	20
Tetrahydrofuran	14.0		µg/l		20.0		70	70-130	2	20
Ethyl ether	21.2		µg/l		20.0		106	70-130	2	20
Tert-amyl methyl ether	17.9		µg/l		20.0		89	70-130	2	20
Ethyl tert-butyl ether	16.9		µg/l		20.0		85	70-130	0.1	20
Di-isopropyl ether	14.6		µg/l		20.0		73	70-130	0.8	20
1,4-Dioxane	154		µg/l		200		77	70-130	1	20
Surrogate: 4-Bromofluorobenzene	49.5		µg/l		50.0		99	70-130		
Surrogate: Toluene-d8	51.6		µg/l		50.0		103	70-130		
Surrogate: 1,2-Dichloroethane-d4	56.9		µg/l		50.0		114	70-130		
Surrogate: Dibromofluoromethane	53.0		µg/l		50.0		106	70-130		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1804705 - SW846 3546										
Blank (1804705-BLK1)					<u>Prepared: 09-Apr-18 Analyzed: 11-Apr-18</u>					
C9-C18 Aliphatic Hydrocarbons	< 9.89		mg/kg wet	9.89						
C19-C36 Aliphatic Hydrocarbons	< 9.89		mg/kg wet	9.89						
C11-C22 Aromatic Hydrocarbons	< 9.89		mg/kg wet	9.89						
Unadjusted C11-C22 Aromatic Hydrocarbons	< 9.89		mg/kg wet	9.89						
Total Petroleum Hydrocarbons	< 29.7		mg/kg wet	29.7						
Unadjusted Total Petroleum Hydrocarbons	< 29.7		mg/kg wet	29.7						
Naphthalene	< 0.329		mg/kg wet	0.329						
2-Methylnaphthalene	< 0.329		mg/kg wet	0.329						
Acenaphthylene	< 0.329		mg/kg wet	0.329						
Acenaphthene	< 0.329		mg/kg wet	0.329						
Fluorene	< 0.329		mg/kg wet	0.329						
Phenanthrene	< 0.329		mg/kg wet	0.329						
Anthracene	< 0.329		mg/kg wet	0.329						
Fluoranthene	< 0.329		mg/kg wet	0.329						
Pyrene	< 0.329		mg/kg wet	0.329						
Benzo (a) anthracene	< 0.329		mg/kg wet	0.329						
Chrysene	< 0.329		mg/kg wet	0.329						
Benzo (b) fluoranthene	< 0.329		mg/kg wet	0.329						
Benzo (k) fluoranthene	< 0.329		mg/kg wet	0.329						
Benzo (a) pyrene	< 0.329		mg/kg wet	0.329						
Indeno (1,2,3-cd) pyrene	< 0.329		mg/kg wet	0.329						
Dibenzo (a,h) anthracene	< 0.329		mg/kg wet	0.329						
Benzo (g,h,i) perylene	< 0.329		mg/kg wet	0.329						
n-Nonane (C9)	< 0.329		mg/kg wet	0.329						
n-Decane	< 0.329		mg/kg wet	0.329						
n-Dodecane	< 0.329		mg/kg wet	0.329						
n-Tetradecane	< 0.329		mg/kg wet	0.329						
n-Hexadecane	< 0.329		mg/kg wet	0.329						
n-Octadecane	< 0.329		mg/kg wet	0.329						
n-Nonadecane	< 0.329		mg/kg wet	0.329						
n-Eicosane	< 0.329		mg/kg wet	0.329						
n-Docosane	< 0.329		mg/kg wet	0.329						
n-Tetracosane	< 0.329		mg/kg wet	0.329						
n-Hexacosane	< 0.329		mg/kg wet	0.329						
n-Octacosane	< 0.329		mg/kg wet	0.329						
n-Triacontane	< 0.329		mg/kg wet	0.329						
n-Hexatriacontane	< 0.329		mg/kg wet	0.329						
Naphthalene (aliphatic fraction)	0.00		mg/kg wet							
2-Methylnaphthalene (aliphatic fraction)	0.00		mg/kg wet							
Surrogate: 1-Chlorooctadecane	1.68		mg/kg wet		3.30		51	40-140		
Surrogate: Ortho-Terphenyl	1.50		mg/kg wet		3.30		46	40-140		
Surrogate: 2-Fluorobiphenyl	1.49		mg/kg wet		2.64		57	40-140		
LCS (1804705-BS1)					<u>Prepared: 09-Apr-18 Analyzed: 11-Apr-18</u>					
C9-C18 Aliphatic Hydrocarbons	26.6		mg/kg wet	9.98	39.9		67	40-140		
C19-C36 Aliphatic Hydrocarbons	31.6		mg/kg wet	9.98	53.2		59	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	32.4		mg/kg wet	9.98	45.2		72	40-140		
Naphthalene	1.28		mg/kg wet	0.332	2.66		48	40-140		
2-Methylnaphthalene	1.36		mg/kg wet	0.332	2.66		51	40-140		
Acenaphthylene	1.45		mg/kg wet	0.332	2.66		55	40-140		

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Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1804705 - SW846 3546										
LCS (1804705-BS1)					Prepared: 09-Apr-18 Analyzed: 11-Apr-18					
Acenaphthene	1.42		mg/kg wet	0.332	2.66		54	40-140		
Fluorene	1.58		mg/kg wet	0.332	2.66		60	40-140		
Phenanthrene	1.73		mg/kg wet	0.332	2.66		65	40-140		
Anthracene	1.80		mg/kg wet	0.332	2.66		68	40-140		
Fluoranthene	1.86		mg/kg wet	0.332	2.66		70	40-140		
Pyrene	1.83		mg/kg wet	0.332	2.66		69	40-140		
Benzo (a) anthracene	1.59		mg/kg wet	0.332	2.66		60	40-140		
Chrysene	1.55		mg/kg wet	0.332	2.66		58	40-140		
Benzo (b) fluoranthene	1.50		mg/kg wet	0.332	2.66		56	40-140		
Benzo (k) fluoranthene	1.45		mg/kg wet	0.332	2.66		55	40-140		
Benzo (a) pyrene	1.45		mg/kg wet	0.332	2.66		54	40-140		
Indeno (1,2,3-cd) pyrene	1.36		mg/kg wet	0.332	2.66		51	40-140		
Dibenzo (a,h) anthracene	1.34		mg/kg wet	0.332	2.66		50	40-140		
Benzo (g,h,i) perylene	1.38		mg/kg wet	0.332	2.66		52	40-140		
n-Nonane (C9)	2.68		mg/kg wet	0.332	6.65		40	30-140		
n-Decane	2.84		mg/kg wet	0.332	6.65		43	40-140		
n-Dodecane	2.81		mg/kg wet	0.332	6.65		42	40-140		
n-Tetradecane	2.96		mg/kg wet	0.332	6.65		45	40-140		
n-Hexadecane	3.52		mg/kg wet	0.332	6.65		53	40-140		
n-Octadecane	3.91		mg/kg wet	0.332	6.65		59	40-140		
n-Nonadecane	4.03		mg/kg wet	0.332	6.65		61	40-140		
n-Eicosane	4.15		mg/kg wet	0.332	6.65		62	40-140		
n-Docosane	4.25		mg/kg wet	0.332	6.65		64	40-140		
n-Tetracosane	4.13		mg/kg wet	0.332	6.65		62	40-140		
n-Hexacosane	3.93		mg/kg wet	0.332	6.65		59	40-140		
n-Octacosane	3.78		mg/kg wet	0.332	6.65		57	40-140		
n-Triacontane	3.63		mg/kg wet	0.332	6.65		55	40-140		
n-Hexatriacontane	6.39		mg/kg wet	0.332	6.65		96	40-140		
Naphthalene (aliphatic fraction)	0.00		mg/kg wet		2.66			0-200		
2-Methylnaphthalene (aliphatic fraction)	0.00		mg/kg wet		2.66			0-200		
Surrogate: 1-Chlorooctadecane	2.02		mg/kg wet		3.33		61	40-140		
Surrogate: Ortho-Terphenyl	2.18		mg/kg wet		3.33		66	40-140		
Surrogate: 2-Fluorobiphenyl	1.38		mg/kg wet		2.66		52	40-140		
Fractionation Check Standard (1804705-BS2)					Prepared: 09-Apr-18 Analyzed: 11-Apr-18					
C9-C18 Aliphatic Hydrocarbons	27.7		mg/kg wet	10.0	40.0		69	40-140		
C19-C36 Aliphatic Hydrocarbons	35.6		mg/kg wet	10.0	53.3		67	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	28.3		mg/kg wet	10.0	45.3		63	40-140		
Naphthalene	1.15		mg/kg wet	0.333	2.67		43	40-140		
2-Methylnaphthalene	1.21		mg/kg wet	0.333	2.67		45	40-140		
Acenaphthylene	1.18		mg/kg wet	0.333	2.67		44	40-140		
Acenaphthene	1.17		mg/kg wet	0.333	2.67		44	40-140		
Fluorene	1.14		mg/kg wet	0.333	2.67		43	40-140		
Phenanthrene	1.09		mg/kg wet	0.333	2.67		41	40-140		
Anthracene	1.07		mg/kg wet	0.333	2.67		40	40-140		
Fluoranthene	1.15		mg/kg wet	0.333	2.67		43	40-140		
Pyrene	1.08		mg/kg wet	0.333	2.67		41	40-140		
Benzo (a) anthracene	1.19		mg/kg wet	0.333	2.67		45	40-140		
Chrysene	1.11		mg/kg wet	0.333	2.67		41	40-140		
Benzo (b) fluoranthene	1.10		mg/kg wet	0.333	2.67		41	40-140		

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Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>MADEP EPH 5/2004 R</u>										
Batch 1804705 - SW846 3546										
<u>Fractionation Check Standard (1804705-BS2)</u>					<u>Prepared: 09-Apr-18 Analyzed: 11-Apr-18</u>					
Benzo (k) fluoranthene	1.14		mg/kg wet	0.333	2.67		43	40-140		
Benzo (a) pyrene	1.20		mg/kg wet	0.333	2.67		45	40-140		
Indeno (1,2,3-cd) pyrene	1.13		mg/kg wet	0.333	2.67		42	40-140		
Dibenzo (a,h) anthracene	1.18		mg/kg wet	0.333	2.67		44	40-140		
Benzo (g,h,i) perylene	1.18		mg/kg wet	0.333	2.67		44	40-140		
n-Nonane (C9)	2.80		mg/kg wet	0.333	6.67		42	30-140		
n-Decane	3.06		mg/kg wet	0.333	6.67		46	40-140		
n-Dodecane	2.70		mg/kg wet	0.333	6.67		40	40-140		
n-Tetradecane	2.85		mg/kg wet	0.333	6.67		43	40-140		
n-Hexadecane	2.74		mg/kg wet	0.333	6.67		41	40-140		
n-Octadecane	2.94		mg/kg wet	0.333	6.67		44	40-140		
n-Nonadecane	3.07		mg/kg wet	0.333	6.67		46	40-140		
n-Eicosane	3.19		mg/kg wet	0.333	6.67		48	40-140		
n-Docosane	3.35		mg/kg wet	0.333	6.67		50	40-140		
n-Tetracosane	3.32		mg/kg wet	0.333	6.67		50	40-140		
n-Hexacosane	3.24		mg/kg wet	0.333	6.67		49	40-140		
n-Octacosane	3.20		mg/kg wet	0.333	6.67		48	40-140		
n-Triacontane	3.12		mg/kg wet	0.333	6.67		47	40-140		
n-Hexatriacontane	5.44		mg/kg wet	0.333	6.67		82	40-140		
Naphthalene (aliphatic fraction)	0.00		mg/kg wet		2.67			0-200		
2-Methylnaphthalene (aliphatic fraction)	0.00		mg/kg wet		2.67			0-200		
<i>Surrogate: 1-Chlorooctadecane</i>	1.42		mg/kg wet		3.33		43	40-140		
<i>Surrogate: Ortho-Terphenyl</i>	1.51		mg/kg wet		3.33		45	40-140		
<i>Surrogate: 2-Fluorobiphenyl</i>	1.46		mg/kg wet		2.67		55	40-140		
<u>LCS Dup (1804705-BSD1)</u>					<u>Prepared: 09-Apr-18 Analyzed: 11-Apr-18</u>					
C9-C18 Aliphatic Hydrocarbons	28.6		mg/kg wet	9.95	39.8		72	40-140	7	25
C19-C36 Aliphatic Hydrocarbons	26.4		mg/kg wet	9.95	53.1		50	40-140	18	25
Unadjusted C11-C22 Aromatic Hydrocarbons	34.6		mg/kg wet	9.95	45.1		77	40-140	7	25
Naphthalene	1.17		mg/kg wet	0.331	2.65		44	40-140	9	25
2-Methylnaphthalene	1.19		mg/kg wet	0.331	2.65		45	40-140	13	25
Acenaphthylene	1.29		mg/kg wet	0.331	2.65		49	40-140	12	25
Acenaphthene	1.29		mg/kg wet	0.331	2.65		49	40-140	9	25
Fluorene	1.52		mg/kg wet	0.331	2.65		57	40-140	4	25
Phenanthrene	1.70		mg/kg wet	0.331	2.65		64	40-140	2	25
Anthracene	1.80		mg/kg wet	0.331	2.65		68	40-140	0.2	25
Fluoranthene	1.82		mg/kg wet	0.331	2.65		69	40-140	2	25
Pyrene	1.84		mg/kg wet	0.331	2.65		69	40-140	0.3	25
Benzo (a) anthracene	1.55		mg/kg wet	0.331	2.65		58	40-140	2	25
Chrysene	1.52		mg/kg wet	0.331	2.65		57	40-140	2	25
Benzo (b) fluoranthene	1.50		mg/kg wet	0.331	2.65		56	40-140	0.2	25
Benzo (k) fluoranthene	1.40		mg/kg wet	0.331	2.65		53	40-140	3	25
Benzo (a) pyrene	1.41		mg/kg wet	0.331	2.65		53	40-140	3	25
Indeno (1,2,3-cd) pyrene	1.34		mg/kg wet	0.331	2.65		50	40-140	1	25
Dibenzo (a,h) anthracene	1.31		mg/kg wet	0.331	2.65		49	40-140	2	25
Benzo (g,h,i) perylene	1.42		mg/kg wet	0.331	2.65		54	40-140	3	25
n-Nonane (C9)	3.16		mg/kg wet	0.331	6.63		48	30-140	16	25
n-Decane	3.07		mg/kg wet	0.331	6.63		46	40-140	8	25
n-Dodecane	3.10		mg/kg wet	0.331	6.63		47	40-140	10	25
n-Tetradecane	2.76		mg/kg wet	0.331	6.63		42	40-140	7	25

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Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1804705 - SW846 3546										
LCS Dup (1804705-BSD1)					Prepared: 09-Apr-18 Analyzed: 11-Apr-18					
n-Hexadecane	3.19		mg/kg wet	0.331	6.63		48	40-140	10	25
n-Octadecane	3.49		mg/kg wet	0.331	6.63		53	40-140	11	25
n-Nonadecane	3.59		mg/kg wet	0.331	6.63		54	40-140	12	25
n-Eicosane	3.69		mg/kg wet	0.331	6.63		56	40-140	12	25
n-Docosane	3.79		mg/kg wet	0.331	6.63		57	40-140	11	25
n-Tetracosane	3.70		mg/kg wet	0.331	6.63		56	40-140	11	25
n-Hexacosane	3.54		mg/kg wet	0.331	6.63		53	40-140	10	25
n-Octacosane	3.44		mg/kg wet	0.331	6.63		52	40-140	9	25
n-Triacontane	3.32		mg/kg wet	0.331	6.63		50	40-140	9	25
n-Hexatriacontane	5.72		mg/kg wet	0.331	6.63		86	40-140	11	25
Naphthalene (aliphatic fraction)	0.00		mg/kg wet		2.65			0-200		200
2-Methylnaphthalene (aliphatic fraction)	0.00		mg/kg wet		2.65			0-200		200
Surrogate: 1-Chlorooctadecane	1.89		mg/kg wet		3.32		57	40-140		
Surrogate: Ortho-Terphenyl	1.98		mg/kg wet		3.32		60	40-140		
Surrogate: 2-Fluorobiphenyl	1.35		mg/kg wet		2.65		51	40-140		
Batch 1805015 - SW846 3510C										
Blank (1805015-BLK1)					Prepared: 13-Apr-18 Analyzed: 16-Apr-18					
C9-C18 Aliphatic Hydrocarbons	< 100		µg/l	100						
C19-C36 Aliphatic Hydrocarbons	< 100		µg/l	100						
C11-C22 Aromatic Hydrocarbons	< 100		µg/l	100						
Unadjusted C11-C22 Aromatic Hydrocarbons	< 100		µg/l	100						
Total Petroleum Hydrocarbons	< 300		µg/l	300						
Unadjusted Total Petroleum Hydrocarbons	< 300		µg/l	300						
Naphthalene	< 5.00		µg/l	5.00						
2-Methylnaphthalene	< 5.00		µg/l	5.00						
Acenaphthylene	< 5.00		µg/l	5.00						
Acenaphthene	< 5.00		µg/l	5.00						
Fluorene	< 5.00		µg/l	5.00						
Phenanthrene	< 5.00		µg/l	5.00						
Anthracene	< 5.00		µg/l	5.00						
Fluoranthene	< 5.00		µg/l	5.00						
Pyrene	< 5.00		µg/l	5.00						
Benzo (a) anthracene	< 5.00		µg/l	5.00						
Chrysene	< 5.00		µg/l	5.00						
Benzo (b) fluoranthene	< 5.00		µg/l	5.00						
Benzo (k) fluoranthene	< 5.00		µg/l	5.00						
Benzo (a) pyrene	< 5.00		µg/l	5.00						
Indeno (1,2,3-cd) pyrene	< 5.00		µg/l	5.00						
Dibenzo (a,h) anthracene	< 5.00		µg/l	5.00						
Benzo (g,h,i) perylene	< 5.00		µg/l	5.00						
n-Nonane (C9)	< 5.00		µg/l	5.00						
n-Decane	< 5.00		µg/l	5.00						
n-Dodecane	< 5.00		µg/l	5.00						
n-Tetradecane	< 5.00		µg/l	5.00						
n-Hexadecane	< 5.00		µg/l	5.00						
n-Octadecane	< 5.00		µg/l	5.00						
n-Nonadecane	< 5.00		µg/l	5.00						
n-Eicosane	< 5.00		µg/l	5.00						
n-Docosane	< 5.00		µg/l	5.00						

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Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1805015 - SW846 3510C										
Blank (1805015-BLK1)					<u>Prepared: 13-Apr-18 Analyzed: 16-Apr-18</u>					
n-Tetracosane	< 5.00		µg/l	5.00						
n-Hexacosane	< 5.00		µg/l	5.00						
n-Octacosane	< 5.00		µg/l	5.00						
n-Triacontane	< 5.00		µg/l	5.00						
n-Hexatriacontane	< 5.00		µg/l	5.00						
Naphthalene (aliphatic fraction)	0.00		µg/l							
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l							
Surrogate: 1-Chlorooctadecane	26.1		µg/l		50.0		52	40-140		
Surrogate: Ortho-Terphenyl	23.5		µg/l		50.0		47	40-140		
Surrogate: 2-Fluorobiphenyl	19.9		µg/l		40.0		50	40-140		
LCS (1805015-BS1)					<u>Prepared: 13-Apr-18 Analyzed: 16-Apr-18</u>					
C9-C18 Aliphatic Hydrocarbons	311		µg/l	98.0	588		53	40-140		
C19-C36 Aliphatic Hydrocarbons	388		µg/l	98.0	784		49	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	347		µg/l	98.0	667		52	40-140		
Naphthalene	16.8		µg/l	4.90	39.2		43	40-140		
2-Methylnaphthalene	16.3		µg/l	4.90	39.2		42	40-140		
Acenaphthylene	17.3		µg/l	4.90	39.2		44	40-140		
Acenaphthene	16.8		µg/l	4.90	39.2		43	40-140		
Fluorene	16.7		µg/l	4.90	39.2		43	40-140		
Phenanthrene	17.5		µg/l	4.90	39.2		45	40-140		
Anthracene	18.1		µg/l	4.90	39.2		46	40-140		
Fluoranthene	20.0		µg/l	4.90	39.2		51	40-140		
Pyrene	19.7		µg/l	4.90	39.2		50	40-140		
Benzo (a) anthracene	21.2		µg/l	4.90	39.2		54	40-140		
Chrysene	20.7		µg/l	4.90	39.2		53	40-140		
Benzo (b) fluoranthene	20.8		µg/l	4.90	39.2		53	40-140		
Benzo (k) fluoranthene	20.8		µg/l	4.90	39.2		53	40-140		
Benzo (a) pyrene	20.8		µg/l	4.90	39.2		53	40-140		
Indeno (1,2,3-cd) pyrene	20.8		µg/l	4.90	39.2		53	40-140		
Dibenzo (a,h) anthracene	20.6		µg/l	4.90	39.2		53	40-140		
Benzo (g,h,i) perylene	21.3		µg/l	4.90	39.2		54	40-140		
n-Nonane (C9)	43.9		µg/l	4.90	98.0		45	30-140		
n-Decane	41.7		µg/l	4.90	98.0		43	40-140		
n-Dodecane	39.3		µg/l	4.90	98.0		40	40-140		
n-Tetradecane	41.9		µg/l	4.90	98.0		43	40-140		
n-Hexadecane	43.0		µg/l	4.90	98.0		44	40-140		
n-Octadecane	42.4		µg/l	4.90	98.0		43	40-140		
n-Nonadecane	42.8		µg/l	4.90	98.0		44	40-140		
n-Eicosane	40.9		µg/l	4.90	98.0		42	40-140		
n-Docosane	41.1		µg/l	4.90	98.0		42	40-140		
n-Tetracosane	40.6		µg/l	4.90	98.0		41	40-140		
n-Hexacosane	40.0		µg/l	4.90	98.0		41	40-140		
n-Octacosane	41.1		µg/l	4.90	98.0		42	40-140		
n-Triacontane	40.4		µg/l	4.90	98.0		41	40-140		
n-Hexatriacontane	40.3		µg/l	4.90	98.0		41	40-140		
Naphthalene (aliphatic fraction)	0.00		µg/l		39.2			0-200		
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l		39.2			0-200		
Surrogate: 1-Chlorooctadecane	21.6		µg/l		49.0		44	40-140		
Surrogate: Ortho-Terphenyl	21.1		µg/l		49.0		43	40-140		

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Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1805015 - SW846 3510C										
LCS (1805015-BS1)					Prepared: 13-Apr-18 Analyzed: 16-Apr-18					
Surrogate: 2-Fluorobiphenyl	19.7		µg/l		39.2		50	40-140		
LCS (1805015-BS3)					Prepared: 13-Apr-18 Analyzed: 15-Apr-18					
C9-C18 Aliphatic Hydrocarbons	334		µg/l	100	600		56	40-140		
C19-C36 Aliphatic Hydrocarbons	551		µg/l	100	800		69	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	497		µg/l	100	680		73	40-140		
Naphthalene	23.4		µg/l	5.00	40.0		59	40-140		
2-Methylnaphthalene	24.8		µg/l	5.00	40.0		62	40-140		
Acenaphthylene	26.9		µg/l	5.00	40.0		67	40-140		
Acenaphthene	26.9		µg/l	5.00	40.0		67	40-140		
Fluorene	31.1		µg/l	5.00	40.0		78	40-140		
Phenanthrene	34.5		µg/l	5.00	40.0		86	40-140		
Anthracene	35.3		µg/l	5.00	40.0		88	40-140		
Fluoranthene	33.7		µg/l	5.00	40.0		84	40-140		
Pyrene	32.4		µg/l	5.00	40.0		81	40-140		
Benzo (a) anthracene	30.4		µg/l	5.00	40.0		76	40-140		
Chrysene	29.4		µg/l	5.00	40.0		74	40-140		
Benzo (b) fluoranthene	31.4		µg/l	5.00	40.0		78	40-140		
Benzo (k) fluoranthene	29.3		µg/l	5.00	40.0		73	40-140		
Benzo (a) pyrene	30.2		µg/l	5.00	40.0		76	40-140		
Indeno (1,2,3-cd) pyrene	29.3		µg/l	5.00	40.0		73	40-140		
Dibenzo (a,h) anthracene	29.4		µg/l	5.00	40.0		73	40-140		
Benzo (g,h,i) perylene	30.0		µg/l	5.00	40.0		75	40-140		
n-Nonane (C9)	42.1		µg/l	5.00	100		42	30-140		
n-Decane	40.6		µg/l	5.00	100		41	40-140		
n-Dodecane	49.1		µg/l	5.00	100		49	40-140		
n-Tetradecane	55.1		µg/l	5.00	100		55	40-140		
n-Hexadecane	62.9		µg/l	5.00	100		63	40-140		
n-Octadecane	69.6		µg/l	5.00	100		70	40-140		
n-Nonadecane	70.6		µg/l	5.00	100		71	40-140		
n-Eicosane	69.9		µg/l	5.00	100		70	40-140		
n-Docosane	66.5		µg/l	5.00	100		67	40-140		
n-Tetracosane	64.3		µg/l	5.00	100		64	40-140		
n-Hexacosane	65.4		µg/l	5.00	100		65	40-140		
n-Octacosane	68.2		µg/l	5.00	100		68	40-140		
n-Triacontane	69.8		µg/l	5.00	100		70	40-140		
n-Hexatriacontane	129		µg/l	5.00	100		129	40-140		
Naphthalene (aliphatic fraction)	0.00		µg/l		40.0			0-200		
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l		40.0			0-200		
Surrogate: 1-Chlorooctadecane	36.1		µg/l		50.0		72	40-140		
Surrogate: Ortho-Terphenyl	43.1		µg/l		50.0		86	40-140		
Surrogate: 2-Fluorobiphenyl	22.8		µg/l		40.0		57	40-140		
LCS Dup (1805015-BSD1)					Prepared: 13-Apr-18 Analyzed: 16-Apr-18					
C9-C18 Aliphatic Hydrocarbons	322		µg/l	99.0	594		54	40-140	3	25
C19-C36 Aliphatic Hydrocarbons	372		µg/l	99.0	792		47	40-140	4	25
Unadjusted C11-C22 Aromatic Hydrocarbons	500	QR2	µg/l	99.0	673		74	40-140	36	25
Naphthalene	15.9		µg/l	4.95	39.6		40	40-140	5	25
2-Methylnaphthalene	17.0		µg/l	4.95	39.6		43	40-140	4	25
Acenaphthylene	16.2		µg/l	4.95	39.6		41	40-140	7	25

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Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MADEP EPH 5/2004 R										
Batch 1805015 - SW846 3510C										
LCS Dup (1805015-BSD1)					Prepared: 13-Apr-18 Analyzed: 16-Apr-18					
Acenaphthene	16.4		µg/l	4.95	39.6		41	40-140	2	25
Fluorene	17.4		µg/l	4.95	39.6		44	40-140	4	25
Phenanthrene	20.3		µg/l	4.95	39.6		51	40-140	14	25
Anthracene	20.9		µg/l	4.95	39.6		53	40-140	14	25
Fluoranthene	23.5		µg/l	4.95	39.6		59	40-140	16	25
Pyrene	22.8		µg/l	4.95	39.6		57	40-140	14	25
Benzo (a) anthracene	24.5		µg/l	4.95	39.6		62	40-140	15	25
Chrysene	23.9		µg/l	4.95	39.6		60	40-140	15	25
Benzo (b) fluoranthene	24.0		µg/l	4.95	39.6		61	40-140	15	25
Benzo (k) fluoranthene	23.9		µg/l	4.95	39.6		60	40-140	14	25
Benzo (a) pyrene	23.9		µg/l	4.95	39.6		60	40-140	14	25
Indeno (1,2,3-cd) pyrene	24.0		µg/l	4.95	39.6		61	40-140	15	25
Dibenzo (a,h) anthracene	24.1		µg/l	4.95	39.6		61	40-140	16	25
Benzo (g,h,i) perylene	24.7		µg/l	4.95	39.6		62	40-140	15	25
n-Nonane (C9)	40.8		µg/l	4.95	99.0		41	30-140	7	25
n-Decane	43.5		µg/l	4.95	99.0		44	40-140	4	25
n-Dodecane	44.6		µg/l	4.95	99.0		45	40-140	13	25
n-Tetradecane	41.1		µg/l	4.95	99.0		42	40-140	2	25
n-Hexadecane	42.9		µg/l	4.95	99.0		43	40-140	0.3	25
n-Octadecane	51.9		µg/l	4.95	99.0		52	40-140	20	25
n-Nonadecane	55.5	QR2	µg/l	4.95	99.0		56	40-140	26	25
n-Eicosane	58.0	QR2	µg/l	4.95	99.0		59	40-140	35	25
n-Docosane	59.1	QR2	µg/l	4.95	99.0		60	40-140	36	25
n-Tetracosane	58.4	QR2	µg/l	4.95	99.0		59	40-140	36	25
n-Hexacosane	58.3	QR2	µg/l	4.95	99.0		59	40-140	37	25
n-Octacosane	58.3	QR2	µg/l	4.95	99.0		59	40-140	35	25
n-Triacontane	55.9	QR2	µg/l	4.95	99.0		56	40-140	32	25
n-Hexatriacontane	49.6		µg/l	4.95	99.0		50	40-140	21	25
Naphthalene (aliphatic fraction)	0.00		µg/l		39.6			0-200		200
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l		39.6			0-200		200
Surrogate: 1-Chlorooctadecane	24.0		µg/l		49.5		49	40-140		
Surrogate: Ortho-Terphenyl	21.4		µg/l		49.5		43	40-140		
Surrogate: 2-Fluorobiphenyl	20.2		µg/l		39.6		51	40-140		

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW846 6010C</u>										
Batch 1804792 - SW846 3050B										
<u>Blank (1804792-BLK1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 12-Apr-18</u>					
Zinc	< 0.993		mg/kg wet	0.993						
Copper	< 0.993		mg/kg wet	0.993						
Chromium	< 0.993		mg/kg wet	0.993						
Arsenic	< 1.49		mg/kg wet	1.49						
Lead	< 1.49		mg/kg wet	1.49						
<u>Reference (1804792-SRM1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 12-Apr-18</u>					
Chromium	117		mg/kg wet	1.00	123		95	81.2-119.2		
Lead	43.5		mg/kg wet	1.50	49.8		87	81.9-118.7		
Copper	67.4		mg/kg wet	1.00	66.7		101	82.7-117.3		
Zinc	107		mg/kg wet	1.00	114		94	79.8-120.6		
Arsenic	72.8		mg/kg wet	1.50	76.7		95	82.4-117.6		
<u>Reference (1804792-SRM2)</u>					<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>					
Lead	39.2	QM9	mg/kg wet	1.50	50.2		78	81.9-118.7		
Zinc	101		mg/kg wet	1.00	115		87	79.8-120.6		
Arsenic	67.8		mg/kg wet	1.50	77.2		88	82.4-117.6		
Copper	64.3		mg/kg wet	1.00	67.1		96	82.7-117.3		
Chromium	108		mg/kg wet	1.00	124		88	81.2-119.2		
Batch 1804794 - SW846 3005A										
<u>Blank (1804794-BLK1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 12-Apr-18</u>					
Zinc	< 0.0050		mg/l	0.0050						
Copper	< 0.0050		mg/l	0.0050						
Lead	< 0.0075		mg/l	0.0075						
Arsenic	< 0.00400		mg/l	0.00400						
Chromium	< 0.0050		mg/l	0.0050						
<u>LCS (1804794-BS1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>					
Copper	1.36		mg/l	0.0050	1.25		109	85-115		
Lead	1.32		mg/l	0.0075	1.25		105	85-115		
Arsenic	1.338		mg/l	0.00400	1.25		107	85-115		
Zinc	1.33		mg/l	0.0050	1.25		106	85-115		
Chromium	1.29		mg/l	0.0050	1.25		103	85-115		
<u>LCS Dup (1804794-BSD1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>					
Arsenic	1.324		mg/l	0.00400	1.25		106	85-115	1	20
Lead	1.31		mg/l	0.0075	1.25		104	85-115	0.9	20
Copper	1.35		mg/l	0.0050	1.25		108	85-115	1	20
Zinc	1.36		mg/l	0.0050	1.25		109	85-115	3	20
Chromium	1.32		mg/l	0.0050	1.25		105	85-115	2	20
<u>Duplicate (1804794-DUP1)</u>					<u>Source: SC45495-02 Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>					
Lead	0.0062	J	mg/l	0.0075		0.0066				20
Copper	0.0029	J	mg/l	0.0050		0.0030			5	20
Arsenic	0.0084		mg/l	0.00400		0.0083			2	20
Zinc	0.0180		mg/l	0.0050		0.0182			0.8	20
Chromium	0.0016	J	mg/l	0.0050		0.0016			3	20

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Soluble Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW846 6010C</u>										
Batch 1804797 - SW846 3005A										
<u>Blank (1804797-BLK1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>					
Zinc	< 0.0050		mg/l	0.0050						
Arsenic	< 0.0040		mg/l	0.0040						
Chromium	< 0.0050		mg/l	0.0050						
Copper	< 0.0050		mg/l	0.0050						
Lead	< 0.0075		mg/l	0.0075						
<u>LCS (1804797-BS1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>					
Lead	1.30		mg/l	0.0075	1.25		104	85-115		
Arsenic	1.31		mg/l	0.0040	1.25		105	85-115		
Copper	1.37		mg/l	0.0050	1.25		110	85-115		
Zinc	1.30		mg/l	0.0050	1.25		104	85-115		
Chromium	1.27		mg/l	0.0050	1.25		102	85-115		
<u>LCS Dup (1804797-BSD1)</u>					<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>					
Copper	1.37		mg/l	0.0050	1.25		110	85-115	0.1	20
Arsenic	1.32		mg/l	0.0040	1.25		105	85-115	0.4	20
Chromium	1.27		mg/l	0.0050	1.25		102	85-115	0	20
Zinc	1.31		mg/l	0.0050	1.25		105	85-115	0.2	20
Lead	1.30		mg/l	0.0075	1.25		104	85-115	0.2	20
<u>Duplicate (1804797-DUP1)</u>					<u>Source: SC45495-02</u>		<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>			
Arsenic	0.0037	J,QR8	mg/l	0.0040		0.0046			21	20
Copper	< 0.0050		mg/l	0.0050		BRL				20
Lead	< 0.0075		mg/l	0.0075		BRL				20
Zinc	0.0136		mg/l	0.0050		0.0128			6	20
Chromium	< 0.0050		mg/l	0.0050		BRL				20
<u>Matrix Spike (1804797-MS1)</u>					<u>Source: SC45495-02</u>		<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>			
Lead	1.24		mg/l	0.0075	1.25	BRL	99	75-125		
Arsenic	1.35		mg/l	0.0040	1.25	0.0046	108	75-125		
Copper	1.37		mg/l	0.0050	1.25	BRL	109	75-125		
Zinc	1.29		mg/l	0.0050	1.25	0.0128	102	75-125		
Chromium	1.25		mg/l	0.0050	1.25	BRL	100	75-125		
<u>Matrix Spike Dup (1804797-MSD1)</u>					<u>Source: SC45495-02</u>		<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>			
Chromium	1.27		mg/l	0.0050	1.25	BRL	101	75-125	1	20
Copper	1.38		mg/l	0.0050	1.25	BRL	110	75-125	1	20
Lead	1.26		mg/l	0.0075	1.25	BRL	100	75-125	1	20
Zinc	1.31		mg/l	0.0050	1.25	0.0128	104	75-125	1	20
Arsenic	1.36		mg/l	0.0040	1.25	0.0046	109	75-125	1	20
<u>Post Spike (1804797-PS1)</u>					<u>Source: SC45495-02</u>		<u>Prepared: 11-Apr-18 Analyzed: 13-Apr-18</u>			
Chromium	1.25		mg/l	0.0050	1.25	BRL	100	80-120		
Copper	1.38		mg/l	0.0050	1.25	BRL	111	80-120		
Arsenic	1.35		mg/l	0.0040	1.25	0.0046	108	80-120		
Zinc	1.30		mg/l	0.0050	1.25	0.0128	103	80-120		
Lead	1.25		mg/l	0.0075	1.25	BRL	100	80-120		

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General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>EPA 335.4 / SW846 9012B</u>										
Batch 1804836 - General Preparation										
<u>Blank (1804836-BLK1)</u>	<u>Prepared & Analyzed: 10-Apr-18</u>									
Cyanide (total)	< 0.00500		mg/l	0.00500						
<u>Blank (1804836-BLK2)</u>	<u>Prepared & Analyzed: 10-Apr-18</u>									
Cyanide (total)	< 0.00500		mg/l	0.00500						
<u>LCS (1804836-BS1)</u>	<u>Prepared & Analyzed: 10-Apr-18</u>									
Cyanide (total)	0.233		mg/l	0.00500	0.250		93	90-110		
<u>LCS (1804836-BS2)</u>	<u>Prepared & Analyzed: 10-Apr-18</u>									
Cyanide (total)	0.237		mg/l	0.00500	0.250		95	90-110		
<u>Reference (1804836-SRM1)</u>	<u>Prepared & Analyzed: 10-Apr-18</u>									
Cyanide (total)	0.287		mg/l	0.00500	0.360		80	76-123		
<u>SM2540 G (11) Mod.</u>										
Batch 1804682 - General Preparation										
<u>Duplicate (1804682-DUP1)</u>	<u>Prepared & Analyzed: 06-Apr-18</u>									
% Solids	84.7		%			85.5			1	5
<u>SW846 9012B</u>										
Batch 1804881 - General Preparation										
<u>Blank (1804881-BLK1)</u>	<u>Prepared & Analyzed: 11-Apr-18</u>									
Cyanide (total)	< 0.500		mg/kg wet	0.500						
<u>Blank (1804881-BLK2)</u>	<u>Prepared & Analyzed: 11-Apr-18</u>									
Cyanide (total)	< 0.500		mg/kg wet	0.500						
<u>LCS (1804881-BS1)</u>	<u>Prepared & Analyzed: 11-Apr-18</u>									
Cyanide (total)	24.5		mg/kg wet	0.500	25.0		98	90-110		
<u>LCS (1804881-BS2)</u>	<u>Prepared & Analyzed: 11-Apr-18</u>									
Cyanide (total)	24.6		mg/kg wet	0.500	25.0		98	90-110		
<u>Reference (1804881-SRM1)</u>	<u>Prepared & Analyzed: 11-Apr-18</u>									
Cyanide (total)	88.9		mg/kg wet	1.57	65.2		136	39.4-183		

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S818422				
<u>Calibration Check (S818422-CCV1)</u>				
C9-C18 Aliphatic Hydrocarbons	495253.1	343524.3	12.9	25
C19-C36 Aliphatic Hydrocarbons	442215.4	217244.1	-8.5	25
Unadjusted C11-C22 Aromatic Hydrocarbons	392657.1	308237.2	-7.5	25
Naphthalene	355004.5	347190.4	-2.2	25
2-Methylnaphthalene	345249.1	340103	-1.5	25
Acenaphthylene	344796.4	338270.6	-1.9	25
Acenaphthene	360543.6	353130.6	-2.1	25
Fluorene	333863.6	325622.2	-2.5	25
Phenanthrene	312307.7	286276.4	-8.3	25
Anthracene	305973.5	285651.8	-6.6	25
Fluoranthene	287257.3	246320.8	-14.3	25
Pyrene	287075.4	253148.6	-11.8	25
Benzo (a) anthracene	259888	218337.8	-16.0	25
Chrysene	267542.9	223992	-16.3	25
Benzo (b) fluoranthene	253291.9	200830	-20.7	25
Benzo (k) fluoranthene	250800.7	206646.8	-17.6	25
Benzo (a) pyrene	242256.3	199105.2	-17.8	25
Indeno (1,2,3-cd) pyrene	243450.8	197923.3	-18.7	25
Dibenzo (a,h) anthracene	244872.8	201565.4	-17.7	25
Benzo (g,h,i) perylene	238208.5	204448.6	-14.2	25
n-Nonane (C9)	301400.9	325508.2	8.0	30
n-Decane	311129.6	330438.2	6.2	25
n-Dodecane	313457	332351.2	6.0	25
n-Tetradecane	313439.7	330509.6	5.4	25
n-Hexadecane	310248.3	306831.4	-1.1	25
n-Octadecane	301571.4	287409.6	-4.7	25
n-Nonadecane	289660.7	283012.2	-2.3	25
n-Eicosane	277989.4	280230.4	0.8	25
n-Docosane	258845	264417	2.2	25
n-Tetracosane	241459.6	224889.6	-6.9	25
n-Hexacosane	221773.2	183513.9	-17.3	25
n-Octacosane	204564.1	154248.4	-24.6	25
n-Triacontane	193184	145414.2	-24.7	25
n-Hexatriacontane	96407.37	116967.4	21.3	25
Naphthalene (aliphatic fraction)	372300.9			
2-Methylnaphthalene (aliphatic fraction)	376290.8			
<u>Calibration Check (S818422-CCV2)</u>				
C9-C18 Aliphatic Hydrocarbons	495253.1	365921.7	20.2	25
C19-C36 Aliphatic Hydrocarbons	442215.4	233170.3	-1.0	25
Unadjusted C11-C22 Aromatic Hydrocarbons	392657.1	334100.7	0.7	25
Naphthalene	355004.5	363458.8	2.4	25
2-Methylnaphthalene	345249.1	355062.8	2.8	25
Acenaphthylene	344796.4	356190.2	3.3	25
Acenaphthene	360543.6	371302.2	3.0	25
Fluorene	333863.6	340875.6	2.1	25
Phenanthrene	312307.7	303913	-2.7	25
Anthracene	305973.5	304005	-0.6	25
Fluoranthene	287257.3	269176.4	-6.3	25
Pyrene	287075.4	274483.2	-4.4	25
Benzo (a) anthracene	259888	237100.8	-8.8	25
Chrysene	267542.9	242894	-9.2	25

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Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S818422				
<u>Calibration Check (S818422-CCV2)</u>				
Benzo (b) fluoranthene	253291.9	227503.8	-10.2	25
Benzo (k) fluoranthene	250800.7	226789	-9.6	25
Benzo (a) pyrene	242256.3	218903	-9.6	25
Indeno (1,2,3-cd) pyrene	243450.8	217303.8	-10.7	25
Dibenzo (a,h) anthracene	244872.8	221196.4	-9.7	25
Benzo (g,h,i) perylene	238208.5	225270.6	-5.4	25
n-Nonane (C9)	301400.9	345932.8	14.8	30
n-Decane	311129.6	351616.6	13.0	25
n-Dodecane	313457	353648	12.8	25
n-Tetradecane	313439.7	351669.8	12.2	25
n-Hexadecane	310248.3	330433.4	6.5	25
n-Octadecane	301571.4	312808.8	3.7	25
n-Nonadecane	289660.7	308157.2	6.4	25
n-Eicosane	277989.4	304925.6	9.7	25
n-Docosane	258845	285195.2	10.2	25
n-Tetracosane	241459.6	240936.6	-0.2	25
n-Hexacosane	221773.2	196562.5	-11.4	25
n-Octacosane	204564.1	164913.3	-19.4	25
n-Triacontane	193184	146301.9	-24.3	25
n-Hexatriacontane	96407.37	119431.8	23.9	25
Naphthalene (aliphatic fraction)	372300.9			
2-Methylnaphthalene (aliphatic fraction)	376290.8			
<u>Calibration Check (S818422-CCV3)</u>				
C9-C18 Aliphatic Hydrocarbons	495253.1	373834.7	22.8	25
C19-C36 Aliphatic Hydrocarbons	442215.4	229457.9	-2.7	25
Unadjusted C11-C22 Aromatic Hydrocarbons	392657.1	377394.4	14.3	25
Naphthalene	355004.5	388258.4	9.4	25
2-Methylnaphthalene	345249.1	379477	9.9	25
Acenaphthylene	344796.4	380770.6	10.4	25
Acenaphthene	360543.6	398154.2	10.4	25
Fluorene	333863.6	376405.4	12.7	25
Phenanthrene	312307.7	359960.6	15.3	25
Anthracene	305973.5	362045.6	18.3	25
Fluoranthene	287257.3	348273.4	21.2	25
Pyrene	287075.4	351654	22.5	25
Benzo (a) anthracene	259888	321122.2	23.6	25
Chrysene	267542.9	322457	20.5	25
Benzo (b) fluoranthene	253291.9	256418.2	1.2	25
Benzo (k) fluoranthene	250800.7	260678.2	3.9	25
Benzo (a) pyrene	242256.3	290028.8	19.7	25
Indeno (1,2,3-cd) pyrene	243450.8	288311	18.4	25
Dibenzo (a,h) anthracene	244872.8	273021	11.5	25
Benzo (g,h,i) perylene	238208.5	345168.8	44.9	# 25
n-Nonane (C9)	301400.9	350102.2	16.2	30
n-Decane	311129.6	356782.4	14.7	25
n-Dodecane	313457	359404	14.7	25
n-Tetradecane	313439.7	357635.4	14.1	25
n-Hexadecane	310248.3	339923.2	9.6	25
n-Octadecane	301571.4	323958.8	7.4	25
n-Nonadecane	289660.7	318399.2	9.9	25
n-Eicosane	277989.4	313339.4	12.7	25

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Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S818422				
<u>Calibration Check (S818422-CCV3)</u>				
n-Docosane	258845	286240.8	10.6	25
n-Tetracosane	241459.6	232016.8	-3.9	25
n-Hexacosane	221773.2	181829.1	-18.0	25
n-Octacosane	204564.1	161612.6	-21.0	25
n-Triacontane	193184	153810.4	-20.4	25
n-Hexatriacontane	96407.37	111323.5	15.5	25
Naphthalene (aliphatic fraction)	372300.9			
2-Methylnaphthalene (aliphatic fraction)	376290.8			
Batch S818563				
<u>Calibration Check (S818563-CCV1)</u>				
C9-C18 Aliphatic Hydrocarbons	153407.4	159123.6	16.5	25
C19-C36 Aliphatic Hydrocarbons	210096.3	169682.7	14.5	25
Unadjusted C11-C22 Aromatic Hydrocarbons	203588.8	174064.6	6.7	25
Naphthalene	167171.4	161584.1	-3.3	25
2-Methylnaphthalene	165631.1	159841.2	-3.5	25
Acenaphthylene	170223.3	163734.7	-3.8	25
Acenaphthene	178575.1	171244.6	-4.1	25
Fluorene	171181.8	164629.1	-3.8	25
Phenanthrene	171806.2	166357.9	-3.2	25
Anthracene	171406.3	165905.8	-3.2	25
Fluoranthene	175036.8	168845.5	-3.5	25
Pyrene	181092.7	174493.8	-3.6	25
Benzo (a) anthracene	164387.5	162049.8	-1.4	25
Chrysene	168872.8	165960.7	-1.7	25
Benzo (b) fluoranthene	163578.2	160796.1	-1.7	25
Benzo (k) fluoranthene	161416.8	156884.7	-2.8	25
Benzo (a) pyrene	154231.5	151544.8	-1.7	25
Indeno (1,2,3-cd) pyrene	153272.5	151209.3	-1.3	25
Dibenzo (a,h) anthracene	149515.1	150527.9	0.7	25
Benzo (g,h,i) perylene	149111.5	145505.1	-2.4	25
n-Nonane (C9)	108209.2	89678.22	-17.1	30
n-Decane	114319.4	139688.5	22.2	25
n-Dodecane	122848.7	149171.7	21.4	25
n-Tetradecane	128333.7	155698	21.3	25
n-Hexadecane	132013.2	160784.3	21.8	25
n-Octadecane	136150.7	165080.9	21.2	25
n-Nonadecane	136287	164144.6	20.4	25
n-Eicosane	137007.9	163717.4	19.5	25
n-Docosane	139366.1	165462.8	18.7	25
n-Tetracosane	141751.9	166301.7	17.3	25
n-Hexacosane	142585.4	167594.5	17.5	25
n-Octacosane	142059.7	163832.2	15.3	25
n-Triacontane	146067.8	178630.8	22.3	25
n-Hexatriacontane	142985.2	107484.6	-24.8	25
Naphthalene (aliphatic fraction)	156428.4			
2-Methylnaphthalene (aliphatic fraction)	157893.3			

Volatile Organic Compounds - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S818300				
<u>Calibration Check (S818300-CCV1)</u>				
Benzene	62655.02	68068.2	8.6	25
Ethylbenzene	50460.36	53440.36	5.9	25
Methyl tert-butyl ether	35583.6	36425.24	2.4	25
Naphthalene	55256.15	52234.92	-5.5	25
Toluene	55290.09	58551.84	5.9	25
m,p-Xylene	56348.53	60308.18	7.0	25
o-Xylene	48848.33	52116.62	6.7	25
<u>Calibration Check (S818300-CCV2)</u>				
Benzene	62655.02	75505.72	20.5	25
Ethylbenzene	50460.36	61496.22	21.9	25
Methyl tert-butyl ether	35583.6	40714.62	14.4	25
Naphthalene	55256.15	62470.2	13.1	25
Toluene	55290.09	66788.28	20.8	25
m,p-Xylene	56348.53	69490.49	23.3	25
o-Xylene	48848.33	59710.96	22.2	25
Batch S818302				
<u>Calibration Check (S818302-CCV1)</u>				
Benzene	107662.5	115105	6.9	25
Ethylbenzene	69838.47	74131.38	6.1	25
Methyl tert-butyl ether	56663.34	57859.08	2.1	25
Naphthalene	33550.48	34926.54	4.1	25
Toluene	88724.32	96097.42	8.3	25
m,p-Xylene	73746.05	80891.53	9.7	25
o-Xylene	64827.25	71334.62	10.0	25
<u>Calibration Check (S818302-CCV2)</u>				
Benzene	107662.5	112770.2	4.7	25
Ethylbenzene	69838.47	72667.8	4.1	25
Methyl tert-butyl ether	56663.34	57784.02	2.0	25
Naphthalene	33550.48	35091.14	4.6	25
Toluene	88724.32	94273.34	6.3	25
m,p-Xylene	73746.05	78718.79	6.7	25
o-Xylene	64827.25	69581.54	7.3	25

The following list indicates the date and time low-level VOC soil/sediment samples were placed in the freezer at the lab:

SC45495-01

SP13_040518-1

4/6/2018 4:16 PM

Notes and Definitions

D	Data reported from a dilution
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR2	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR8	Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.
VC10	The VOC preserved soil sample is not within the 1:1 weight to volume ratio as recommended by SW846 method 5035A but may be within the 1:1 volume to volume ratio. This variance may affect the final reporting limit.
Z-2	Closing CCV are aloud to Fail up to four analytes.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Batch Summary

1804682

General Chemistry Parameters

1804682-DUP1
SC45495-01 (SP13_040518-1)

1804705

Extractable Petroleum Hydrocarbons

1804705-BLK1
1804705-BS1
1804705-BS2
1804705-BSD1
SC45495-01 (SP13_040518-1)

1804714

Volatile Organic Compounds

1804714-BLK1
1804714-BS1
1804714-BSD1
SC45495-01 (SP13_040518-1)

1804715

Volatile Organic Compounds

1804715-BLK1
1804715-BS1
1804715-BSD1
SC45495-02 (FRAC1_040518-1)
SC45495-03 (Trip Blank)

1804719

Volatile Organic Compounds

1804719-BLK1
1804719-BS1
1804719-BSD1
1804719-DUP1
1804719-MS1
SC45495-01 (SP13_040518-1)

1804723

Volatile Organic Compounds

1804723-BLK1
1804723-BS1
1804723-BSD1
SC45495-02 (FRAC1_040518-1)

1804729

Soluble Metals by EPA 200/6000 Series Methods

SC45495-02 (FRAC1_040518-1)

1804732

Total Metals by EPA 200/6000 Series Methods

SC45495-02 (FRAC1_040518-1)

1804792

Total Metals by EPA 6000/7000 Series Methods

1804792-BLK1
1804792-SRM1
1804792-SRM2
SC45495-01 (SP13_040518-1)

1804794

Total Metals by EPA 6000/7000 Series Methods

1804794-BLK1
1804794-BS1
1804794-BSD1
1804794-DUP1
SC45495-02 (FRAC1_040518-1)

1804797

Soluble Metals by EPA 6000/7000 Series Methods

1804797-BLK1
1804797-BS1
1804797-BSD1
1804797-DUP1
1804797-MS1
1804797-MSD1
1804797-PS1
SC45495-02 (FRAC1_040518-1)

1804836

General Chemistry Parameters

1804836-BLK1
1804836-BLK2
1804836-BS1
1804836-BS2
1804836-SRM1
SC45495-02 (FRAC1_040518-1)

1804881

General Chemistry Parameters

1804881-BLK1
1804881-BLK2
1804881-BS1
1804881-BS2
1804881-SRM1
SC45495-01 (SP13_040518-1)

1805015**Extractable Petroleum Hydrocarbons**

1805015-BLK1
1805015-BS1
1805015-BS3
1805015-BSD1
SC45495-02 (FRAC1_040518-1)

S711135**Volatile Organic Compounds**

S711135-CAL1
S711135-CAL2
S711135-CAL3
S711135-CAL4
S711135-CAL5
S711135-CAL6
S711135-CAL7
S711135-ICV1
S711135-LCV1

S816898**Volatile Organic Compounds**

S816898-CAL1
S816898-CAL2
S816898-CAL3
S816898-CAL4
S816898-CAL5
S816898-CAL6
S816898-CAL7
S816898-ICV1
S816898-LCV1

S817144**Volatile Organic Compounds**

S817144-CAL1
S817144-CAL2
S817144-CAL3
S817144-CAL4
S817144-CAL5
S817144-CAL6
S817144-CAL7
S817144-CAL8
S817144-CAL9
S817144-ICV1
S817144-LCV1
S817144-TUN1

S817579**Extractable Petroleum Hydrocarbons**

S817579-CAL1
S817579-CAL2
S817579-CAL3
S817579-CAL4
S817579-CAL5

S817579-CAL6
S817579-CAL7
S817579-CAL8
S817579-CAL9
S817579-CALA
S817579-CALB
S817579-CALC
S817579-ICV1
S817579-LCV1

S818269**Volatile Organic Compounds**

S818269-CAL1
S818269-CAL2
S818269-CAL3
S818269-CAL4
S818269-CAL5
S818269-CAL6
S818269-CAL7
S818269-CAL8
S818269-CAL9
S818269-ICV1
S818269-LCV1
S818269-TUN1

S818293**Extractable Petroleum Hydrocarbons**

S818293-CAL1
S818293-CAL2
S818293-CAL3
S818293-CAL4
S818293-CAL5
S818293-CAL6
S818293-CAL7
S818293-CAL8
S818293-CAL9
S818293-CALA
S818293-CALB
S818293-CALC
S818293-ICV1
S818293-LCV1

S818300**Volatile Organic Compounds**

S818300-CCV1
S818300-CCV2

S818302**Volatile Organic Compounds**

S818302-CCV1
S818302-CCV2

S818312*Volatile Organic Compounds*

S818312-CCV1

S818312-TUN1

S818315*Volatile Organic Compounds*

S818315-CCV1

S818315-TUN1

S818422*Extractable Petroleum Hydrocarbons*

S818422-CCV1

S818422-CCV2

S818422-CCV3

S818562*Extractable Petroleum Hydrocarbons*

S818562-CCV1

S818562-CCV2

S818563*Extractable Petroleum Hydrocarbons*

S818563-CCV1